Construction Environmental Management Plan

Project Name:	Sydney Metro West		
Client Name:	Sydney Metro (the Principal)		
Project Address:	Delta will demolish buildings across the following sites: 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: [redacted]	Name: [redacted]	Signature: [redacted]	Date: 13/08/2021
Reviewed By: (Project Manager)	Name: [redacted]	Signature: [redacted]	Date: 23/08/2021
Authorised By: (Project Director)):	Name: [redacted]	Signature: [redacted]	Date: 25/08/2021

Contents

List of Abbreviations

AA	Acoustics Advisor
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CMP	Construction Management Plan
CoRMP	Chain of Responsibility Management Plan
DEMP	Delta Environmental Management Plan
DPE	Department of Planning and Environment
ECM	Environmental Control Map
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	NSW Environment Protection Agency
ER	Environmental Representative
ESCP	Erosion and Sediment Control Plan
IMS	Integrated Management System
ISO	International Organisation for Standards
LIW	Low Impact Work
MCoA	Minister for Planning, Industry and Environment's Conditions of Approval
QF	Delta Quality Form
REMM	Revised Environmental Mitigation Measure
SEF	Delta Safety and Environmental Form
SMWR OCCS	Sydney Metro West Requirements – Overarching Community Communications Strategy (OCCS)
SMWR GS	Sydney Metro West Requirements – General Specification
SMWR PS	Sydney Metro West Requirements – Particular Specification
SOP	Delta Standard Operating Procedure
SWMS	Safe Work Method Statement

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; or
- 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*
a	16/08/2021	Issued for internal comment	All	[redacted]	
0	25/08/2021	Issued for comment and consultation	All	[redacted]	
1	27/09/2021	Updated to satisfy comments	All	[redacted]	
2	14/10/2021	Updated to satisfy comments	All	[redacted]	
3	10/11/2021	Updated to reflect SMW Compliance Tracking Program	6.13.6	[redacted]	
4	02/12/2021	Updated to include Phase C2 works	All	[redacted]	
5	17/12/2021	Updated to satisfy comments	All	[redacted]	
6	22/12/2021	Updated to satisfy comments	All	[redacted]	
7	15/03/2022	Updated to capture asbestos in soils removal at Westmead	All	[redacted]	
8	30/03/2022	Updated to satisfy comments	All	[redacted]	
9	04/04/2022	Updated SEF073	pg 59	[redacted]	

Distribution Register

Rev No.	*Date of Issue*	*Name of Recipient*	*Position / Organisation*
0	***25/08/2021***	[redacted]	
1	***27/09/2021***	[redacted]	
2	***14/10/2021***	[redacted]	
3	***10/11/2021***	[redacted]	
4	***02/12/2021***	[redacted]	

5	*17/12/2021*	[redacted]	[redacted]
6	*22/12/2021*	[redacted]	[redacted]
7	*15/03/2022*	[redacted]	[redacted]
8	*30/03/2022*	[redacted]	[redacted]
9	04/04/2022	[redacted]	[redacted]

2 INTRODUCTION

2.1 CEMP Purpose

This Construction Environmental Management Plan (CEMP) and associated sub plans have been prepared by Delta Pty Ltd. (Delta) in accordance with the:

- Minister for Planning, Industry and Environment's Conditions of Approval (MCoA) SSI 10038 for the demolition (Phase C1) and Archaeological of the Sydney Metro West Project, including;
  - Sydney Metro West – Westmead to The Bays and Sydney CBD Environmental Impact Statement dated 15 April 2020;
  - Sydney Metro West – Westmead to The Bays and Sydney CBD Submissions Report dated 20 November 2020; and
  - Sydney Metro West – Westmead to The Bays and Sydney CBD Amendment Report dated 20 November 2020.
  - Sydney Metro West –Westmead to The Bays and Sydney CBD Modification Request Letter dated 21 June 2021.
- Sydney Metro Construction Environmental Management Framework (CEMF).

This CEMP and its associated Sub Plans provide specific management measures to ensure that Delta's enabling works have minimal environmental impact and, where possible, enhanced environmental outcomes.

Implementing the CEMP and Sub Plans effectively will ensure that the Project meets regulatory and policy requirements in a systematic manner and continually improves its performance.

All Delta staff and subcontractors are required to comply fully with the requirements of this CEMP and the various sub-plans.

2.2 CEMP Scope

This CEMP addresses environmental issues and risks associated with the Project, and impacts that are influenced by demolition methodologies and external factors such as sensitive receptors. It covers all areas where physical works will occur, or areas that may be impacted by the works, and is applicable over the full duration of the Project.

The CEMP and Sub Plans:

- Capture environmental issues and Revised Environmental Mitigation Measures (REMMs) already identified and assessed through environmental assessments and Conditions of Approval relating to the Project;
- Incorporate these measures into a comprehensive framework to facilitate and ensure their appropriate management throughout the project;
- Include management measures, procedures, monitoring, auditing, and reporting, and allocate responsibilities to manage environmental risks and opportunities;
- Fulfil the requirement of the MCoAs for Sydney Metro West (SSI 10038).

2.3 Environmental Management System Overview

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:

- ISO14001 Environmental management,
- AS/NZS45001 Occupational Health and Safety Management Systems; and
- ISO9001 Quality Management Systems.

The Delta signed corporate Environment Policy has been attached to this CEMP in **Appendix A**.

2.4 Conditions of Approval

The MCoAs relevant to the CEMP are identified in **Table 1**. A reference is included to indicate where and how the MCoA is addressed in this CEMP or other project management documents.

2.5 Sydney Metro West Requirements

Delta's specific environmental requirements associated with the early works package being undertaken on behalf of Sydney Metro (the Principal) are provided in the relevant contract documents. The contract provides a clear allocation or environmental requirements, which mirrors the requirements set out in the Sydney Metro Phasing Report.

This CEMP is aligned to each element of the CEMF as required under the Contract and Phasing Report. **Table 2** below includes references to indicate where the CEMF requirements are address in this CEMP.

Table 1 MCoAs Relevant to the CEMP

Condition No.	Relevant requirement	Reference
A1	The Proponent must carry out Stage 1 of the CSSI in accordance with the conditions of this approval 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.	CEMP Section 2.1
A2	Stage 1 of the CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 of this schedule unless otherwise specified in, or required under, this approval.	This Plan, and relevant Sub Plans
A6	Where the conditions of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; (c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that the party(s) has none or has failed to provide feedback after repeated requests; (d) outline of the issues raised by the identified party(s) and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.	Section 5, Appendix K, and Consultation Appendix of relevant Sub Plan
A16	Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 of this schedule can only be established and used in each case if: (a) they are located within or immediately adjacent to the Construction Boundary; and (b) they are not located next to sensitive land user(s) (including where an access road is between the facility and the receiver), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and (c) they have no impacts on Heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the conditions of this approval; and (d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the conditions of this approval, including in relation to environmental, social and economic impacts. Note: This condition does not apply to any ancillary facilities or work that are exempt or complying development, established before the commencement of construction under this approval or minor ancillary facilities established under Condition A21 of this schedule.	CEMP Section 3.2
A17	Before establishment of any ancillary facility (excluding exempt or complying development, minor ancillary facilities determined by the ER to have minimal environmental impact and those established under Condition A21 of this schedule, and those considered in an	CEMP Section 3.2

Condition No.	Relevant requirement	Reference
	approved CEMP), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the ancillary facilities. The Site Establishment Management Plan must be prepared in consultation with the Relevant Council(s) and relevant government agencies. The Site Establishment Management Plan must include: ***(a)*** a description of activities to be undertaken during establishment of the ancillary facility (including scheduling and duration of work to be undertaken at the site); ***(b)*** figures illustrating the proposed operational site layout and the location of the closest sensitive land user(s); ***(c)*** a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of site establishment work; ***(d)*** details of how the site establishment activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in Condition A1 of this schedule, and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and ***(e)*** a program for monitoring the performance outcomes, including a program for construction noise monitoring, where appropriate or required. Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each ancillary facility.	
A18	With the exception of a Site Establishment Management Plan relating to the Silverwater ancillary facility referred to in Condition A19 below and any other Site Establishment Management Plan expressly nominated by the Planning Secretary to be endorsed by the ER, all Site Establishment Management Plans must be submitted to the Planning Secretary for approval one (1) month before the establishment of any ancillary facilities.	CEMP Section 3.2
A19	A Site Establishment Management Plan relating to the Silverwater ancillary facility and any other Site Establishment Management Plan expressly nominated by the Planning Secretary must be submitted to the ER for endorsement one (1) month before the establishment of that ancillary facility or as otherwise agreed with the ER.	CEMP Section 3.2
A20	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). Note: This condition 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.	CEMP Section 3.2
A21	Lunch sheds, office sheds, portable toilet facilities, and the like, can be established and used where they have been assessed in the documents listed in Condition A1 of this schedule or satisfy the following criteria: (a) are located within or adjacent to the Construction Boundary; and (b) have been assessed by the ER to have:	CEMP Section 3.2

Condition No.	Relevant requirement	Reference
	(i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the ICNG, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and (ii) minimal environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and Heritage items beyond those already approved under other conditions of this approval.	
A22	Boundary screening must be erected around ancillary facilities that are adjacent to sensitive land user(s) for the duration that the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners.	CEMP Section 5.6.
A23	Boundary screening required under Condition A22 of this schedule must minimise visual impacts on adjacent sensitive land user(s).	CEMP Section 5.6.
A27	Work must not commence until an Environmental Representative (ER) has been nominated by the Proponent and approved by the Planning Secretary.	CEMP Section 6.12.1, 6.15, Table 8
A31	The Proponent must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition A30 of this schedule (including preparation of the ER monthly report), as well as: (a) the Complaints Register (to be provided on a weekly basis or as requested); and (b) a copy of any assessment carried out by the Proponent of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work).	CEMP Section 6.12.1, Table 8, 7.4
A32	A suitably qualified and experienced Acoustics Advisor(s) (AA) in noise and vibration management, who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of work (as required by Condition A35 of this schedule) and for no less than six (6) months following completion of construction of Stage 1 of the CSSI.	CEMP Section 6.12.1, Table 8
A33	Work must not commence until an AA has been nominated by the Proponent and approved by the Planning Secretary.	CEMP Section 6.12.1, Table 8
A34	The Proponent must cooperate with the AA by: (a) providing access to noise and vibration monitoring activities as they take place; (b) providing access to the Complaints Register if requested; (c) providing for review of noise and vibration documents required to be prepared under the conditions of this approval; and (d) considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted.	Refer to CNVMP
A39	Independent Audits of Stage 1 of the CSSI must be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements* (DPIE, 2020).	CEMP Section 6.13.6 and Table 10
A39.1	Notwithstanding Condition A39, the Proponent may prepare an audit program to outline the scope and timing of each independent audit that will be undertaken during construction. If prepared, the audit program must be developed in consultation with, and approved by, the Planning Secretary before commencement of the first audit and implemented throughout construction.	CEMP Section 6.13.6 and Table 10

Condition No.	Relevant requirement	Reference
A43	The Planning Secretary must be notified via phone or in writing via the Major Projects website immediately after the Proponent becomes aware of an incident. Any notification via phone must be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call. The written notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and general nature of the incident.	CEMP Section 6.11.3
A44	Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix A.	CEMP Section 6.11.3
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.	Refer to Chain of Responsibility Management Plan (CoRMP)
A48	The CSSI name, application number, telephone number, postal address and email address required under Condition B3 of this schedule must be available on site boundary fencing / hoarding at each ancillary facility before the commencement of construction. This information must also be provided on the website required under Condition B11 of this schedule.	Refer to Site Establishment Plan
B11	A website or webpage providing information in relation to the CSSI must be established before commencement of work and maintained for the duration of construction, and for a minimum of 24 months following the completion of all phases of construction of Stage 1 of the CSSI. Up-to- date information (excluding confidential, private, commercial information or other documents as agreed to by the Planning Secretary) must be published before the relevant work commencing and maintained on the website or dedicated pages including: ***(d)*** a copy of each statutory approval, licence or permit required and obtained in relation to Stage 1 of the CSSI, or where the issuing agency maintains a website of approvals, licences or permits, a link to that website; (e) a current copy of each document required under the conditions of this approval, which must be published within one (1) week of its approval or before the commencement of any work to which they relate or before their implementation, as the case may be; Where the information / document relates to a particular work or is required to be implemented, it must be published before the commencement of the relevant work to which it relates or before its implementation. All information required in this condition is to be provided on the website or webpage, and easy to navigate.	CEMP Section 7.5
C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 of this schedule to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 of this schedule will be implemented and achieved during construction.	CEMP Section 2.5
C2	With the exception of any CEMPs expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMPs must be submitted to the Planning Secretary for approval.	CEMP Section 5
C3	The CEMP(s) not requiring the Planning Secretary's approval must be submitted to the ER for endorsement no later than one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of	CEMP Section 5

<table>
<tr><th>Condition No.</th><th>Relevant requirement</th><th>Reference</th></tr>
<tr><td></td><td>that phase. That CEMP must obtain the endorsement of the ER as being consistent with the conditions of this approval and all undertakings made in the documents listed in Condition A1 of this schedule.</td><td></td></tr>
<tr><td>C4</td><td>Any CEMP to be approved by the Planning Secretary must be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase.</td><td>CEMP Section 5</td></tr>
<tr><td>C5</td><td>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:
<table>
<tr><th></th><th>Required CEMP Sub-plan</th><th>Relevant government agencies to be consultedfor each CEMP Sub-plan</th><th>Applicability to the Project</th></tr>
<tr><td>(a)</td><td>Noise and vibration</td><td>SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and RelevantCouncil(s)</td><td>Applicable as per phasing report prepared under MCoA A10</td></tr>
<tr><td>(b)</td><td>Flora and fauna</td><td>DPIE EES, DPI Fisheries, SOPA (in respect of SydneyOlympic Park) and Relevant Council(s)</td><td>Applicable as per phasing report prepared under MCoA A10</td></tr>
<tr><td>(c)</td><td>Soil and water</td><td>DPIE EES, Relevant Council(s), SOPA (in respect of Sydney Olympic Park) and Sydney Water (if SydneyWater’s assets are affected)</td><td>Applicable as per phasing report prepared under MCoA A10</td></tr>
<tr><td>(d)</td><td>Heritage (Non-Aboriginal and Aboriginal)</td><td>Heritage NSW, SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays)and Relevant Council(s)</td><td>Applicable as per phasing report prepared under MCoA A10</td></tr>
<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>
</table></td><td>CEMP Section 5 and Appendix K
Refer to Consultation Appendix of relevant CEMP Sub Plans</td></tr>
<tr><td>C6</td><td>The CEMP Sub-plans must state how:
(a) the environmental performance outcomes identified in the documents listed in Condition A1
(b) of this schedule will be achieved;
(c) the mitigation measures identified in the documents listed in Condition A1 of this schedule will be implemented;
(d) the relevant conditions of this approval will be complied with; and
(e) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.</td><td>Refer to Section 2 of relevant CEMP sub-plans</td></tr>
</table>

<table>
<tr><th>Condition No.</th><th>Relevant requirement</th><th>Reference</th></tr>
<tr><td>C7</td><td>With the exception of any CEMP Sub-plans expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP Sub-plans must be submitted to the Planning Secretary for approval.</td><td>CEMP Section 5</td></tr>
<tr><td>C8</td><td>The CEMP Sub-plans not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all relevant undertakings made in the documents listed in Condition A1 of this schedule. Any of these CEMP Sub-plans must be submitted to the ER with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is phased no later than one (1) month before the commencement of that phase.</td><td>CEMP Section 5</td></tr>
<tr><td>C9</td><td>Any of the CEMP Sub-plans to be approved by the Planning Secretary must be submitted to the Planning Secretary with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is phased no later than one (1) month before the commencement of that phase.</td><td>CEMP Section 5</td></tr>
<tr><td>C10</td><td>Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction. Where construction of Stage 1 of the CSSI is phased, construction of a phase must not commence until the CEMP and CEMP Sub-plans for that phase have been approved by the Planning Secretary or certified by the ER upon nomination by the Planning Secretary (whichever is applicable).</td><td>CEMP Section 5</td></tr>
<tr><td>C14</td><td>The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of construction of Stage 1 of the CSSI against the performance predicted in the documents listed in Condition A1 of this schedule or in the CEMP:
<table>
<tr><th></th><th>Required Construction Monitoring Programs</th><th>Relevant government agencies to be consultedfor each Construction Monitoring Program</th></tr>
<tr><td>(a)</td><td>Noise and vibration</td><td>EPA, ~~SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays)~~ and Relevant Council(s)</td></tr>
</table></td><td>CEMP Section 5 and Appendix K</td></tr>
<tr><td>C15</td><td>Each Construction Monitoring Program must provide:
(a) details of baseline data available including the period of baseline monitoring;
(b) details of baseline data to be obtained and when;
(c) details of all monitoring of the project to be undertaken;
(d) the parameters of the project to be monitored;
(e) the frequency of monitoring to be undertaken;
(f) the location of monitoring;
(g) the reporting of monitoring results and analysis results against relevant criteria;
(h) details of the methods that will be used to analyse the monitoring data;</td><td>CEMP Section 6.13.4</td></tr>
</table>

Condition No.	Relevant requirement	Reference
	(i) procedures to identify and implement additional mitigation measures where the results of the monitoring indicated unacceptable project impacts; (j) a consideration of SMART principles; and (k) any consultation to be undertaken in relation to the monitoring programs; and (l) any specific requirements as required by Conditions C16 to C17 of this schedule.	
C16	The Noise and Vibration Construction Monitoring Program and Blasting Construction Monitoring Program must include: (a) noise and vibration monitoring determined in consultation with the AA to confirm the best-achievable construction noise and vibration levels with consideration of all reasonable and feasible mitigation and management measures that will be implemented; (b) for the purposes of (a), noise monitoring must be undertaken during the day, evening and night-time periods and within the first month of work as well as throughout the construction period and cover the range of activities being undertaken at the sites; and (c) a process to undertake real time noise and vibration monitoring. The results of the monitoring must be readily available to the construction team, the Proponent, ER and AA. The Planning Secretary and EPA must be provided with access to the results on request.	CEMP Section 6.13.1
C18	With the exception of any Construction Monitoring Programs expressly nominated by the Planning Secretary to be endorsed by the ER, all Construction Monitoring Programs must be submitted to the Planning Secretary for approval.	CEMP Section 6.13.1
C19	The Construction Monitoring Programs not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all undertakings made in the documents listed in Condition A1 of this schedule. Any of these Construction Monitoring Programs must be submitted to the ER for endorsement at least one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase.	CEMP Section 6.13.1
C20	Any of the Construction Monitoring Programs which require Planning Secretary approval must be endorsed by the ER and then submitted to the Planning Secretary for approval at least one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase.	CEMP Section 6.13.1
C21	Unless otherwise agreed with the Planning Secretary, construction must not commence until the Planning Secretary has approved, or the ER has endorsed (whichever is applicable), all of the required Construction Monitoring Programs and all relevant baseline data for the specific construction activity has been collected.	CEMP Section 6.13.1
C22	The Construction Monitoring Programs, as approved by the Planning Secretary or the ER has endorsed (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary or the ER (whichever is applicable), whichever is the greater.	CEMP Section 6.13.1
C23	The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, ER and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program. Note: Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.	CEMP Section 6.13.1

Condition No.	Relevant requirement	Reference
D1	All reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction.	Refer to AQMP Sub plan
D2	The clearing of native vegetation must be minimised to the greatest extent practicable with the objective of reducing impacts to threatened ecological communities and threatened species habitat.	Refer to FFMP Sub-plan
D3	Impacts to plant community types must not exceed those identified in the documents listed in Condition A1 of this schedule, unless otherwise approved by the Planning Secretary. In requesting the Planning Secretary's approval, an assessment of the additional impact(s) to plant community types and an updated ecosystem and / or species credit requirement under Condition D4 below, if required, must be provided.	Refer to FFMP Sub-plan
D7	Before the removal or clearing of any vegetation, or the demolition of structures identified as potential roosting sites for microbats at the Clyde Stabling and Maintenance Facility site commences, pre-clearing / demolition inspections for the threatened species must be undertaken. The inspections, and any subsequent relocation of fauna and associated management / offset measures, must be undertaken under the guidance of a suitably qualified and experienced ecologist. Survey and relocation methodologies and management / offset measures must be included in the Flora and fauna CEMP Sub-plan required under Condition C5 of this schedule or the relevant Site Establishment Management Plan required by Condition A17 of this schedule.	Refer to FFMP Sub-plan
D8	In the event roosting sites have been identified under Condition D7 above, bat boxes must be provided or suitable habitat built within the Clyde Stabling and Maintenance Facility site.	Refer to FFMP Sub-plan
D9	As many mature trees and as much urban canopy as practicable must be retained during construction. Canopy trimming should be considered where practicable prior to any mature tree removal.	Refer to FFMP Sub-plan
D13	The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1 of this schedule. Unexpected heritage finds identified by Stage 1 of the CSSI must be managed in accordance with the Unexpected Finds Protocol outlined in Conditions D31 to D33 of this schedule. Consideration of avoidance and redesign to protect state significant unexpected finds must be addressed where this condition applies.	Refer to HMSP
D14	Before installing protective site boundary hoarding or equipment used for vibration and noise monitoring at any Heritage item identified in the documents listed in Condition A1 of this schedule, the advice of a suitably qualified and experienced built heritage expert must be obtained and implemented to ensure any such work does not have an adverse impact on the heritage significance of the item. The installation must also consider and avoid impacts to potential historical archaeology and seek advice from the Excavation Director approved under Condition D27 below.	Refer to NVMSP
D15	Before commencement of any excavation at the Parramatta metro station construction site, a detailed investigation must be undertaken to precisely locate the Parramatta Convict Drain. All options available to retain the Parramatta Convict Drain in situ must be considered. If retention of any part of the Parramatta Convict Drain located in situ is not feasible, the Proponent must satisfactorily demonstrate to the Planning Secretary why its removal is appropriate. If it is not feasible to retain the Parramatta Convict Drain in situ, archival recording must be undertaken on the affected section of the item in accordance with Heritage Council of NSW guidelines.	Refer to HMP
D34	A detailed land use survey must be undertaken to confirm sensitive receivers (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration and construction ground-borne noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates	Refer to NVMSP

Condition No.	Relevant requirement	Reference
	construction noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Noise and Vibration CEMP Sub- plan required under Condition C5 of this schedule.	
D35	Work must only be undertaken during the following hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 6:00pm Saturdays; and (c) at no time on Sundays or public holidays.	CEMP Section 8.1
D36	Except as permitted by an EPL, highly noise intensive work that results in an exceedance of theapplicable NML at the same receiver must only be undertaken: (a) between the hours of 8:00 am to 6:00 pm Monday to Friday; (b) between the hours of 8:00 am to 1:00 pm Saturday; and (c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of notless than one (1) hour. For the purposes of this condition, 'continuously' includes any period during which there is lessthan one (1) hour between ceasing and recommencing any of the work.	CEMP Section 8.1
D37	Notwithstanding Conditions D35 and D36 of this schedule work may be undertaken outside the hours specified in the following circumstances: (a) Safety and Emergencies, including: (i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (ii) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm. On becoming aware of the need for emergency work in accordance with (a)(ii) above, the AA, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. The Proponent must use best endeavours to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work. (b) Low impact, including: (i) construction that causes LAeq(15 minute) noise levels: • no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s); and (ii) construction that causes LAFmax(15 minute) noise levels no more than 15 dB(A) above the rating background level at any residence; or (iii) construction that causes: • continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), or	CEMP Section 8.2 Refer to NVMSP for out of hours protocol CEMP Section 6.11.2

Condition No.	Relevant requirement	Reference
	• intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006). (c) By Approval, including: (i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (ii) works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition D38 of this schedule; or (iii) negotiated agreements with directly affected residents and sensitive land user(s). (d) By Prescribed Activity, including: (i) tunnelling (excluding cut and cover tunnelling and surface works) are permitted 24 hours a day, seven days a week; or (ii) concrete batching at the Clyde construction site is permitted 24 hours a day, seven days a week; or (iii) delivery of material that is required to be delivered outside of standard construction hours in Condition D35 of this schedule to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to / from the Five Dock and Westmead construction sites and to / from Burwood North construction site using any roads / streets other than directly from Parramatta Road; or (iv) haulage of spoil except between the hours of 10:00 pm and 7:00 am to / from the Five Dock and Westmead construction sites and to / from Burwood North construction site using any roads / streets other than directly from Parramatta Road; or (v) work within an acoustic shed where there is no exceedance of noise levels under Low impact circumstances identified in (b) above, unless otherwise agreed by the Planning Secretary. Note: Tunnelling does not include station box excavation.	
D38	An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of work which are outside the hours defined in Conditions D35 and D36 of this schedule. The Protocol must be approved by the Planning Secretary before commencement of the out-of-hours work. The Protocol must be prepared in consultation with the ER, AA and EPA. The Protocol must provide: (a) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: (i) the ER and AA review all proposed out-of-hours activities and confirm their risk levels; (ii) low risk activities can be approved by the ER in consultation with the AA; and (iii) high risk activities that are approved by the Planning Secretary; (b) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria; (c) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods consistent with the requirements of Condition D50 of this schedule. The measures must take into account the predicted noise levels and the likely frequency and duration of the out- of-hours works that sensitive land user(s) would be exposed to, including the number of noise awakening events;	Refer to NVMSP

Condition No.	Relevant requirement	Reference
	(d) procedures to facilitate the coordination of out-of-hours work including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided; and (e) notification arrangements for affected receivers for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works. This condition does not apply if the requirements of Condition D37(b) of this schedule are met. Note: Out-of-hours work is any work that occurs outside the construction hours identified in Condition D35 and D36 of this schedule.	
D52	Sensitive land uses located along local roads used to divert traffic from the closure of Alexandra Avenue in Westmead that will be affected by additional road traffic noise from the diverted traffic in excess of the criteria identified in the NSW Road Noise Policy (the RNP criteria) during construction of Stage 1 of the CSSI (the Affected Properties) are eligible to receive at-property noise mitigation treatments. Owners of Affected Properties must be advised of the range of noise mitigation options that can be installed at or in their property and given a choice as to which of these they agree to have installed. A copy of all noise mitigation guidelines and procedures that will be used to determine at-property treatment at each Affected Property must be provided to the property owner. At property mitigation measures and packages must be determined based on the measured exceedance levels above the RNP criteria. Road traffic noise levels must be measured before and after the altered traffic flow detour.	Refer to CTMP for Westmead and the Noise & Vibration Management Sub Plan
D60	A suitably qualified and experienced person must undertake condition surveys of all buildings, structures, utilities and the like identified in the documents listed in Condition A1 of this schedule as being at risk of damage before commencement of any work that could impact on the subject surface / subsurface structure. The results of the surveys must be documented in a Pre- construction Condition Survey Report for each item surveyed. Copies of Pre-construction Condition Survey Reports must be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, and no later than one (1) month before the commencement of the work that could impact on the subject surface / subsurface structure.	CEMP Section 6.8
D61	Condition surveys of all items for which condition surveys were undertaken in accordance with Condition D60 of this schedule must be undertaken by a suitably qualified and experienced person after completion of the work identified in Condition D60 of this schedule. The results of the surveys must be documented in a Post-construction Condition Survey Report for each item surveyed. Copies of Post-construction Condition Survey Reports must be provided to the landowners of the items surveyed, and no later than three (3) months following the completion of the work that could impact on the subject surface / subsurface structure unless otherwise agreed by the Planning Secretary.	CEMP Section 6.8
D62	The Proponent, where liable, must rectify any property damage caused directly or indirectly (for example from vibration or from groundwater change) by the work at no cost to the owner. Alternatively, the Proponent may pay compensation for the property damage as agreed with the property owner. Rectification or compensation must be undertaken within 12 months of completion of the work identified in Condition D60 of this schedule unless another timeframe is agreed with the owner of the affected surface or sub-surface structure or recommended by the IPIAP	Noted
D63	Appropriate equipment to monitor areas in proximity of construction sites and the tunnel route during construction must be installed with particular reference to at risk buildings, structures and utilities identified in the condition surveys required by Condition D60 of this schedule and / or geotechnical analysis as required. If monitoring during construction indicate exceedance of the vibration criteria	Refer to Noise & Vibration Management Sub Plan

Condition No.	Relevant requirement	Reference
	identified in the DNVIS prepared under Condition D43 of this schedule, then all construction affecting settlement must cease immediately and must not resume until fully rectified or a revised method of construction is established that will ensure protection of affected buildings.	
D64	An Independent Property Impact Assessment Panel (IPIAP) must be established. The Planning Secretary must be informed of the members of the IPIAP and the IPIAP must comprise geotechnical and engineering experts independent of the design and construction team. The IPIAP will be responsible for independently verifying condition surveys undertaken under Conditions D60 and D61 of this schedule, the resolution of property damage disputes and the establishment of ongoing settlement monitoring requirements.	CEMP Section 6.8
D65	Either the affected property owner or the Proponent may refer unresolved disputes arising from potential and/or actual property impacts to the IPIAP for resolution. All costs incurred in the establishing and implementing of the panel must be borne by the Proponent regardless of which party makes a referral to the IPIAP. The findings and recommendations of the IPIAP are final and binding on the Proponent.	CEMP Section 6.8
D69	Potential impacts on the operation of festivals or events at Parramatta, Sydney Olympic Park or Five Dock must be limited as reasonably practicable.	Refer to CTMP
D70	Small Business Owners Engagement Plan(s) must be implemented in accordance with the Overarching Community Communication Strategy to minimise impact on small businesses adjacent to major construction sites during construction of Stage 1 of the CSSI. These plans must be prepared and submitted to the Planning Secretary for information before construction at the relevant construction site.	CEMP Section 7 Plan to prepared by the Principal
D77	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared before the commencement of construction and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	CEMP Section 6.4 CEMP Appendix C
D78	The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.	CEMP Appendix C
D80	Access to all utilities and properties must be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier.	CEMP Section 3.3
D81	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access must be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier.	CEMP Section 6.8
D85	Construction Traffic Management Plans (CTMPs) must be prepared in accordance with the Construction Traffic Management Framework. A copy of the CTMPs must be submitted to the Planning Secretary for information before the commencement of any construction in the area identified and managed within the relevant CTMP.	Refer to CTMP
D86	Local roads proposed to be used by Heavy Vehicles to directly access construction sites that are not identified in the documents listed in Condition A1 of this schedule must be approved by the Planning Secretary and be included in the CTMPs.	Refer to HVLR and CTMP
D88	Before any local road is used by a Heavy Vehicle for the purposes of construction of Stage 1 of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the Relevant Road Authority(s) within three	Refer to HVLR and CTMP

Condition No.	Relevant requirement	Reference
	(3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of Stage 1 of the CSSI.	
D89	If damage to roads occurs as a result of the construction of Stage 1 of the CSSI, the Proponent must either (at the Relevant Road Authority's discretion): (a) compensate the Relevant Road Authority for the damage so caused; or (b) rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report.	CEMP Section 8.4
D111	Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	CEMP Section 18 Refer to WMSP
D113	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	CEMP Section 18 Refer to WMSP
D114	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	CEMP Section 18 Refer to WMSP
D116	Before undertaking any works and during maintenance or construction activities, erosion and sediment controls must be implemented and maintained to prevent water pollution consistent with LandCom's Managing Urban Stormwater series (The Blue Book).	CEMP Section 16 and Appendix C and D Refer to Site Establishment Management Plan

Table 2 Sydney Metro West CEMF – CEMP Requirements

Section No.	Relevant requirement	Where addressed
3.4a	Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their scope of works. The CEMP shall comprise of a main CEMP document, issue specific sub plans, activity specific procedures and site based control maps. The CEMP shall illustrate the relationship between other plans required by the contract, in particular those that relate to design management.	This Plan CEMP Section 6
3.4b	Depending on the scope and scale of the works, Sydney Metro may decide to streamline the CEMP and sub-plan requirements. For example, depending on the risk associated with particular environmental issues it may be appropriate to remove the need for a sub plan, or replace with a procedure as part of the CEMP.	Sub Plans excluded from Delta's scope include: • Soil and Water

Section No.	Relevant requirement	Where addressed
		• Spoil • Groundwater • Visual Amenity
3.4c	The CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework.	CEMP Section 2
3.4d	As a minimum the CEMP will:	This Plan
	i. Include a contract specific environmental policy;	Appendix A
	ii. Include a description of activities to be undertaken during construction;	CEMP Section 3
	iii. For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed;	CEMP Table 1 and Table 2
	iv. For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	CEMP Table 2.6
	v. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure;	CEMP Section 6.12
	vi. Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP;	CEMP Section 6.12
	vii. Identify communication requirements, including liaison with stakeholders and the community;	CEMP Sections 5 and 7
	viii. Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.10 (b);	CEMP Section 6.10
	ix. Management strategies for environmental compliance and review of the performance of environmental controls;	CEMP Sections 6.13, 6.14 and 6.15
	x. Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	CEMP Sections 6.13, 6.14 and 6.15
	xi. Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;	CEMP Section 6.13.6
	xii. Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	CEMP Sections 6.11 and 6.14
	xiii. Include procedures for the control of environmental records.	CEMP Section 6.15

Section No.	Relevant requirement	Where addressed
3.4e	The CEMP and associated sub-plans will be reviewed by Sydney Metro and/or an independent environmental representative (see Section 3.12) prior to any construction works commencing. Depending on the Conditions of Approval, the CEMP and certain sub-plans may also require the approval of the Department of Planning, Industry and Environment (DPIE).	CEMP Section 5
3.4f	Where a corresponding systems document exists within the Sydney Metro Integrated Management System, the Principal Contractor's procedures will be required to be consistent with any requirements in those documents.	Noted, where applicable the Principal's procedures have been either adopted in full or incorporated into Delta's project specific procedures.

2.6 Desired Performance Objectives

In order to assess environmental performance during the demolition works, Delta has established a number of environmental objectives and targets. Environmental objectives for the Project have been incorporated into the relevant environmental management sub plans.

Table 3 below provides a summary of the environmental objectives and targets that are relevant to the Delta's scope.

Table 3 Environmental Objectives & Targets by Management Area

Management Area, Objective and Target	Where addressed
Construction traffic and transport • Construction traffic and transport impacts on special events are minimised. • Safe routes for pedestrians and cyclists are provided around construction sites. • Safe access to properties is maintained. • Road occupancy is minimised, particularly in the Parramatta. • Changes to the travel paths of road users, including bus routes, are minimised. • Affected emergency services and public transport operators are provided early communication on changes in traffic conditions. • Loss of on-street parking and loading zones is minimised. • Heavy vehicle routes used are consistent with the HVLR Report. • The use of local roads by heavy vehicles is minimised. • Safe access and egress is provided to and from construction sites.	• CEMP Section 11 • Construction Traffic Management Plans and Traffic Control Plans • Heavy Vehicle Local Road Report (HVLR) • Construction Parking and Access Strategy (CPASS)
Construction noise and vibration • Construction noise and vibration impacts on local communities are minimised by controlling noise and vibration at the source, on the source to receiver path and at the receiver • Structural damage to buildings and heritage items from construction vibration is avoided • Local communities are engaged during construction, including on noise mitigation in areas predicted to be affected by high noise impacts • No noise complaints for works outside standard hours. • Compliance with MCoA. • Timely close out of AA and ER requirements.	• CEMP Section 12 • Construction Noise and Vibration Management Sub Plan.
Business impacts • Potential impacts to businesses are minimised • Affected businesses are communicated with in a clear and timely manner to reduce disruption and address concerns • Access to businesses for employees and customers is maintained • Ensure that business stakeholder enquiries and complaints regarding the project are managed and resolved effectively. • Consult with all business directly affected by changes to access arrangements regarding specific requirements at least two weeks prior to those changes coming into effect • Timely close out of ER requirements. • Property and business impacts discussed in toolbox talks and pre-starts.	• CEMP Section 7 • Sydney Metro Document: Overarching Community Communications Strategy (OCCS)

Management Area, Objective and Target	Where addressed
Heritage • Minimise impacts on items or places of heritage value. • Accidental impacts to heritage items are avoided. • Unexpected finds procedure followed. • Maximise worker's awareness of Aboriginal and Non-Aboriginal heritage by discussing in toolbox talks and pre-starts.	• CEMP Section 13 • Heritage Management Sub Plan.
Soil and water quality • Minimise pollution of surface water through appropriate erosion and sediment control. • Minimise leaks and spills from construction activities. • Maintain existing water quality of surrounding surface watercourses. • Source construction water from non-potable sources, where feasible and reasonable. • Discussed in toolbox talks and pre-starts.	• CEMP Section 16 and Appendix C
Biodiversity • Minimise impacts on flora and fauna • Retain and enhance existing flora and fauna habitat wherever possible. • Appropriately manage the spread of weeds and plant pathogens. • Unexpected fauna/flora finds procedure followed. • Discussed in toolbox talks and pre-starts.	• CEMP Section 14 • Flora and Fauna Management Sub Plan.
Air quality • Minimise air quality impacts during construction • Discussed in toolbox talks and pre-starts.	• Section 17 • Air Quality Management Sub Plan.
Spoil, Waste Management and Resource Use • Minimise waste throughout the project life-cycle. • Recycling targets achieved including at least; o 95% of inert and non- hazardous construction waste by weight, excluding spoil; and o 60% of office waste is recycled or alternatively beneficially reused. • 100% of useable spoil is reused in accordance with the spoil reuse hierarchy (where the spoil meets lawful requirements) • Wastes tracked in accordance with WMSP. • Discussed in toolbox talks and pre-starts.	• Section 18 • Spoil Management Sub Plan, Waste Management Sub Plan, and Sustainability Management Sub Plan.

Management Area, Objective and Target	Where addressed
Sustainability • The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources. • Conservation of natural resources is maximised. • Sustainability targets achieved. • Materials, energy, greenhouse gas emissions, water, and waste tracked in accordance with Sustainability Management Sub Plan. • Compliance with MCoA. • Discussed in toolbox talks and pre-starts.	• Sustainability Management Sub Plan.
Climate change and greenhouse gas emissions • 25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction are offset • Electricity offset targets achieved.	• Sustainability Management Sub Plan.

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.

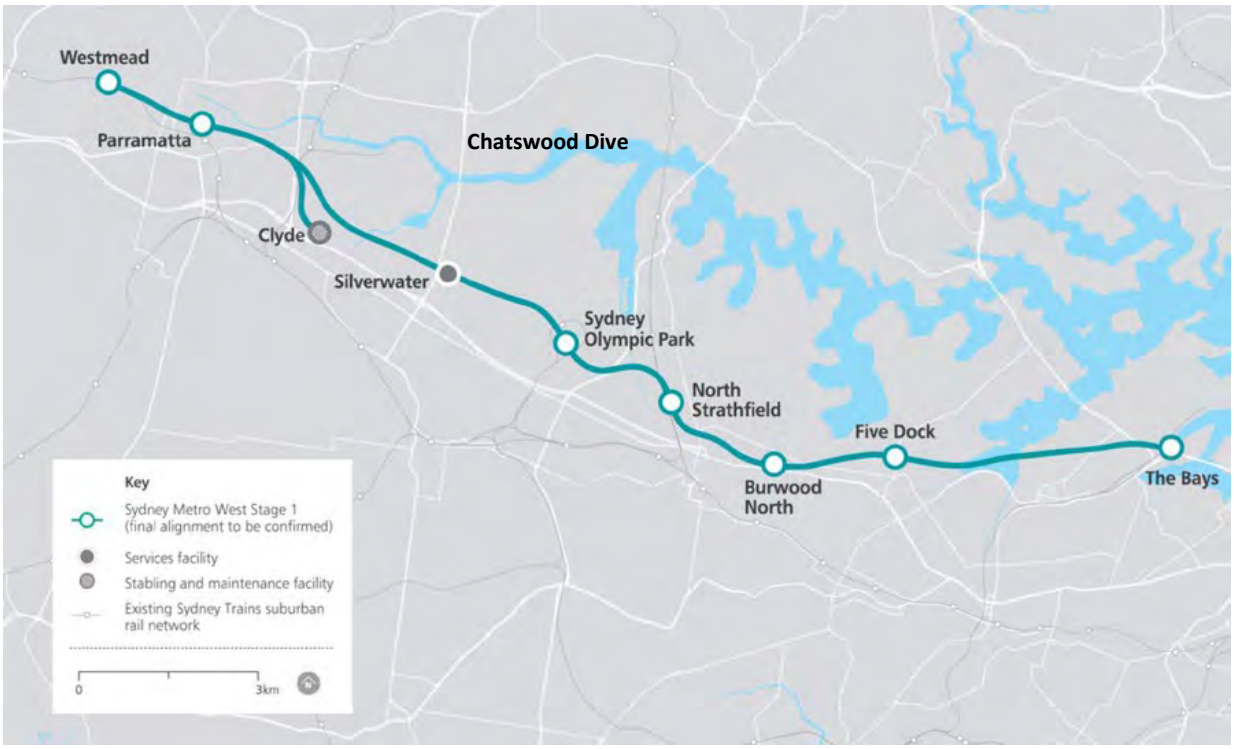


Figure 1 Sydney Metro West project

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 incudes:

- 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 8,670m^2) 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.

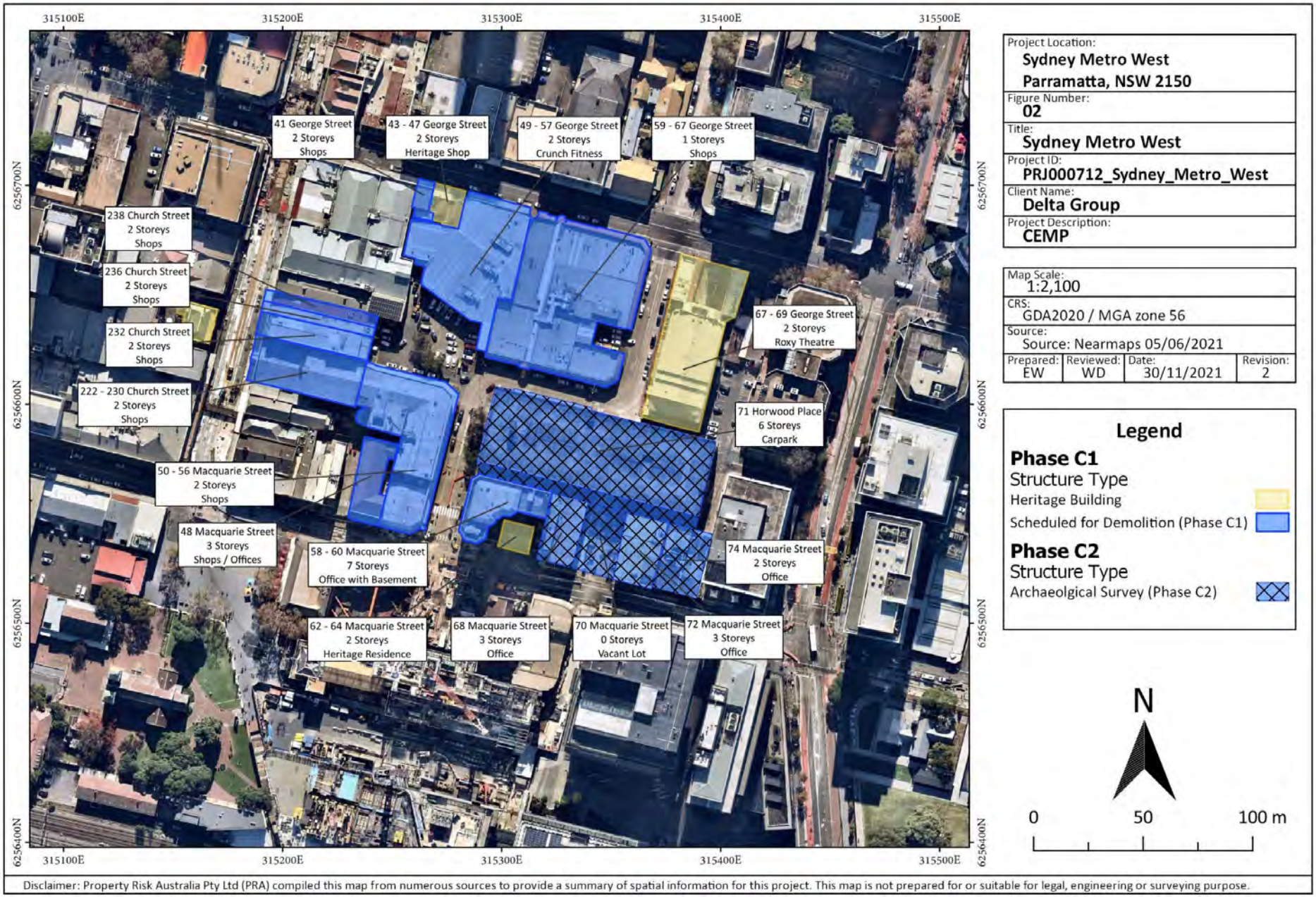
3.8 Archaeological test excavation and related investigations (Phase C2)

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 this 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.



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.

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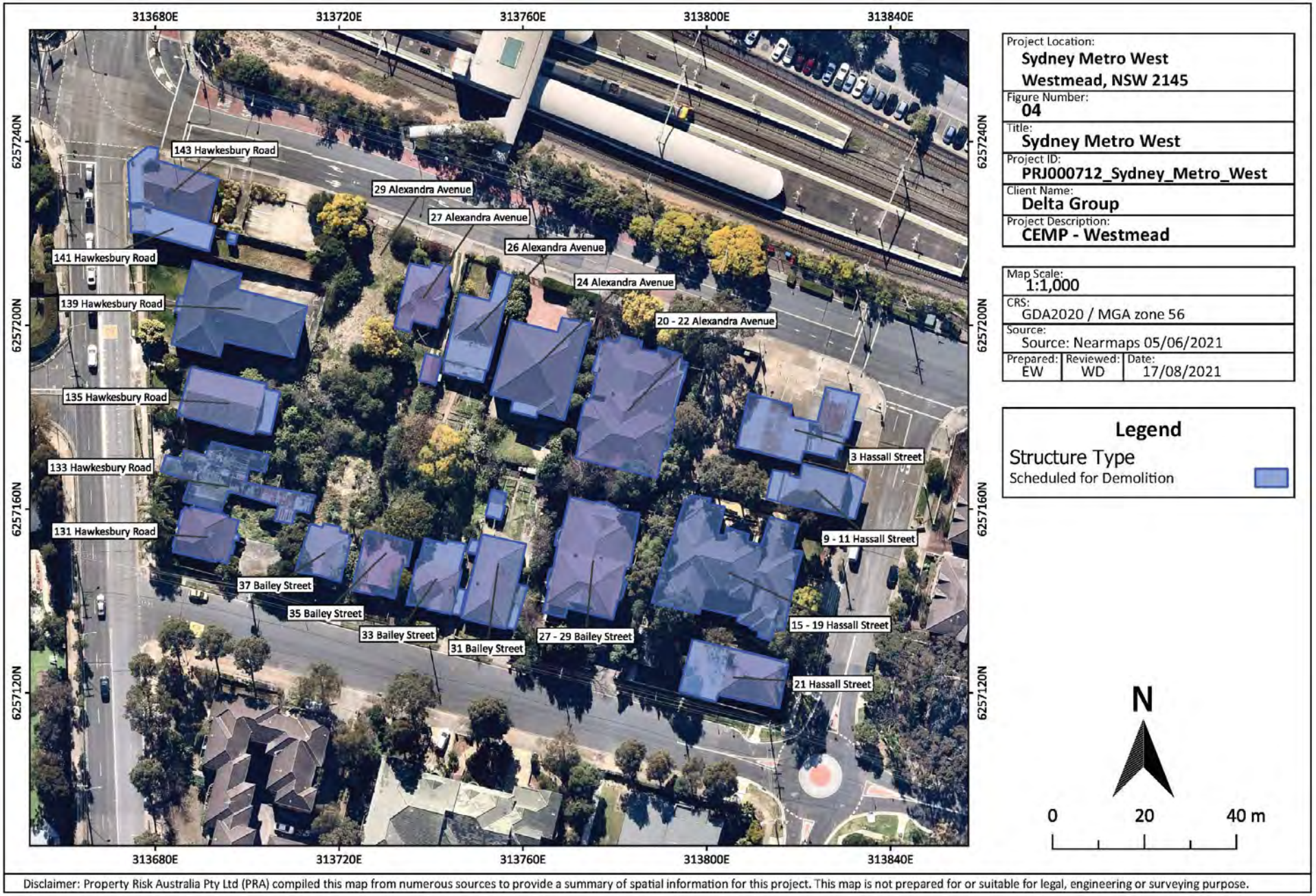

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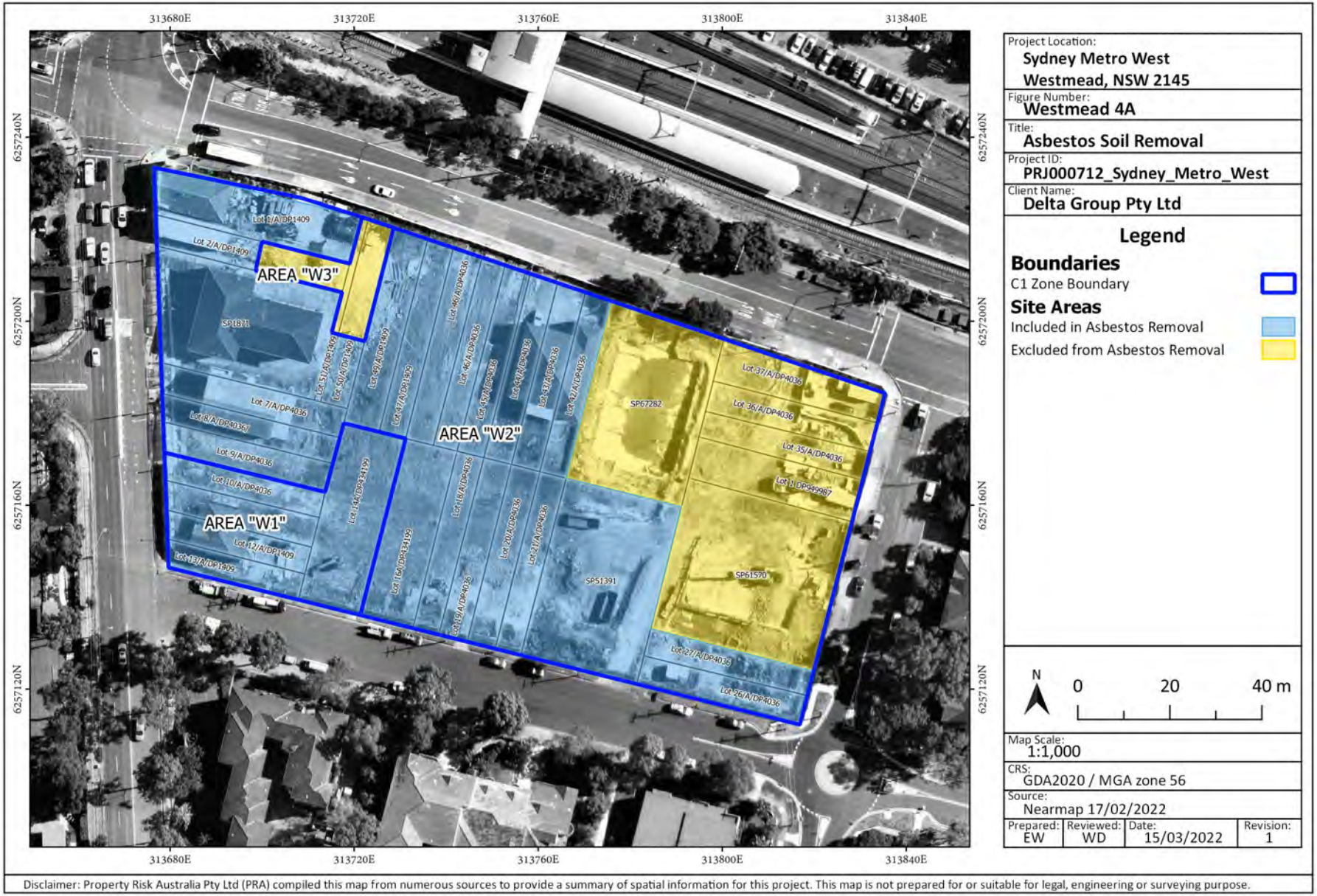

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3.9 Project Schedule

Project start dates and durations shown below are indicative and subject to change.

2021						2022					
September	October	November	December	January	February	March	April	May	June	July	
	Phase C1 - Portion 1 A (Parramatta Enabling Works)										
	Phase C1 - Portion 1 B (Parramatta Enabling Works)										
						Phase C2 - Parramatta Archaeological Study					
	Phase C1 - Portion 2 (Clyde Enabling Works 1)										
				Phase C1 - Portion 3 (Clyde Enabling Works 2)							
				Phase C2 – Clyde Archaeological Study							
	Phase C1 - Portion 4 (Clyde Enabling Works 3)										
	Phase C1 - Westmead										

4 LEGISLATIVE AND OTHER REQUIREMENTS

4.1 Environmental Approvals

Sydney Metro West is classified as State Significant Infrastructure (SSI) and was approved by the Department of Planning and Environment (DPE) on 11 March 2021. The approval is listed as:

- SSI 10038 Sydney Metro West

The Conditions of Approval that are relevant to the Project are provided in **Table 1** above.

4.2 Key Legislative Requirements

The key NSW environmental legislative requirements and their application to the Project are identified in **Table 4** below. Delta regularly reviews its legislative requirements in accordance with its Integrated Management System (IMS).

Table 4 Commonwealth and NSW Legislative Requirements

Legislation and Administering Authority	Aims of the Legislation	Application to the Project
Commonwealth Requirements		
Environment Protection and Biodiversity Conservation Act 1999 Department of Environment and Energy	Approval of the Commonwealth Minister is required for actions that may have a significant impact on Matters of National Environmental Significance (NES).	As the proposed works have been determined to have no impact on matters of NES, approval from the Commonwealth Minister is not required.
National Greenhouse and Energy Reporting Act 2007 Department of Environment and Energy	To establish a framework for reporting of greenhouse gas emissions, abatement actions, energy consumption and production data.	Delta will report on greenhouse gas and energy usage data as required by the Act.
NSW Requirements		
Contaminated Land Management Act 1997 NSW Environment Protection Authority (NSW EPA)	Provides a process for the investigation and remediation of contamination where it presents a significant risk of harm to human health or the environment.	Delta will comply with the requirements of the Act where contaminated land is identified.
Dangerous Goods (Road and Rail Transport) Act 2008 NSW EPA / SafeWork NSW	To ensure that dangerous goods are stored and transported in a safe manner.	Delta will obtain a licence where storage of dangerous goods would exceed licensable quantities.
Environmental Planning and Assessment Act 1979 DPIE	Provides a framework for effective environmental impact assessment and management of development to promote social and economic welfare and a better environment.	Delta will comply with the relevant conditions of approval for the Project.
Heritage Act 1977 NSW Office of Environment and Heritage (OEH)	To conserve the State's heritage and provide for the identification and registration of items of State heritage significance.	Delta will comply with the requirements of the Act where items of heritage significance are identified. The Project does not require approvals under Part 4 or permits under section 139.

Legislation and Administering Authority	Aims of the Legislation	Application to the Project
Noxious Weeds Act 1993 Department of Primary Industries	To prevent the introduction of new weeds and restrict the spread of existing weeds.	Delta will control weeds on land under its management.
Protection of the Environment Operations Act 1997 NSW EPA	To prevent environmental pollution.	An Environmental Protection Licence is not required for Delta's works.
Roads Act 1993 Roads and Maritime Service	To regulate the carrying out of various activities on public roads.	Delta will obtain consent under Section 138 where required for carrying out work in, on or over a public road, or digging up or disturbance of the surface of the road.
Waste Avoidance and Resource Recovery Act 2001 NSW EPA	To reduce the generation of waste and increase reuse and recycling options.	Delta will implement strategies to reduce waste volumes and report on waste generated.
Water Management Act 2000 NSW Office of Water	To protect, enhance and restore water sources, their associated ecosystems, ecological processes and biological diversity and their water quality.	The Project is exempt from obtaining water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than an aquifer interference approval) under Section 91.

4.3 Environment Protection Licence Requirements

The Project is not a scheduled activity as defined in Schedule 1 of the *Protection of the Environmental Operation Act 1997* and as such Delta does not require an Environment Protection Licence for the works.

5 Review and Approval

5.1 Internal consultation

The development of the CEMP, Sub-plans, Site Establishment Management Plan (SEMP), Procedures and Monitoring Programs involved detailed review of the documentation by the Delta Environment and Sustainability Manager, Project Manager and Project Engineer(s), with final sign-off by the Project Director. Following Delta's satisfaction of the documents, a review process was completed with the Principal, Environmental Representative (ER), Acoustic Advisor (AA) and relevant external stakeholders (refer to Section 5.2 below) prior to submission of the document to DPE.

5.2 External Consultation

Consultation in development of the CEMP and relevant Sub Plans will include relevant State Government Departments and Local Government Agencies including:

- Noise and vibration: Relevant Council(s);
- Flora and Fauna: DPE EES, DPI Fisheries, and Relevant Council(s);
- Soil and Water: DPE EES, Relevant Council(s), and Sydney Water (if Sydney Water's assets are affected);
- Heritage: Heritage NSW, and relevant Council(s); and
- Traffic: Relevant Road Authorities, Roads and Maritime Services, and Sydney Coordination Office.

Evidence of consultation associated with the CEMP is found in **Appendix K**. Evidence of consultation associated with the Sub Plans has been collated and can be found appended to each document. The evidence has been prepared in accordance with MCoA A6.

Table 5 Summary of consultation and approval requirements in relation to Delta's scope of work (as defined in the Phasing Report)

Document	MCoA	Stakeholder							
		Local Council (s)	DPI Fisheries	DPE EES	NSW EPA	Heritage NSW	ER	AA	DPE
SEMP	A18, A19, A30(e)	**C**					**E**		
CEMP	C2, C4						**E**		
NVMSP	C5(a)	**C**					**E**	**E**	**A**
FFMSP	C5(b)	**C**	**C**	**C**			**E**		
HMSP	C5(d)	**C**				**C**	**E**		**A**
SpMSP	C5(e)	**C**					**E**		
N&V Mon. Prog.	C14(a)	**C**			**C**		**E**	**E**	**A**
OOHWP	D38				**C**		**E**	**E**	**A**

(C – For consultation, E – For endorsement, A – For approval)

5.3 Approval

In accordance with MCoA C4, and with the exception of any CEMP Sub Plans expressly nominated by the Planning Secretary to be endorsed by the ER (under MCoA C3), the CEMP Sub-plans must be endorsed by the Environmental Representative (ER) and then submitted to the Secretary for approval no later than one month prior to the commencement of the construction activities to which they apply.

In accordance with MCoA C3 the CEMP Sub Plans not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all relevant undertakings made in the documents listed in MCoA A1.

Construction of the relevant phase must not commence until the CEMP and all CEMP Sub Plans have been approved by the Secretary or endorsed by the ER. The CEMP, Sub Plans and Monitoring Programs, as approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction.

As per the Phasing Report, the approval of this document will be under MCoA C3 (i.e., does not require the Planning Secretary's approval) and as such ER endorsement has been obtained prior to implementation of this sub-plan (refer to **Appendix K**).

5.4 Continual Improvement

The Delta Environment and Sustainability Manager will review the CEMP and its operation and implementation approximately annually following the commencement of construction, or within two months of an incident triggering notification under the POEO Act. Reviews will also be undertaken following a substantial change in scope of works or repeated environmental non-conformances (i.e. the same category of non-conformance occurring more than three times per quarter). Between the scheduled reviews, a register of issues will be maintained to ensure that any actions raised by internal and external personnel is recorded and addressed.

The purpose of the reviews is to examine the effectiveness and proper implementation of the CEMP to ensure that the system is meeting the requirements of the standards, policies and objectives and, if not, to amend the CEMP to rectify shortcomings.

The outcomes of the reviews may result in the amendment of this CEMP or related documents, revision to the Delta EMS, risk assessment review or re-evaluation of the Project's objectives and targets.

Should the document review process identify any issues or items within the documents that are either redundant, inappropriate or ineffective, it is the responsibility of the Delta Environment and Sustainability Manager or delegate to prepare the revised documents, as described in Section 6.11.

This CEMP, CEMP Sub-plans and Monitoring Programs will be reviewed and updated as required:

- To take into account changes to the environment or generally accepted environmental management practices, new risks to the environment, any hazardous substances, contamination or changes in law;
- In response to internal or external audits or management reviews;
- Following reportable environmental incidents;
- Upon identification of new risks, including risks identified during risk register updates;
- When non-compliances are identified;
- Following environmental audits that identify matters that require attention;
- In response to Project change (including modifications);
- Within three months of any of the above occurrences;
- As part of a continuous improvement process; or
- Where requested or required by the DPE or any other Authority.

Minor and administrative changes to CEMP, Sub-plans or Monitoring Programs can be endorsed by the ER. Major changes will be provided to OPIE for approval following ER review and endorsement.

Changes will also be communicated through toolbox talks to existing onsite personnel and incorporated into environmental induction materials where relevant.

6 ENVIRONMENTAL MANAGEMENT REQUIREMENTS

6.1 Environmental Management System

6.1.1 Integrated Management System

Delta operates a corporate Integrated Management System certified as meeting the requirements of ISO 14001:2004, ISO 9001: 2008, and AS/NZS 45001: 2001. The model in AS/NZS 4581 Management System Integration and the guidelines in Standards Australia Handbook Guidance on Integrating the Requirements of Quality, Environment and Health and Safety Management Systems form the basis for the Delta IMS.

Delta's Environment Policy and a list of Delta's procedures and standard operating forms under its IMS is provided in **Appendix A**. Evidence of the currency of Delta's EMS is provided in **Appendix B**.

6.1.2 Project-specific Risk Management

Delta has prepared a Risk Management Plan to identify hazards throughout the Project, assess those hazards against the risk criteria, calculate risk ratings, and assign meaningful control measures to eliminate risks or reduce their ratings to an acceptable level. The Project Risk Management Plan may be provided to NSW Government Agencies on request.

Delta has adopted the Sydney Metro Risk Criteria and Matrix provided in the Sydney Metro Risk Management Standard (SM-17-00000182) (refer to **Appendix I**) a means of assigning a risk rating to Delta's activities according to consequence and likelihood ratings. The defined risk management response provides a basis within which to further consider, assess, and validate the So Far As Is Reasonably Practical (SFAIRP) principle.

The Sydney Metro Risk Matrix provides a thorough risk assessment process where Delta's activities are linked via the Delta IMS SEF 43D HIRAC-Risk Assessment – Demolition and the Sydney Metro Risk Matrix to create a Risk Register for each site and, in turn, provide the basis by which to prepare requisite Work Method Statements.

The environmental risk assessment matrix associated with Delta's scope of works have been provided in **Appendix D**.

6.2 Construction Environmental Management Plan

This CEMP outlines the environmental management practices and procedures that are to be followed during the Project. It provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled. The implementation of this CEMP is supported by the Delta IMS.

6.3 Construction Environmental Management Sub Plans

A number of Sub Plans have been prepared to support the CEMP as required by MCoA C5. Each Management Sub Plan has been prepared to demonstrate how:

- The environmental performance outcomes identified in the EIS as amended by the PIR as modified by these conditions will be achieved;
- The mitigation measures identified in the EIS as revised by the RtS as modified by these conditions will be implemented;
- The relevant terms of the approval will be complied with; and
- Issues requiring management during construction, as identified through ongoing environmental risk analysis, will be managed.

Delta's CEMP includes the following issue-specific environmental sub plans:

- Noise and Vibration Management Sub Plan;
- Heritage Management Sub Plan;

- Flora and Fauna Management Sub Plan;
- Spoil Management Sub Plan;
- Sustainability Management Sub Plan;
- Waste Management Sub Plan; and
- Air Quality Management Sub Plan.

The requirement to write management plans for Groundwater, and Soil and Water is specifically excluded from Delta's scope through the Phasing Report. Delta will comply with the requirements of The Principal's environmental management plans in so far as they are relevant to Delta's aspects and impacts.

The Construction Environmental Management Plan will be updated where required to reflect updates to the various sub-plans.

Delta has prepared a site-specific Construction Traffic Management Plan for each of its sites at Parramatta, Clyde and Westmead, with relevant Traffic Control Plans, and has separated these plans from the CEMP to ensure all documents remain functional at the worksite level.

6.4 Environmental Procedures

The CEMP includes the following activity specific environmental procedures that are included within **Appendix C**:

- Erosion and sediment control: development and implementation of erosion and sediment control plans (Ersed Plans) is described within Section 29 of the DEMP, which is a component of the Delta IMS. Section 29 of the DEMP is provided in **Appendix C**. Locations of ersed controls will be included within each site Environmental Control Map;
- Unexpected finds of asbestos or contamination will be managed in accordance with the Unexpected Contaminated Land and Asbestos Finds Procedure provided in **Appendix C**. The procedure has been prepared in accordance with MCoA D77.
- The maintenance of outward facing elements of site hoarding or noise barriers, including the removal of graffiti and weeds, and checking the health of retained vegetation around site boundaries, and direction of any site lighting; and

Environmental aspects and impacts of Delta's works will be identified and assessed for each site using Delta's IMS forms:

- SEF 006 Environmental Aspects and Impacts Assessment; and
- SEF 068 Environmental Aspects and Impacts Assessment Action Register.

Each Project Manager will ensure that environmental aspects and impacts identified in the CEMP and Sub Plans are assessed for relevance at their specific site, and controlled, monitored, and documented in accordance with the CEMP and Sub Plans. Where an environmental aspect of a particular task is identified, the Project Manager will ensure that the SWMS is updated to include that environmental aspect and the relevant REMMs.

6.5 Environmental Control Maps

Delta will prepare and implement site based progressive Environmental Control Maps (ECMs). ECMs are progressive documents that depict the current representation of each site. They will indicate which environmental procedure, environmental approval, or licence is applicable at each site, illustrate the site showing significant structures, work areas and boundaries, and show the environmental control measures and environmentally sensitive receivers relevant at each site.

The current baseline Environmental Control Maps are provided in **Appendix E.** Each will be updated progressively as site information and work methods for each become available, including machinery and vehicle parking, fuel and chemical stores, and restrictions on traffic movement. The ECMs will be updated prior to commencing works.

6.6 Additional Environmental Assessments

Where a requirement for additional environmental assessments has been identified, the assessment will be carried out prior to commencement of works. Delta will prepare Detailed Noise and Vibration Impact Statements (DNVIS) for noise intensive construction sites or activities to ensure the adequacy of adopted noise and vibration mitigation measures. DNVISs will be prepared by Delta where works are proposed to be undertaken outside of standard construction hours.

The principal issues addressed within each DNVIS include:

- Identification of noise sensitive receivers near to each site;
- Prediction of the level of noise and vibration impact on these sensitive receivers from construction activities including assessment of predicted compliance with Project-imposed Noise and Vibration Management Levels;
- Details of the plant and equipment to be used on site; and
- Details of sound mitigation measures to be employed to reduce noise impacts on adjacent noise sensitive receivers.

DNVIS are provided as appendices to the Construction Noise and Vibration Management Plan (CNVMP).

6.7 Consistency Assessments

Proposed changes to the Project will be subject to review and assessment to ensure the proposed change is consistent with existing planning approvals. This consistency review and assessment will be carried out in accordance with Sydney Metro Planning Approval Consistency Assessment Procedure (SM-17-00000103).

Where a Consistency Assessment has been prepared in relation to a proposed change to the Project, in accordance with MCoA A31 a copy of the assessment carried out will be provided to the ER before the commencement of the subject work.

6.8 Condition Surveys

Delta will offer pre-construction Condition Surveys as per the requirements of the MCoA D60. Condition surveys will be undertaken by a suitably qualified and experienced person. Condition assessments to be undertaken for the Parramatta, Clyde and Westmead sites are illustrated in **Figures 5, 6** and **7** respectively. In addition to the buildings identified, surveys will also be undertaken of selected roads (refer to Section 8.4), footpaths, stormwater and sewer assets.

The results of the pre-construction surveys will be documented in a Pre-construction Condition Survey Report for each item surveyed and provided to the relevant owner no later than one (1) month before the commencement of the work that could impact on the subject surface / subsurface structure.

For heritage buildings and structures the surveys would consider the heritage values of the structure in consultation with a heritage specialist.

On completion of the works, Delta will then offer post-construction Condition Surveys in accordance with MCoA D61 of all items where pre-construction condition surveys were undertaken. The results of the post-construction surveys will be documented in a Post-construction Condition Survey Report and carried out within three months of the completion of the works and provided to the relevant owner no later than three (3) months following completion of the work that could impact on the subject surface / subsurface structure.

The Principal will establish an Independent Property Impact Assessment Panel (IPIAP). The IPIAP will comprise geotechnical and engineering experts independent of the design and construction team. The IPIAP will be

responsible for independently verifying condition surveys undertaken in accordance with MCoA D60 and D61, the resolution of property damage disputes and the establishment of ongoing settlement monitoring requirements. Delta will supply relevant condition survey documentation to enable the IPIAP to implement its role.

In the event of unresolved disputes arising from potential and/or actual property impacts, either the affected property owner or the Principal may refer to the IPIAP for resolution. All costs incurred in the establishing and implementing of the panel must be borne by the Principal regardless of which party makes a referral to the IPIAP. The findings and recommendations of the IPIAP are final and binding on the Principal.

Figure 5 Required Condition Surveys at Parramatta

Figure 6 Required Condition Surveys at Clyde

Figure 7 Required Condition Surveys at Westmead

6.9 Register of Hold Points

The following internal environmental Hold Points, provided in **Table 6,** will be implemented by Delta throughout the Project.

Table 6 Environmental Hold Points

Hold Point	Release of Hold Point	By Whom	Where addressed
Prior to Vegetation Clearing / Ground Disturbance / Erosion and Sediment Controls	Pre-clearing inspection ITP (N1409-ITP002-PreClearance)	Project Ecologist Delta Environmental and Sustainability Manager or delegate	Section 14 and FFMSP
Discharge of water	Water tested to verify compliance and approval to discharge (Sydney Metro - Water Discharge or Reuse Approval Form)	Delta Environmental and Sustainability Manager or delegate	Section 16
Use of local roads by heavy vehicles	Road Dilapidation Report Identified on EIS approved routes or HVLR	Appropriate Professional nominated by the Principal	Overarching CTMP
Out of hours works	Noise Assessment	Project acoustics consultant Delta Environmental and Sustainability Manager or delegate	NVMSP
Condition Surveys	Pre-construction building condition surveys	Suitably qualified and experienced person.	Section 6.8

Hold Point	Release of Hold Point	By Whom	Where addressed
		Delta Project Manager	
Up to date ECMs prior to commencing	Updated ECMs	Delta Environmental and Sustainability Manager or delegate	Section 6.5

6.10 Training, Awareness and Competence

6.10.1 Training Needs Analysis

Delta's training, awareness, and competencies are managed under the Delta IMS and in accordance with the following Procedures:

- Procedure 03 Competency Induction and Training;
- SEF 055 Training Record;
- SEF 056 Training Request; and
- QF 032 Training Feedback.

IMS Procedure 03 Competency, Induction and Training requires that all persons (permanent and temporary employees and contractors) who undertake work on a Delta Group site must as a minimum hold a current:

- Generic Construction Industry OHS Induction;
- Delta Group induction;
- Client induction (as required);
- SWMS, toolbox, and SOP inductions;
- Site Management Plan/s induction; and
- Site specific inductions.

Training analysis and skills requirements will be identified through reviewing monitoring outputs against the EMP as well as consultation between division and operational personnel. A Training Needs Analysis will be conducted by managers and supervisors responsible for personnel under their control. The TNA will identify the need between the standard performance being achieved and the standard of performance required. The Delta national ticket register (training matrix) will be reviewed to identify gaps in employee skills and appropriate training that will improve those skills. Details are provided in the Delta Training Management Plan.

6.10.2 Environmental Management System Training

Delta ensures that all employees undergo training in our Environmental Management System as part of their initial employment induction and their ongoing training. This training is both general environmental management training and training related to achievement of environmental management standards in the particular tasks carried out by each employee. Delta confirms that all personnel are trained and competent to perform their work in accordance with the requirements of the contract.

Delta Group ensures all personnel able to influence environmental performance have the necessary education, skills, experience and knowledge. This includes training all personnel, ensuring they are kept informed about changes, risks/opportunities, their roles and required procedures, and generally ensuring they are able to meet environmental management requirements.

Delta maintains an electronic data base for training and competency which is updated as training is completed. The electronic ticket register system is available on the Delta Intranet. Subcontractors must provide Delta with evidence of training and competency for their employees prior to their staff being permitted on Delta's work sites.

6.10.3 Management Plan Training

Management Plan training will be carried out prior to personnel commencing work on the Project. Management Plan training will include the provisions of the Delta CEMP and Sub Plans.

Refresher training will be carried out after six months following commencement of the Project, and as required when site inspections, audits, task observations and the like uncover work practices not in accordance with the Plan.

Management plan training/updates will also be carried out when changes to CEMP and or sub plans occur this will be carried out through site environmental daily pre -start briefings.

6.10.4 Site Induction Training

Induction training is oriented in assisting personnel to be aware of their environmental and compliance obligations to ensure that an environmental product or service is delivered and that an appropriate communication and reporting system is maintained to allow verification of all facets of work produced. Records of induction and training sessions are recorded and can be reviewed by the client's Environmental Manager on request.

All site personnel and sub-contractors will undertake site-specific induction training and must be deemed competent prior to commencing works on the site. Personnel must be competent in the tasks they carry out and the use of plant and equipment to carry out those tasks. Delta will ensure its personnel have the specific training for each task by referring to its IMS training register and the task specific Verifications of Competency required.

Before commencing work on the site, all contractors and temporary employees will supply documentary evidence of competencies required to carry out their assigned tasks. Competencies must be held in the appropriate State and must be validated by Delta, authorised, and a copy placed on file. Validation must provide proof that demonstrates the person has been trained and assessed as competent against the appropriate standards.

It is the responsibility of the Project Manager to ensure that all training documentation required is complete and submitted to the Work health and Safety Manager for review prior to any personnel undertaking work or operating equipment on a Delta site. Following successful review of task specific competency and training documents the Work health and Safety Manager will provide approval to the Site Manager to authorise that person to operate or work on the site.

Competency must be proven prior to commencing works on the site. No induction equals no entry to the work site and no work.

Delta's Site Induction training will include:

- The purpose of the training, its objectives, and key issues to be covered;
- Delta's environmental policy and key environmental performance indicators;
- Due diligence, duty of care, and responsibilities;
- Environmental and compliance obligations under the terms of the approval;
- Site specific issues and controls;
- Reporting of environmental hazards and incidents; and
- Communication protocols.

6.10.5 Pre-starts

Pre- Start briefings will be carried out for all work and at all sites undertaken on the Sydney Metro Project. Daily pre-starts will be held prior to the commencement of work on each shift and during the course of the workday where the work group is transferred to a new task or location. Pre-starts allow site personnel to keep track of the rapidly changing nature of on-site works.

Pre-starts will include the opportunity for personnel to provide input, and will be led by the Site Manager, or other designated person that has successfully completed the Sydney Metro accredited leadership and management Workforce Skills Development.

6.10.6 Toolbox Talks

Delta's Site Managers for each Portion will carry out weekly toolbox talks addressing safety, health, environmental, and quality issues on site, and to provide a Project-wide or Portion update. A record of toolbox talks will be retained on-site using form SEF 054.

Environmental & Sustainability Manager will participate in the weekly toolbox talks as required, to emphasise particular aspects of environmental management or to provide updates when there are changes to legislation, work methods, or scope.

6.10.7 Topic Specific Environmental Training

Topic specific environmental training, such as erosion and sediment control training, will be undertaken for relevant Delta personnel as determined by the Delta Project Director through Training Needs Analysis. Details are provided in the Delta Training Management Plan.

Supervisory staff including Site Managers and Project Managers will be competent in the following additional training:

- Legislative Awareness;
- Site induction;
- Training in the operation of the site to the company Management system covering Safety, Environment and Quality;
- Incident and Accident Investigation;
- Attend Training Courses I.e. Asbestos A and B, Plant and Equipment, First Aid and IMS Training;
- Behavioural Management Training; and
- Audit training.

Elected Site Health and Safety Representatives are required to undergo training that is consistent with recognised competencies, including:

- OHS training as defined in state regulations;
- Risk Management;
- Incident and Accident Investigation SEF 010a and SEF 010b; and
- Safety Communications (Supervisory Skills).

6.11 Emergency and incident response

6.11.1 General emergency and incident response

In the event of an environmental incident, the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure (SM-17-00000096) will be implemented. The full procedure is provided in **Appendix H**.

The procedure provides references to:

- Types of incidents;
- Criteria for classifying of environmental incidents;
- Processes for systematically responding to and managing emergency situations; and
- Processes, and legal requirements (e.g. Acts, Regulations, etc), for reporting and notification of an environmental incident.

The procedure covers the management of events such as, but not limited to:

- Spills of fuels, oils, chemicals and other hazardous materials;
- Unauthorised discharge containment devices;
- Unauthorised clearing or clearing beyond the extent of the Project boundary or premises;
- Inadequate installation and subsequent failure of temporary erosion and sediment controls;
- Unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat;

- Unauthorised harm or desecration to Aboriginal objects and Aboriginal places;
- Unauthorised damage or destruction to any State or locally significant relic or Heritage item;
- Potential contamination of waterways or land;
- Accidental starting of a fire or a fire breaking out of containment;
- Any potential breach of legislation, including a potential breach of a condition of an environment protection licence, MCoAs or any agency permit condition;
- Works undertaken without appropriate approval or assessment under the EPA Act;
- Works undertaken that are not in accordance with a Project assessment; and
- Unauthorised dumping of waste.

6.11.2 Emergency Works Notification

On becoming aware of the need for emergency work in accordance with MCoA D37 (a)(ii) above, the AA, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. The Proponent must use best endeavours to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work.

6.11.3 Incident Notification and Reporting

The incident notification and reporting requirements are described in full within the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure (SM-17-00000096) which is provided in **Appendix H**.

A summary of the incident notification and reporting process is provided in **Table 7** below.

Where an environmental event has been deemed to be an "Environmental Issue", as defined in SM-17-00000096, this will be documented and closed out within the relevant approved inspection report (e.g., SEF 049 or ER Inspection Report).

Environmental incident reporting will include completion of the Sydney Metro Environmental incident and non-compliance report (SM-17-00000105), and the Delta Incident Report (SEF 010) as required.

Table 7. Summary of Environmental Incident Notification and Reporting Requirements

Class & Category	Category definition	Verbal Notification to Principal & ER	Written Report to Principal & ER	
			Incident Notification Report	Incident Investigation report
Class 3				
C6	No appreciable changes to environment and/or highly localised event.	Within 48 hours	Within 48 hours	N/A
C5	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries.			
C4	Short-term and/or well contained environmental effect. Minor remedial actions probably required.			
Class 2				

Class & Category	Category definition	Verbal Notification to Principal & ER	Written Report to Principal & ER	
			Incident Notification Report	Incident Investigation report
C3	Impacts external ecosystem and considerable remediation is required.	As soon as possible after becoming aware	Within 48 hours	Within 7 days
C2	Long-term environmental impairment in neighbouring or valued ecosystems. Extensive remediation required.			
Class 1				
C1	Irreversible large-scale environmental impact with loss of valued ecosystems.	As soon as possible after becoming aware	Within 48 hours	Within 7 days

Sydney Metro and ER

Environmental incidents that would be or have the potential to be classified as Category 1 and Category 2 under the Sydney Metro Environmental incident and Non-compliance Reporting Procedure (**Appendix H**), will be notified verbally immediately to the Sydney Metro Environmental Manager and the ER, as well as the AA for noise and vibration related incidents. Class 3 incidents will be reported to the principal and ER within 48 hours.

Incident reports will be provided to Sydney Metro and the ER in accordance with the Procedure, including lessons learnt from each environmental incident and proposed measures to prevent the occurrence of a similar incident. All efforts will be undertaken immediately to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

NSW EPA

The Environmental and Sustainability Manager will be available to be contacted by the NSW EPA on a 24-hour basis and who have authority to take immediate action to shut down any activity, or to affect any pollution control measure, as directed by Sydney Metro or an authorised officer of the NSW EPA.

Delta is required to inform the Principal immediately of any incidents that may require notification to the NSW EPA.

Section 148 of the Protection of the Environment Operations Act 1997 (PoEO Act) requires notification to the NSW EPA of pollution incidents causing or threatening to cause material harm to the environment. Under Section 147, 'material harm' is defined if:

(a) If the actual or potential harm to the health or safety of human beings or ecosystems is not trivial.

(b) If actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000.

Loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to avoid, mitigate harm to the environment. For the purposes of this part of the PoEO Act, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.

DPE

The Department must be notified via phone or in writing via the Major Projects website immediately after the Proponent becomes aware of an incident. Any notification via phone must be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one), and set out the location and nature of the incident. Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix A (included herein as **Appendix H**) of the SSI Project Approval.

The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Proponent becomes aware of any non-compliance with the conditions of this approval. A noncompliance notification must identify the CSSI (including the application number for it), set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

6.12 Roles and Responsibilities

Delta Group personnel at all levels are accountable legally and otherwise for environmental performance, within the scope of their defined and inferred roles and responsibilities, including in supporting the Environmental Management System.

6.12.1 Roles and Responsibilities of Key Personnel

The roles and responsibilities of Delta's key personnel during the Project are provided in the following section. An Organisational Chart showing the management relationship for all personnel from the level of Foreman and above is provided in **Appendix G**.

Table 8 Key Roles and Responsibilities Relevant to Environmental Management

Project Role	Responsibilities
Project Director	The Project Director will be engaged full-time across each and all Packages and Portions throughout Delta's Activities to ensure that Delta meets all Contract obligations. They will be Delta's primary contact with the Principal's Representative on all aspects of the Project, including community consultation and stakeholder engagement. The Project Director will interface: • with the Principal through monthly progress meetings, the Monthly Report, and ad hoc meetings as and when required; • With the Sydney Metro Change Control Sub Committee as and when required; • With the Environmental Representative as and when required; and • With the Independent Certifier as and when required. The Project Director is responsible for: • Accountable for the implementation of the CEMP and relevant Sub Plans; and • Approving CEMP and Sub Plans amendments prior to ER or other required endorsements/approvals. The Project Director will be suitably qualified and have a minimum of ten years' experience in construction and/or demolition works.
Project Manager	Responsible for environmental issues at the workplace, including: • Implementing and maintaining the CEMP and relevant Sub Plans; • Undertake a detailed review of the project documentation and prepare a schedule of scope deliverables which forms the environmental management plan; • Organisation of on-site personnel with regard to their responsibilities within the IMS; • Identify key environmental management risks and opportunities to ensure high environmental management outputs; • Communicating with the principal contractor to reduce environmental management risks; • Being a part of the planning and design stages of trade activities; • Ensure that all staff under their control have adequate training and experience for the for the work in conjunction with operations supervisor; • Ensure that all staff under their control has adequate equipment to carry out the works in conjunction with operations supervisor; • Periodic audits of their environmental control processes; • Manage non-conformances and initiate corrective action as required; • Manage defects on site to reduce the number of defects at completion; • Leading by example and promoting sound environmental management practices at every opportunity; • Reviewing environmental management reports and inspections, and following up on recommendations; and • Regular attendance at on-site meetings to ensure environmental management related issues are raised for review. The Project Manager will interface:

Project Role	Responsibilities
	• Directly with the Project Director and wider project team; • With the Principal through monthly progress meetings and ad hoc meetings as and when required; • With the Sydney Metro Change Control Sub Committee as and when required; • With the Independent Certifier as and when required; and • With the Environmental Representative during ER site inspections and in addressing ER correspondence or enquiries. The Project Manager will have an Engineering degree or equivalent and have a minimum of five years' experience in construction and/or demolition works.
Demolition Site Manager	Responsible for environmental management at the workplace, including: • Implementing the CEMP and relevant Sub Plans; • Understanding the requirements of the contract and ensuring the works are delivered in accordance with the contract; • Ensuring that ITPs are being carried out properly and nominated Hold Points are verified prior to works proceeding; • Providing advice and assistance on environmental matters to employees; • Deciding when training is required; • Undertaking inspection of the contracted or planned works to ensure that environmental control measures are implemented and effective; • Managing personnel and sub-contractors; • Ensuring that all defects and incidents are identified, actioned and closed out; • Leading by example and promoting sound environmental practices at every opportunity; • Carrying out weekly toolbox talks; • Attending other on-site meetings to ensure environmental issues are raised for review; • Assisting in developing SWMS for all tasks and ensuring the work is monitored throughout. If required, amending SWMS to reflect work activity changes; • Taking all reasonable care to maintain a high standard of care and workmanship; • Ensuring Site Inductions are conducted for all workers and Subcontractors; • Managing the Site Folder on and ensuring all QSE documents are correctly completed – including consultation, communication checklist and registers; • Recording all daily site activities in a site diary; • Other environmental related duties as directed by the Project Manager; • Provide all documentation requested by the ER for them to perform their functions (as specified in MCoA A31). The Site Manager will interface: • With the Principal through attendance at collaborative site inspections and surveillance activities, and *ad hoc* meetings; • With the Independent Certifier as and when required; and • With the Environmental Representative during ER site inspections and in addressing ER correspondence or enquiries. The Site Manager will have a minimum of five years of construction and/or demolition experience.

Project Role	Responsibilities
Delta Environment and Sustainability Manager	Responsible for environmental management at the workplace, including: • Implementing the CEMP and relevant Sub Plans • Conducting internal audits and inspections of the site and compliance with the CEMP and Sub Plans; • Participating in Principal-led site audits; • Assisting in the implementation of the CEMP; • Updating the CEMP as required, and preparing Consistency Assessments in accordance with the Sydney Metro Planning Approval Consistency Assessment Procedure, as required; • Understanding the requirements of the contract; • Providing advice and assistance on environmental management matters to employees; • Advising when training is required; • Attending and presenting toolbox meetings and inductions as required; • Ensuring that all environmental defects and incidents are identified, actioned and closed out; • Leading by example and promoting sound environmental management practices at every opportunity; • Attending on-site meetings to ensure environmental management related issues are raised for review; • Other environmental management related duties as directed by the Project Manager; • Provide all documentation requested by the ER for them to perform their functions (as specified in MCoA A31). • Provide required support to the AA for them to perform their functions (as specified in MCoA A36). The Environment and Sustainability Manager will interface: • With the Principal through attendance at collaborative site inspections and surveillance activities, Consistency Assessments, and *ad hoc* meetings; • With the Acoustics Advisor as and when required; • With the Environmental Representative during ER site inspections and in addressing ER correspondence or enquiries; • With the Sydney Metro Change Control Sub Committee when preparing Consistency Assessments; • With environmental regulators, including NSW EPA and DPE as and when required. The Environment and Sustainability Manager will hold an appropriate environmental degree or equivalent and have a minimum of five years of experience in environmental management of construction and/or demolition projects.
Acoustics Advisor (AA)	The approved AA must: (a) receive and respond to communication from the Planning Secretary in relation to the performance of Stage 1 of the CSSI in relation to noise and vibration; (b) consider and inform the Planning Secretary on matters specified in the conditions of this approval relating to noise and vibration; (c) consider and recommend, to the Proponent, improvements that may be made to avoid or minimise adverse noise and vibration impacts;

Project Role	Responsibilities
	(d) review all proposed night-time works (with the exception of low risk activities) to determine if sleep disturbance would occur and recommend measures to avoid sleep disturbance or appropriate additional alternative mitigation measures; (e) review all noise and vibration documents required to be prepared under the conditions of this approval and, should they be consistent with the conditions of this approval, endorse them before submission to the Planning Secretary (if required to be submitted to the Planning Secretary) or before implementation (if not required to be submitted to the Planning Secretary); (f) regularly monitor the implementation of all noise and vibration documents required to be prepared under the conditions of this approval to ensure implementation is in accordance with what is stated in the document and the conditions of this approval; (g) review the Proponent's notification of incidents in accordance with Condition A43 of this schedule; (h) in conjunction with the ER (where required), the AA must: (i) as may be requested by the Planning Secretary or Community Complaints Mediator (required by Condition B8 of this schedule), help plan, attend or undertake audits of noise and vibration management of Stage 1 of the CSSI including briefings, and site visits, (ii) in the event that conflict arises between the Proponent and the community in relation to the noise and vibration performance of Stage 1 of the CSSI, follow the procedure in the Overarching Community Communication Strategy referenced in Condition B1 of this schedule to attempt to resolve the conflict, and if it cannot be resolved, notify the Planning Secretary, (iii) if requested by the ER, consider relevant minor amendments made to the Site Establishment Management Plan, CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the conditions of this approval and the management plans and monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, endorse the amendment, (this does not include any modifications to the conditions of this approval), (iv) if requested by the ER, review the noise impacts of minor ancillary facilities, and (v) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, a Monthly Noise and Vibration Report detailing the AA's actions and decisions on matters for which the AA was responsible in the preceding month. The Monthly Noise and Vibration Report must be submitted within seven (7) days following the end of each month for the duration of the AA's engagement for Stage 1 of the CSSI, or as otherwise agreed by the Planning Secretary. The AA will interface with the Environment and Sustainability Manager or delegate in addressing AA correspondence or enquiries. Note: The AA has been nominated by Sydney Metro and approved by DPE in accordance with MCoA A33.
Environmental Representative (ER)	For the duration of the work or as agreed with the Planning Secretary, the approved ER must:

Project Role	Responsibilities
	(a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of Stage 1 of the CSSI; (b) consider and inform the Planning Secretary on matters specified in the conditions of this approval; (c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review documents identified in Conditions A10, A17, A19, C1, C5 and C14 of this schedule and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so: (i) endorse the documents before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or (ii) endorse the documents before the implementation of such documents (if those documents are only required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary / Department); (e) for documents that are required to be submitted to the Planning Secretary / Department for information under (d)(ii) above, the documents must be submitted as soon as practicable to the Planning Secretary / Department after endorsement by the ER, unless otherwise agreed by the Planning Secretary; (f) regularly monitor the implementation of the documents listed in Conditions A10, A17, A19, C1, C5 and C14 of this schedule to ensure implementation is being carried out in accordance with the document and the conditions of this approval; (g) as may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A39 of this schedule; (h) as may be requested by the Planning Secretary, assist in the resolution of community complaints received directly by the Department; (i) consider or assess the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities as required by Condition A21 of this schedule; and (j) consider any minor amendments to be made to the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs without increasing impacts to nearby sensitive receivers, and are consistent with the conditions of this approval and the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the conditions of this approval; (k) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing the information set out in the Environmental Representative Protocol under the heading “Environmental Representative Monthly Reports”. The Environmental Representative Monthly Report must be submitted within seven (7)

Project Role	Responsibilities
	days following the end of each month for the duration of the ER's engagement for Stage 1 of the CSSI, or as otherwise agreed by the Planning Secretary; and (l) assess the impacts of activities as required by the Low Impact Work definition. With respect to (d) above, the ER is not required to endorse the specialist content in documents requiring specialist review and / or endorsement. The Environmental Representative will interface with the Environment and Sustainability Manager or delegate during ER site inspections and in addressing ER correspondence or enquiries. The Environment and Sustainability Manager will seek the endorsement of the ER for management plans, consistency assessments, and minor amendments to be made to the CEMP and its Sub Plans. Note: The ER has been nominated by Sydney Metro and approved by DPE in accordance with MCoA A27.
Excavation Director	The Excavation Director must be present to oversee excavation, advise on archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the approved Archaeological Research Design and Excavation Methodology(s) required under Condition D25 of this schedule. Aboriginal archaeological excavations must be conducted by a suitably qualified person in accordance with the requirements of the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010). More than one Excavation Director may be engaged for Stage 1 of the CSSI to exercise the functions required under the conditions of this approval. Note: The Excavation Director has been nominated by Sydney Metro and approved by DPE in accordance with MCoA D27.
Independent Environmental Auditor (IEA)	The IEA is responsible for • Conducting and carrying out Independent Audits in accordance with the Independent Audit Post Approval Requirements (DPE, 2020); • Conduct the initial and subsequent Independent Audits at different times to those specified in the Independent Audit Post Approval Requirements (DPE, 2020) should the Planning Secretary require it; and • Prepare an Independent Audit Report for each audit undertaken. Note: The IEA has been nominated by Sydney Metro and approved by DPE in accordance with MCoA A40.
Work Portion QSE Advisors	Responsible for quality, safety, and environmental management at the workplace, including: • Conducting internal audits and inspections; • Assisting in the implementation of the QSE documentation at the site; • Understanding the requirements of the contract; • Assisting in toolbox meetings and inductions; • Providing advice and assistance to personnel and subcontractors; • Leading by example and promoting sound practices at every opportunity; • Attendance at all on-site meetings to ensure QSE is raised for review; and • Other QSE related duties as directed by the Project Manager. QSE Advisors will interface with the Environmental Representative during ER site inspections.

Project Role	Responsibilities
Project Heritage Consultant/s	The project heritage consultant will provide input and advice on heritage matters. This will include direct input into the preparation of the Heritage Management Sub Plan and ad hoc advice during construction. The Project Heritage Consultant will be suitably qualified and experienced in heritage.
Project Ecologist/s	The project ecologist will provide input and advice on ecological matters. This will include direct input into the preparation of the Flora and Fauna Management Sub Plan, pre-clearance inspections and reporting, ad hoc advice during construction and post-clearance inspections and reporting. The Project Ecologist will be suitably qualified and experienced in ecology.
Project Acoustics Consultant/s	The project acoustics consultant will provide input and advice on matters related to noise and vibration. This will include preparation of the Noise and Vibration Management Sub Plan and associated Detailed Noise and Vibration Impact Statements, noise and vibration monitoring and reporting, attended monitoring as required, and ad hoc advice during construction. The Project Acoustics Consultant will be suitably qualified and experienced in acoustics.

6.13 Environmental Monitoring, Inspections and Auditing

6.13.1 Noise and Vibration Monitoring

Delta will carry out noise and vibration monitoring as described in the Noise and Vibration Management Sub Plan (NVMSP). Monitoring will be detailed in the Noise and Vibration Monitoring Program which will be prepared in accordance with MCoAs C15 and C16, and will be developed based on the control measures and monitoring required of the NVMSP.

The Noise and Vibration Monitoring Program will be endorsed by the ER and then submitted to the Planning Secretary for approval at least one (1) month before the commencement of construction. Unless otherwise agreed with the Planning Secretary, construction will not commence until the Planning Secretary has approved the Noise and Vibration Monitoring Program.

The Noise and Vibration Monitoring Program, as approved by the Planning Secretary, including any minor amendments approved by the ER, will be implemented for the duration of construction as set out in the monitoring program or as specified by the Planning Secretary or the ER (whichever is applicable), whichever is the greater.

The results of the Noise and Vibration Monitoring Program will be submitted to the Planning Secretary, ER and AA for information in the form of a monitoring report frequency identified in the final approved Program.

Real-time noise and vibration monitoring will be carried out by a specialist using permanent monitoring installations at key sensitive receivers around each site. An automated monitoring system will be used, and data will be instantly and automatically uploaded to a central server. Data will be accessible by way of an online gateway where users can log on to the system and view monitoring in real-time, as well as call up a full history of results for each location. Delta will grant access to the online monitoring gateway to relevant stakeholders. Where complaints are received, data can be interrogated for the specific location of complaint.

Unattended long-term monitoring will be supplemented with 15 minute attended monitoring to validate the estimates of structure borne noise and vibration, determine relationships between permanent monitor locations and other affected receivers, and conduct additional monitoring at the specific location where complaints are received.

Where vibration-intensive works are planned to occur in close proximity to sensitive receivers, and works are expected to approach the limits for cosmetic damage, monitoring equipment shall be equipped with visual and/or audible alarms that are triggered when the levels of vibration exceed the control criteria provided in NVMSP.

Proposed permanent monitor locations are detailed in Appendix B of the NVMSP and the ECMs found in **Appendix E**. The number and location of monitoring points shall be reviewed after an initial period of 2 - 3 months. Where noise and vibration levels are negligible and, in consideration of the works still to be completed, those levels are not expected to increase for the remainder of the project, consideration shall be given to the removal of redundant monitoring points.

6.13.2 Waste Monitoring

Delta will carry out waste monitoring as described in the Waste Management Sub Plan (WMSP).

All materials dispatched from site will be tracked from site to final destination. A record of trucks, their destination, and the materials they are carrying will be maintained on site using IMS QF 029 Material Disposal Running Sheet (**Appendix A** of WMSP). Delta's internal Transport Group will then correlate the running sheet with tipping dockets and receipts from the recycling facility or landfill destination.

The Delta Transport Group will review waste tracking documentation to ensure that the running sheet correlates with disposal receipts. Where there is a discrepancy, the Delta Transport Group will investigate by contacting firstly the disposal location to review their records, and then the trucking company.

The Project Manager will review waste tracking documentation to ensure that the Gate Attendant is completing their responsibilities under the WMSP, that waste and recyclable materials are being dispatched to licensed facilities, and that materials that can be reused, recycled, or reprocessed are not being disposed of to landfill.

6.13.3 Sustainability

Delta will monitor sustainability targets in accordance with the requirements of the Sustainability Management Sub Plan (SMSP). Delta's targets focus on:

- Carbon and energy management;
- Water efficiency;
- Waste and materials; and
- Records management and retention for sustainable procurement.

Electricity supplies to temporary offices and compounds that is metered and invoiced will be tracked. A manual data collection scheme will be adopted to track the use of diesel and other liquid and gaseous fuels within the Project.

Potable water from standpipes and temporary offices and compounds that is metered and invoiced by Sydney Water will be tracked. A manual data collection scheme will be adopted to track the use of non-potable water within the Project.

6.13.4 Construction Monitoring Program

Delta will carry out a Construction Monitoring Program, as required by MCoA C14, to compare actual performance of construction of the Project against predicted performance. In relation to Delta's scope, the following construction monitoring program will be carried out:

- Noise and Vibration monitoring program – this has been outlined in the N&VMSP

A general summary of the overall environmental Construction Monitoring Program is found in **Appendix M**.

6.13.5 Environmental Inspections

Delta will carry out surveillance of environmental mitigation measures in accordance with Procedure 24 Inspection, Monitoring and Measurement in the Delta IMS. Daily Pre-starts are carried out by the Site Foreman, and recorded on Safety and Environmental Form SEF 047 Site Diary - Daily pre-start.

Regular site inspections are carried out by the Site Manager, and recorded on SEF 049 Site Inspection Report. Site inspections cover entire or specific portions on a rotating requirement, including the site perimeter, and assess safety and environmental aspects of the project. Environmental aspects include checking waste storage facilities, the condition of any erosion and sediment controls, noise barriers, site hoarding, the need for graffiti or weed removal, the health of retained vegetation, and the direction of any site lighting.

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

Delta's Environment and Sustainability Manager will participate in regular site inspections by the Environment Representative (ER), and Sydney Metro representatives at a frequency to be agreed with the Principal's Representative.

A timetable of site inspections is provided in **Table 9** below.

Table 9 Site Inspection Timetable

Inspection	Frequency	Content	Record
Daily Pre-start	Daily	Safety, environment, quality	SEF 047
Site Inspection	Weekly	Safety, environment	SEF 049 SEF 073
ER Inspection	As determined by Sydney Metro and ER	Environment	ER Inspection Report

6.13.6 Environmental Audits

Delta will actively participate in the Sydney Metro West Compliance Tracking Program (Stage 1) (SM ES-ST-202/3.0). The enabling works undertaken by Delta will be subject to internal and external environmental auditing processes. Internal and external audit and surveillance activities may include risk-based compliance testing, desktop review of documentation, inquiry and observation of activities, or review of developing processes or activities.

Internal Audits

Delta carries out routine health, safety, environmental, and quality (HSEQ) audits of all of its projects. Environmental audits will be carried out in accordance with Delta's IMS Procedure and recorded in Delta form AUD 005 Environmental Audit and as a component of Delta's HSEQ audits.

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 its audit and surveillance requirements are maintained by the sub-contractor, and provide evidence that the sub-contractor's activities are being effectively overseen by Delta. If requested by the Principal, Delta will provide evidence of the effective implementation of management systems and procedures by its sub-contractors.

External Audits

Independent External Audits will be required to be undertaken in accordance with MCoA A39, which references the *Independent Audit Post Approval Requirements* (DPE, 2020). These audits will be initiated and managed by Sydney Metro across the entire Sydney Metro West Project, and will be undertaken in compliance with the following requirements:

- MCoA A40: Proposed independent auditors must be approved by the Planning Secretary before the commencement of an Independent Audit.
- MCoA A41: The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in the Independent Audit Post Approval Requirements (DPE, 2020), upon giving at least four (4) weeks' notice (or timing as stipulated by the Planning Secretary) to the Proponent of the date upon which the audit must be commenced.
- MCoA A42: Independent Audit Reports and the Proponent's response to audit findings must be submitted to the Planning Secretary within two (2) months of undertaking the independent audit site inspection as

outlined in the Independent Audit Post Approval Requirements (DPE, 2020), unless otherwise agreed by the Planning Secretary.

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.

The audit and surveillance activities may include risk-based compliance testing, desktop review of documentation, inquiry and observation of activities, or review of developing processes or activities.

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.

Delta recognises that a number of other parties, such as Regulators and Authorities, are required to or have an interest in auditing Delta's systems and processes established for the Project. A collaborative audit program will be established by the Principal to coordinate third party audit activities across the project and to provide timely and cost effective assurance that aligns and standardises the planning, conduct and reporting of audits.

The Principal will establish an Audit Working Group to manage the collaborative audit program. The Working Group will be comprised of representatives from the Principal, Delta, and other parties that may have an interest in the project. The Audit Working Group will collaboratively develop, agree, and implement a risk based audit program covering all aspects of Delta's activities. Delta will attend the Audit Working Group meetings. These will be held on a monthly basis, or as requested by the Principal.

Key components of the collaborative audit program are:

- The Principal will conduct audits on Delta's compliance with the requirements of Delta's quality management system.
- The Principal may conduct audits on the Delta's compliance with the Contract and its Management Plans.
- Audit findings will be reported in accordance with the Principal's Audit and Compliance Standard SM QM-ST-202, which includes a rating of audit findings based on an assessment of risk and priority for action. These records may be used by the Principal for any purpose.
- Delta will implement systems and procedures to ensure audit recommendations and corrective actions are actioned in a timely and agreed manner. The status of audit action implementation will be reported by Delta to the Principal on a monthly basis.
- Delta will periodically provide evidence that audit actions have been implemented to allow the Principal to verify the effectiveness of the audit action implementation and reporting process.

Six Monthly Compliance Assessments

In accordance with the Sydney Metro West Compliance Tracking Program (Stage 1) (SM ES-ST-202/3.0), every six months from the determination date for the project, the ER will conduct a Six Monthly Compliance Assessment. This process is a risk based desktop review of Planning Approval conditions with the support of Sydney Metro and Delta.

At the commencement of the six-monthly period, the ER will outline core focus areas and select specific conditions to examine by applying their knowledge of:

- Environmental performance;
- Construction Programs;
- Complaint management; and
- Environmental Incidents, Issues and Non-compliance's.

The scope of assessment is to be documented by the ER and communicated to any parties under assessment at the beginning of the assessment period. The ER may adjust these focus areas, or include new focus areas, during the period of assessment based on their judgement.

The ER will regularly collaborate with Sydney Metro and Principal Contractors (Delta) who are required to provide the ER with evidence of compliance for the specific conditions they are assessing. Records may be requested on an ongoing basis where key records are identified during site inspections, and routine program environment and planning meetings.

The ER may adopt whatever approach they deem effective in conducting their review, and will conduct the review in an efficient and thorough manner. The ER will communicate to any party under assessment what the process will be in advance, and allow adequate time for preparation by parties under assessment.

The ER may also choose to rely on the findings of any Independent Environmental Audits where these have been conducted and adjust the frequency of any desktop reviews to accommodate the timing of the Independent Environmental Audits.

Following the desktop review, the ER will form their own view of compliance to the Planning Approval and produce a Six Monthly Compliance Assessment Report that states the conditions examined, the results of the review, and any recommendations.

Where the ER identifies a Non-compliance to a Planning Approval requirement, it is raised by the ER as part of the Six Monthly Compliance Assessment process and resolved using the Sydney Metro Environmental Incident Classification and reporting procedure (SM-17-00000096).

Prior to the completion of works by the Principal Contractor a final Six Monthly Compliance Assessment is conducted irrespective of whether 6 months has elapsed. This final review is focused on ensuring that the Principal Contractor has completed their allocated requirements under the Planning Approval and has provided appropriate documentation and records to Sydney Metro.

Six Monthly Compliance Assessment Reports are received from the ER and maintained by Sydney Metro to form part of the Evidence Base for the Compliance Tracking Program.

A timetable of site audits is provided in **Table 10** below.

Table 10 Audits and Compliance Review Summary

Action	Frequency	Content	Reporting
Internal HSEQ Audit	Monthly	Safety, environment, quality	Internal audit outcomes will be reported to Sydney Metro within four weeks of completion of the audit.
Internal Project Audit	As required by the Delta accredited Integrated Management System.	Project MCoAs, Project objectives, Project specific management plans and procedures	Internal audit outcomes will be reported to Sydney Metro within four weeks of completion of the audit.
External – ER Audit/Inspection	As determined by the ER	As required under MCoA A30	Delta to provide the ER with documentation for the ER to perform their functions including preparing the Monthly Report. ER to prepare and submit report in accordance with their obligations.
External – ER Six Monthly Compliance Assessments	Six monthly or prior based on completion of works	Planning Approval conditions	Delta to provide the ER with documentation for the ER to include in their Six Monthly Compliance Assessment Reports

Action	Frequency	Content	Reporting
External – AA Audit	As determined by the AA	As required under MCoA A36	Delta to provide the AA with documentation for the AA to perform their functions. AA to prepare and submit report in accordance with their obligations.
External – Principal's Audit	As determined by Sydney Metro	As determined by Sydney Metro	As determined by Sydney Metro
External – Independent Audit (MCoA A39)	Within 12 weeks of the commencement of construction. At intervals, no greater than 26 weeks from the date of the initial Independent Audit or as otherwise agreed by the Secretary.	As described in the *Independent Audit Post Approval Requirements* (DPE, 2020) and defined by Sydney Metro.	Independent Audit Reports and the Proponent's response to audit findings must be submitted to the Planning Secretary within two months of undertaking the independent audit.

6.14 Environmental Non-Compliances

Delta will document and detail any non-compliances arising out of the monitoring, inspection and audit regime. The Principal and the ER will be made aware of all non-compliances in a timely manner. The Principal or the ER may also raise non-compliances against environmental requirements.

Non- compliances will be investigated, closed out, and evidence provided using the Environment Incident & Corrective Action Report (**appendix A**). Details of the non-compliance will be recorded in the Action Register SEF 024. The Action Register will be updated and made available to the Principal whenever a non-compliance notice is generated.

NB: where non-conformities (N-C) are witnessed whilst environmental monitoring, N-C and corrective action to be recorded on Environment Incident & Corrective Action Report. Once corrective action has been carried out, monitoring is to be repeated to ensure compliance and completed CAR to be sent to the Environment Manager and filed on the Delta Server.

The Project Manager and/or QSE personnel are responsible for issuing CARs to the relevant management representative and closing out non-compliances.

On receipt of a CAR, the management representative will;

- Assess the non-conformance to determine how the non-conformance occurred;
- Develop, where possible, a revised method of carrying out works to ensure that the same non-conformance does not re-occur;
- Regularly check operational methods following the implementation of corrective action to ensure revised methods of works are effective; and
- Submit all details of corrective actions implemented for all non-conformances to the Client's Environmental Manager or nominated representative.

A Non-conformance Report (QF038) will be raised and issued to the Principal for information. Where any non-conformance with the MCoAs has been identified, the Non-conformance Report (QF038) will be issued to the Principal within 7 days after Delta become aware the non-conformance. This will allow the Principal to issue the report to the Planning Secretary via the Major Projects website in accordance with MCoA A45.

Records of all corrective and preventative actions taken by Delta under the Contract and audits of such actions will be reported to the Principal in the Monthly Report in accordance with SMWR GS. The implementation status of corrective actions (open and overdue) will be reported, along with justification for overdue actions.

Corrective and preventative actions will be reported to the ER during the regular ER Site Inspection.

6.15 Environmental Records and Compliance Reporting

Delta will retain records of all reporting activity in the site files relevant to each site and in accordance with its IMS Procedure 05. Reports will be made available in a timely manner to the Principal (or their representative) as required in the Contract or on request. In addition, Delta will provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified MCoA A30 (including preparation of the ER monthly report).

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 the CEMF.

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

Compliance reports detailing the outcome of any environmental surveillance activity, including internal and external audits will be prepared by Delta's Environmental and Sustainability Manager (or delegate). These reports will be submitted to the Principal as required.

7 STAKEHOLDER AND COMMUNITY INVOLVEMENT

7.1 Overview

Delta will comply with the MCoAs and the requirements of SMWR OCCS in relation to Stakeholder and Community Involvement. Delta will:

- Undertake any actions required by the Principal to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes;
- Support the overall management and coordination of stakeholder and community liaison, consultation and notification in relation to the delivery of the Project and Delta's related Activities;
- Ensure the timeframes in SMWR OCCS and resources for document development, consultation, approval and notification are incorporated into project planning and Delta's Program;
- Ensure that the Principal Manager Project Communications, stakeholders and the community are provided with adequate notification of planned demolition activities and project milestones;
- Ensure that the Principal Manager Project Communications is included in team meetings and forums that provide information about ongoing work including weekly meetings;
- Ensure its employees, subcontractors and agents are aware of and comply, initially with the Draft and subsequently with the Final versions of the Community Communications Strategy and the broader requirements of SMWR OCCS;
- Be proactive in providing the Principal Manager Project Communications with accurate and adequate information on the status of Delta's Activities and any associated impacts;
- Make available appropriate senior personnel to attend meetings with the community or other stakeholders, as required;
- Consult the Principal Manager Project Communications prior to taking any unilateral action that may impact on the stakeholders or the community;

- Ensure that the Principal Manager Project Communications is informed of all issues raised by an Authority in relation to Delta's Activities and is invited to all meetings, presentations and site visits attended by any Authority in accordance with the Contract;
- Ensure that the Principal Manager Project Communications is continuously informed of all issues raised directly with Delta by stakeholders and the community;
- Ensure that the Principal Manager Project Communications is contacted immediately in relation to planned or unplanned community protests that may arise during the performance of Delta's Activities; and
- Comply with all reasonable suggestions and requests of the community as agreed with the Principal Manager Project Communications.

7.2 Communication and Consultation Strategy

Delta will provide information as requested to assist the Principal's Project Communication team to finalise and implement the Communication and Consultation Strategy. Information required for the Community Communication Strategy will include:

- Issues to be managed prior to and during construction, including proposed strategies to manage these issues and mitigate impacts to the community and stakeholders;
- Details of Delta's nominated 24 hour contact for assisting in the management of complaints and enquiries;
- Policies and procedures for Incident management and reporting;
- A schedule for the start and finish of demolition activities, milestones, associated impacts to the community, and the proposed strategy for minimising impacts to the community; and
- Policies and procedures for ensuring Subcontractors comply with the communications requirements of the Contract.

Delta will seek out to consult with proponents of other works in the vicinity of each Portion with a view to coordinating works where reasonable and feasible to minimise the cumulative impacts of noise and vibration and maximise respite for affected sensitive receivers.

The Principal has designated itself as responsible for compliance with a number of the Minister's CoAs and for preparing documentation and schedules and communicating those to Delta. Delta will review and comment where applicable, and generally comply with the Principal's requirements through coordination with Sydney Metro. The CEMP will be updated following the finalisation of such documentation.

7.3 Key Stakeholders

The Principal (Sydney Metro) is responsible for the preparation and implementation of the Communication and Consultation Strategy. For Delta, the key stakeholders relevant to this CEMP are:

- Sydney Metro;
- Transport for NSW Roads and Maritime Services;
- Department of Planning and Environment;
- NSW Environment Protection Authority;
- Sydney Metro Change Control Sub Committee;
- City of Parramatta Council and Cumberland City Council;
- Businesses and residences adjacent to the demolition sites;
- The Environmental Representative;
- The Acoustics Advisor; and
- The Independent Environmental Auditor

Interfaces between these stakeholders and Delta personnel are provided in Section 4.13.

Communication between key stakeholders and Delta will be carried out in accordance with the requirements of SMWR GS and as provided in **Table 11**.

Table 11 Project Communication

Stakeholder	Communication Methods
Sydney Metro	Meetings, correspondence, and email. The Prescribed Electronic Portal will be used for all formal correspondence.
Sydney Metro Change Control Sub Committee	Co-ordination meetings, correspondence, email, and the Prescribed Electronic Portal.
DPE	Managed by the Principal. Co-ordination meetings and/or correspondence as required.
NSW Environment Protection Authority	Managed by the Principal. Co-ordination meetings and/or correspondence as required.
Roads and Maritime Services	Managed by the Principal. Co-ordination meetings and/or correspondence as required.
Councils	Managed by the Principal. Co-ordination meetings and/or correspondence as required.
Businesses and residences	Managed by the Principal.
Environmental Representative	Site meetings, inspections, correspondence, and email.
Acoustics Advisor	Site meetings, inspections, correspondence, and email.
Independent Certifier	Site meetings, inspections, correspondence, and email.

7.4 Complaints Handling

The Principal has established a Sydney Metro West project 24-hour telephone contact number, postal address and email address to which enquires and complaints will be received.

Delta will:

- Ensure project signage has been installed on the perimeter of the site which includes the CSSI name, application number, telephone number, postal address, email address, and mediation system for complaints (as supplied by Sydney Metro);
- Assist the Principal to respond and resolve enquiries and complaints in accordance with the Overarching Community Communication Strategy;
- Ensure that its personnel and its Subcontractors' personnel direct the community and stakeholders to the project 24-hour telephone number, postal address, and email address should they be approached directly;
- Provide a person that is available for contact by the Principal at all times to assist the Principal to answer complaints or enquires in relation to Delta's Activities; and
- Aim to provide feedback to requests for information from the Principal in relation to responses to complaints within 2 hours of the request and responses to general enquiries within 4 hours of the request.

Where a member of the public is not satisfied by the Principal's response to a complaint, the independent Community Complaints Mediator will follow up. Any member of the public that has lodged a complaint which is registered in the Principal's Complaints Management System may ask the Community Complaints Mediator to review the response. Delta will assist the Community Complaints Mediator where required.

Where there is a conflict between Delta and the community in relation to environmental performance, the ER will attempt to resolve the conflict in accordance with the Overarching Community Communication Strategy and, if the conflict cannot be resolved, notify the Secretary. Delta will assist the ER to resolve complaints where required.

The overall complaints register for the project will be maintained by Sydney Metro and provided on a weekly basis or as requested to the ER in accordance with MCoA A31.

7.5 Project Website

Delta will establish a Project page on its own Delta Group website prior to the commencement of works to provide information in relation to the Project. The website will provide information in relation to the Project that includes a current copy of each document required under MCoA B11. This will include:

- a copy of each statutory approval, licence or permit required and obtained in relation to Stage 1 of the CSSI, or where the issuing agency maintains a website of approvals, licences or permits, a link to that website; and
- a current copy of each document required under the conditions of this approval, which must be published within one (1) week of its approval or before the commencement of any work to which they relate or before their implementation, as the case may be.

The webpage will be maintained for the duration of Delta's works, and for a minimum of 24 months afterwards.

7.6 Urban Design of Temporary Works

The design of all temporary works will aim to minimise visual impacts on adjacent sensitive land user(s) and will require approval from the Principal in relation to urban design and visual impacts. Delta will issue the design to Sydney Metro for approval prior to installation. The boundary screening will comprise a mix of hoarding and/or chain wire fence. This may include utilising existing boundary fencing/barriers where they are suitable. Sydney Metro will provide graphical designs for hoarding. The implementation of the boundary screening will include sustainability initiatives, such as reuse of scaffolding members and timber ply sections across the project to minimise the waste.

Delta will regularly inspect and maintain construction hoardings and scaffolding. These will be kept clean and free of dust and dirt. Graffiti on construction hoardings, scaffolding, or acoustic sheds will be removed or painted over promptly.

The principles of *Crime Prevention Through Environmental Design* (CPTED) will be applied to all works, including temporary works, that have a public interface. The CPTED principles that may be applicable to minimise the opportunity for crime are surveillance, access control, territorial reinforcement, and space management.

Delta will provide CPTED through the following means:

- Maintenance of clear sightlines between public and private places;
- Effective lighting;
- Site security, in accordance with the Site Security Management Plan;
- Restricted access to internal areas and high-risk areas through the use of physical barriers;
- Access control signage;
- Clear transitions and boundaries between public and private spaces;
- Clear signage for passing motorists and pedestrians;
- Removal of litter and waste materials from within the site;
- Rapid repair of vandalism and graffiti; and
- The removal or repair of decayed physical elements such as construction hoardings, scaffolding, and acoustic sheds.

7.7 Business and Property Impacts

Delta will provide information regarding any potential impact that its activities may have on the community in accordance with SMWR OCCS for inclusion in the Principal's Communications Management Control Group (CMCG) meetings, and for the production of public communication material. Delta will provide:

- A summary of current and upcoming Activities, likely impacts, and mitigation measures;
- An update on any current or emerging issues and/or any promotional opportunities; and
- Information requested by the Principal Manager Project Communications.

Delta will carry out the Project with the objective of minimising impacts to, and interference with, third party property and infrastructure, and to protect such infrastructure and property during the works.

8 GENERAL SITE WORKS

8.1 Working Hours

In accordance with MCoA D36, the project works will be carried out between the standard working hours of 7am to 6pm on weekdays and 8am to 6pm on Saturdays. No works may be carried out on Sundays or public holidays.

Where highly noise intensive work results in an exceedance of the applicable noise management levels (NML) at the same receiver, the works must only be undertaken in accordance with MCoA D36. This includes:

- between the hours of 8:00 am to 6:00 pm Monday to Friday;
- between the hours of 8:00 am to 1:00 pm Saturday; and
- if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour.

For the purposes of MCoA D36, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work.

Works may be undertaken outside of the approved hours listed above in the following circumstances:

- Safety and Emergencies
- Low impact
- By Approval
- Those works described in the environmental assessment as being required to take place 24/7;
- Works have been determined to comply with the relevant Noise Management Level at sensitive receivers;
- The delivery of materials outside of approved hours is required by the Police or other authorities for safety reasons;
- The works are emergency works required to avoid the loss of lives or property and / or to prevent environmental harm; or
- Written agreement has been reached with all affected receivers.

8.2 Out of Hours Work Protocol

Works that are intended to be carried out outside standard work hours will be subject to an Out of Hours Works (OOHW) application and approval process that is applicable to all construction methods and sites. A detailed Construction Noise and Vibration Impact Statement will be prepared to support the OOHW application.

The timing and duration of works approved through the Out of Hours Work Protocol will be communicated to the relevant council, local residents, and other affected stakeholders and sensitive receivers.

The Out of Hours Works Protocol is provided in the Construction Noise and Vibration Management Plan.

The OOHW application must be provided to the Principal's Representative and/or the ER at least 15 days prior to commencement of the subject works.

8.3 Road Dilapidation Report

In accordance with MCoA D88, a Road Dilapidation Report will be prepared for local roads proposed to be used by heavy vehicles for the Project prior to commencement. The report will be prepared by Delta Group. Copies of the report will be submitted to relevant stakeholders within the periods prescribed by CoA D88.

8.4 Reinstatement

Reinstatement of each Portion will be carried out to the extent possible following demolition works. Delta will:

- Any property access physically affected by Delta's works will be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access will be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier.
- Clear and clean all working areas and accesses at project completion;
- Remove all plant, temporary buildings or vehicles from the site after the completion of works;
- Restore all temporarily occupied roadways, footpaths, loading facilities or other land to their pre-existing condition or better; and
- Reinstate any community spaces, infrastructure, and services as soon as possible after the completion of works.

9 SPOIL MANAGEMENT

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

The following best-practice management measures would be implemented during construction works:

- Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather;
- Adjust the intensity of activities based on measured and observed dust levels and weather forecasts;
- Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers; and
- Regularly inspect dust emissions and apply additional controls as required.

Delta will generate demolition wastes including concrete, brick, steel, and other materials. These will be managed in accordance with the Waste Management Sub Plan.

10 GROUNDWATER MANAGEMENT

Delta's activities are unlikely to impact on groundwater resources. However, Delta will adopt the following groundwater management objectives throughout the duration of the Project:

- Reduce the potential for drawdown of surrounding groundwater resources;
- Prevent the pollution of groundwater through appropriate controls; and
- Reduce the potential impacts of groundwater dependent ecosystems.

The management, discharge, and reuse of excess water on the Project will be carried out in accordance with Sydney Metro's Water Discharge and Reuse Procedure (SM-17-00000098) included in **Appendix J** to this CEMP.

11 CONSTRUCTION TRAFFIC MANAGEMENT

The construction traffic management requirements of Section 5.2 of the CEMF, Section 2.11 of the Sydney Metro West General Specification, and Section 2.6 of the Sydney Metro West Particular Specification are provided in the Site-Specific Construction Traffic Management Sub Plan. The Site-Specific Construction Traffic Management Sub Plan has been developed in accordance with the Sydney Metro Construction Traffic Management Framework (CTMF) and any relevant standards and guides.

12 CONSTRUCTION NOISE AND VIBRATION MANAGEMENT

The construction noise and vibration management requirements of the Sydney Metro West General Specification Schedule C1 (SM-21-00257367), Section 2.2.6 of the Sydney Metro West Particular Specification and the CEMF are provided in the Construction Noise and Vibration Management Sub Plan. The Construction Noise and Vibration Management Sub Plan has been developed in accordance with MCoA C5 and the Sydney Metro West Construction Noise and Vibration Standard (SM-20-00098866).

13 HERITAGE MANAGEMENT

The heritage management requirements of the Sydney Metro West General Specification Schedule C1 (SM-21-00257367), Section 2.5 of the Sydney Metro West Particular Specification, and the CEMF are provided in the Heritage Management Sub Plan.

The Phase C2 archaeological investigation works will be undertaken by a Heritage specialist in accordance with the ARDEM 2021 and AHR 2021.

14 FLORA AND FAUNA MANAGEMENT

Project works have the potential to impact on surrounding and nearby flora and fauna. Delta will implement the management of flora and fauna as outlined in the Flora and Fauna Management Sub Plan.

15 RESOURCE MANAGEMENT

Delta's works have the potential to draw on scarce resources and those with a high life-cycle cost. Delta will adopt the following resource management objectives to the project. Delta will:

- Reduce material and resource use throughout the Project life-cycle where reasonable and feasible;
- Consider embodied impacts in materials selection;
- Use recycled materials where reasonable and feasible;
- Recycle and reuse materials onsite; and
- Influence subcontractors and materials suppliers to adopt sustainability objectives in their works and procurement.

Delta's resource management procedures, along with the requirements of SMWR PS and the CEMF, are provided in the Waste Management Sub Plan and the Sustainability Management Sub Plan.

16 SOIL AND WATER MANAGEMENT

Delta's works have the potential to impact on soil and water resources in the vicinity of the Project. Delta will adopt the following soil and water management objectives throughout the duration of the Project. Delta will:

- Minimise pollution of surface water through appropriate erosion and sediment control;
- Maintain existing water quality of surrounding surface drainage; and
- Source construction water from non-potable sources, where feasible and reasonable.

All reasonably practicable erosion and sediment controls will be installed and appropriately maintained to minimise water pollution from Delta's sites.

Phase C2 works will require open trenches which may collect both ground water and surface water (rainfall). In addition, the Phase C2 works will require the use of sieving water to assist in the identification of potential archaeological finds.

The management, discharge, and reuse of all excess water on the Project (both Phase C1 and C2) will be carried out in accordance with Sydney Metro's Water Discharge and Reuse Procedure (SM-17-00000098) included in **Appendix J** of this CEMP.

Erosion and sediment (Ersed) controls relevant to each Portion will be carried out in accordance with Managing Urban Stormwater: Soil and Construction (Landcom, 2008) – the "Blue Book". In general, the selection of ersed controls be based on site constraints and best for purpose in order to provide protection to local waterways. The ersed controls will generally be a combination of:

- Profiling drainage patterns to minimise potential runoff from site;
- Utilising existing high points, such as concrete upstand walls;
- Installing Coir logs;
- Installing lineal sedimentation fencing;
- Installing localised sandbags; or
- Fitting proprietary pollution drain guards (such as Gecko products) to outlet structures.

In accordance with REMM SSWQ1, prior to Phase C2 ground disturbance in areas of potential acid sulfate soil occurrence, testing would be carried out to determine the presence of actual and/or potential acid sulfate soils. If acid sulfate soils are encountered, they would be managed in accordance with the Acid Sulfate Soil Manual (ASSMAC, 1998).

In accordance with REMM SSWQ2, prior to Phase C2 ground disturbance in high probability salinity areas, testing would be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils would not be reused or it would be managed in accordance with Book 4 Dryland Salinity: Productive Use of Saline Land and Water (NSW DECC 2008). Erosion controls would be implemented in accordance with Blue Book (Landcom, 2004).

17 AIR QUALITY MANAGEMENT

Project works such as demolition, stockpiling, and transport of materials have the potential to impact on surrounding air quality. Delta will implement the air quality management provided in the Air Quality Management Sub Plan.

18 WASTE MANAGEMENT

The waste management requirements of Section 14 of the CEMF are provided in the Waste Management Sub Plan.

Waste generated during construction will be dealt with in accordance with the following priorities:

- Waste generation will be avoided and where avoidance is not reasonably practicable, waste generation will be reduced;
- Where avoiding or reducing waste is not possible, waste will be re-used, recycled, or recovered; and
- Where re-using, recycling or recovering waste is not possible, waste will be treated or disposed of.

19 DANGEROUS GOODS

Dangerous goods, as defined by the Australian Dangerous Goods Code, will be stored and handled in accordance with:

a) All relevant Australian Standards;

b) For liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and

c) The Environment Protection Manual for Authorised Officers: Bunding and Spill Management technical bulletin (EPA, 1997).

Dangerous goods on Delta's Project sites will be limited to small portable stores. The management of dangerous goods is described under Chemical Management in the Delta Project Health and Safety Management Plan.

Dangerous liquids will be stored within a bunded area of a minimum bund volume of 110% of the volume of the largest single stored volume and in accordance with the Environment Protection Manual for Authorised Officers: Bunding and Spill Management technical bulletin (EPA, 1997).

Material Data Sheets of all hazardous materials will be kept on file in the site office, the MSDS will be regularly reviewed through environmental inspections. All hazardous materials will be kept in locked containers, positioned away from vehicle movements and have access to clean and dry spill kits.

All drains and waterways are protected prior to work commencing (refer to **Section 16** above).

20 ENVIRONMENTAL RISK ANALYSIS

An environmental risk analysis was undertaken in accordance with the principles of the Australian and New Zealand standard AS / NZS ISO 31000:2009 Risk Management – Principles and Guidelines, and published in the EIS.

The risk analysis was revised for Delta's works and in accordance with the risk criteria and risk ratings provided in the Project Risk Management Plan. Consequence criteria are provided in Section 5.1 of the Risk Management Plan, and likelihood criteria in Section 5.2. A risk rating for each potential impact was determined as a product of likelihood and consequence using the risk matrix in Section 5.3.

An environmental risk analysis for the Project is provided in **Appendix D**. The risk analysis identifies risks that were identified in the EIS that are relevant at the demolition stage. It also identifies the residual risk rating following the application of mitigation measures provided in this CEMP and the relevant environmental sub plans.

21 LICENCE AND APPROVALS

Table 12 Summary of Licences and Approvals

APPROVAL	FREQUENCY	RESPONSIBLE PERSON
Low Impact Works	Prior to starting works on site.	Project Manager Various as listed in the Preconstruction Minor Works Approval Form – Sydney Metro West
SEMP, CEMP & Sub Plans	Prior to commencing relevant works.	Project Director
Road Occupancy Licence/Permit	Prior to any road occupation	Project Manager
Footpath Occupancy Licence/Permit	Prior to any footpath occupation	Project Manager
Notice of intent to commence demolition works to SafeWork NSW	5 days prior to commencing demolition works	Project Manager
Notification of asbestos removal work to SafeWork NSW	5 days prior to commencing removal of asbestos impacted materials	Project Manager
Out of Hours work	Throughout project	Project Manager

22 APPENDICES

APPENDIX A – DELTA ENVIRONMENTAL POLICY AND INSPECTION FORM

ENVIRONMENTAL MANAGEMENT POLICY (04)

POLICY STATEMENT

As part of our commitment to achieving the principles of responsible environmental management, sustainability and protection of the natural environment in our worksites, we recognise our legal and moral responsibility to ensure that our activities, products and services are designed to protect and enhance the environment in the communities in which we operate, and our obligations to ensuring that our operations do not place the natural environment or the local community at risk of harm.

AIMS AND OBJECTIVES

We are committed to environmental improvement and prevention of pollution. We will achieve this by working with our customers, suppliers and the community. To achieve these objectives we will –

- develop, implement and maintain a management system that addresses the requirements of ISO 14001;
- reduce waste through innovative work practices and recycling practices;
- minimise environmental impacts by reduction of polluting substances produced by our operations, activities, products or services;
- minimise the impact of our operations on the neighbouring community;
- increase the use of environmentally acceptable materials, equipment and technology in place of those which are considered harmful;
- ensure that our suppliers follow acceptable environmental policies; and
- actively promote environmental awareness among workers, clients, customers and the general public

At Delta Group we recognise that the overall responsibility environmental sustainability rests with management, who will be accountable for the implementation of this policy. These responsibilities include –

- ensuring that all environmental policies and procedures are implemented;
- establishing measurable objectives and targets to ensure continued improvement aimed at the elimination of waste, pollution and environmental harm;
- encouraging consultation and co-operation between management, workers and stakeholders in matters which may affect or impact on the environment; and
- providing adequate resources to meet these environmental commitments.

Workers responsibilities include –

- following all environmental policies and procedures; and
- recognising and reporting hazards which may affect the health and well-being of the environment.

Jason Simcocks
CEO

AUSTRALIA WIDE

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Environmental Inspection checklist - Site Preventive Action Report (SEF 049)

SITE PREVENTIVE ACTION REPORT

PROJECT:		PM NAME:	DATE:
NAME AND TITLE OF PERSON COMPLETING THIS FORM:		FOREMAN:	

Due Diligence	Typical Items / Identified threats of any kind including financial, must be logged in the Action Register SEF024
Prior to Start	☐ Foreman has issued up to date drawings ☐ SWMS for Task ☐ SOP ☐ Permits in Place ☐ Service Sign Off ☐First Aid Kits available ☐Designated Storage, Refueling & Maintenance area ☐ Stockpile locations identify ☐Engineered Designs ☐Material Identified (Pre-Classification)
Access	☐Clear Access/Egress ☐ Appropriate Signage & Tape ☐Access Lighting ☐Scaffold in place/ inspected ☐ Ladder secured
Plant, Tools & Equipment	☐Pins in Place ☐Plant & Equipment warning devices operational ☐Plant & Equipment Pre-Start Completed ☐Electrical Equipment tested and tagged ☐ Lasers calibrated ☐ Lifting/Height Equip Inspected ☐ Fire Extinguishers with Oxy Kit ☐ Toolshed Clean and orderly
Task Set Up	☐Survey Set Out ☐ Services marked & Protected ☐Public Protection maintained ☐ Work area illuminated (lighting) ☐ Exclusion Zones ☐Task Lighting ☐ Exhaust Fans ☐Dust Suppression ☐ Noise Management ☐Air Monitors ☐Signage
Fall Prevention	☐Live Edges protected – Handrails, Barriers ☐Penetrations covered ☐ Work Platforms adequate ☐Appropriate Set up of Harness
Trips/ Slips/ Falls	☐Progressive Housekeeping ☐Bins in place/ emptied
Materials Handling	☐ No Stacked loads in unapproved areas ☐ Material stacked & secured ☐Manual Handling Principals followed
Environmental	☐ Air Quality ☐ Sediment Control ☐ Stockpile run off ☐Materials segregated ☐ DA Conditions
Electrical	☐RCD used ☐ Leads suspended and insulated
Other	Have the following audits been completed for this site? AUD001 YES ☐ - NO ☐ / AUD004 YES ☐ - NO ☐ / AUD006 YES ☐ - NO ☐ Have any identified financial threats to the site been controlled YES ☐ - NO ☐ (Refer to Action Register SEF024)
	Name of QSE person responsible for the site:

PRE-AUDIT ENVIRONMENT ASSESSMENT (SITE WALK) SEF 073

Site Name and Address:			
Site Manager:		**Sign:**	
Site Supervisor:		**Sign:**	
Attendance at time of assessment:		**Sign:**	
Assessor:		**Sign:**	
Assessment Date:			

	Corrective Action **Class A**: Immediate **|** **Class B**: Within 48 hours **|** **Class C** Within 7 days	**Complies**		**n/a**	**Class** **A | B | C**
		Yes	**No**		
Hazardous Materials & Other Substances					
1	Are fuel/oil tanks and drums stored inside a containment bund?				
2	Are hazardous chemicals, fuels, oils stored in the correct areas? (e.g. under cover, locked rooms, bunded containment, out of direct sunlight)				
3	Are all hazardous chemical containers clearly marked with the substance name?				
4	Is a MSDS available for hazardous substances and oils stored onsite? **SDS issue date must not exceed 5 years.**				
5	Has waste material (hazardous material) been identified, isolated and disposed of in accordance to EPA guidelines. (Applicable to demo sites) Reference – Environmental Protection Regulations				
6	Are there spill kits available in the immediate area to fuel and chemical storage locations?				
7	Does the site have an Emergency Action Evacuation Plan in place? (e.g. Emergency Contact List, fire extinguishers)				
8	Are Dangerous Goods stored in accordance to DG Segregation requirements? (Applicable to bulk storage)				

PRE-AUDIT ENVIRONMENT ASSESSMENT (SITE WALK) SEF 073

Site Documentation					
9	Is the Environmental Management Plan available and signed by all site personnel? (Including Sub Contractors)				
10	Has the Environmental Aspects and Impacts Assessment form been completed (SEF006)				
11	Does the site risk assessment identify environmental hazards in the HIRAC (SEF043)				
12	Is the Earth Disposal Record (or equivalent) form (QF011) completed (Civil)				
13	Has a Hazardous Substance register (SEF033) been completed for Hazardous Substances stored on site?				
14	Are the relevant SOP's available i.e. (SOP45)				
15	Is Asbestos Register (Part 6) report available on site (If applicable)				
16	Is an Asbestos Management Plan available? (plan must be provided by Asbestos Service Provider)				
Dust					
17	Is a vehicle exit spray wash established and functioning correctly? (if applicable)				
18	Are dust suppression controls implemented in accordance with SEF 006 and/or Dust Management Plan?				
19	Is work restricted on windy days when water spray dust suppression is not effective?				
20	Are workers wearing the correct PPE for the area they are working in?				
Noise & Vibration					
21	Have truck drivers been informed to avoid using engine brakes?				
22	Are noise walls and barriers installed wherever possible?				
23	Are noise restrictions being adhered to?				
24	Are employees being rotated if exposed to Vibration / Hammering tasks?				

PRE-AUDIT ENVIRONMENT ASSESSMENT (SITE WALK) SEF 073

Solid Waste					
25	Is site general waste managed according to the Waste Management Procedure?				
26	Are hazardous materials and unidentified waste being removed from site and transported in EPA approved trucks taken to EPA approved tips? (view evidence – dockets) (paints / oils / fuels etc)				
27	Are redundant Pressure Vessels / Oil-Fuel Tanks / Pits removed and made safe?				
28	Are contaminated stockpiled materials covered and signed posted adequately?				
Eco System					
29	Are all temporary and permanent drainage works and sediment control structures being maintained?				
30	Are stockpiles of recycled materials and waste piled away from drainage / storm water pits?				
31	Do storm water drains / pits have required protection? (geotech fabric, sandbags, hay bales)				
32	Is the site free of fluid leaks? (oil/coolant/fuel that come from a machine, vehicle, leaking barrels/drums)				
33	Are all geotech fabrics in good condition? (installed correctly, not torn or ripped)				
34	Are public road access areas maintained and kept clear from site debris / dust / mud? (Street sweeper)				

No. #	Person Responsible	Action Due Date	Action Closed Date

Site Manager Sign Off	
Name:	
Sign:	
Date:	
Ensure all subcontractors are complying with the environmental action assessment	

APPENDIX B - DELTA EMS CERTIFICATION

eQual assurance

CERTIFICATE OF CONFIDENCE

This is to certify that

Delta Pty Ltd

577 Plummer Street, Port Melbourne VIC 3207, Australia
15 Geelong Street, Fyshwick, Canberra ACT 2609, Australia
83 Bourke Road, Alexandria NSW 2015, Australia
Suite 1, Level 3, Commercial Building, 33 Remora Road, Hamilton QLD 4007, Australia
Unit 1, 32 Ledgar Road, Balcatta WA 6021, Australia
33 Port Road, Thebarton SA 5031, Australia

conforms to the requirements of

ISO 14001:2015
Environmental management systems

The provision of civil and building demolition works including removal of prescribed and toxic waste, asbestos removal, related civil construction including concreting, bulk earthworks and landscaping, and related project management and site supervision.

Certificate number:	DGPQ03-CCEE01	**Certified date:**	19 December 2013
Approval date:	10 August 2020	**Expiry date:**	5 August 2023

Robert Howell
DipMgt
Assurance Manager
Equal Assurance

ISO 14001 certified Equal Assurance

JAS-ANZ IAF

Equal Assurance Pty Ltd as trustee for The Equal Assurance Trust.
21/44 Kings Park Road, West Perth WA 6005, AUSTRALIA
Certificate validity and ownership as per arrangements between the client organization and Equal Assurance partner. Certificate status can be verified via the QR code or at https://qdos.equalassurance.com/certificates/DGPQ03. Equal Assurance partners are accredited by members of the International Accreditation Forum. Details at www.iaf.nu. This Certificate is accredited by Joint Accreditation System of Australia and New Zealand. Details at www.jas-anz.org.

APPENDIX C ENVIRONMENTAL PROCEDURES

PROCEDURE: EROSION AND SEDIMENT CONTROL

1. SCOPE

This document details the procedure for soil and water control during demolition as carried out by Delta Group.

The scope of this procedure applies to all demolition control aspects and to all Delta personnel and sub-contractors.

Erosion and sediment (ersed) controls relevant to each site will be implemented in accordance with The Blue Book (Managing Urban Stormwater Series (Landcom, 2008)). Soil and water will be managed in accordance with sound environmental practices to minimise erosion and to prevent sedimentation of artificial drainages or natural waterways.

In general, the selection of ersed controls will be based on site constraints and will be best for purpose in order to provide protection to the environment. The controls have been incorporated into the Environmental Control Maps (see Appendix E of the CEMP)

The ersed controls will generally be a combination of:

- Maintaining hardstand areas free from dirt and debris;
- Managing stockpiled of materials;
- Profiling drainage patterns to minimise potential runoff from site (sediment traps or diversion drains);
- Utilising the topography or existing constructed high points, such as concrete upstand walls;
- Installing sediment control devices such as:
    - coir logs or equivalent;
    - linear sedimentation fencing;
    - localised sandbags; and/or
    - fitting proprietary pollution drain guards (such as Gecko products) to outlet structures.

2. AUTHORITY

National QSE Manager

Approve this document; and
Review this document.

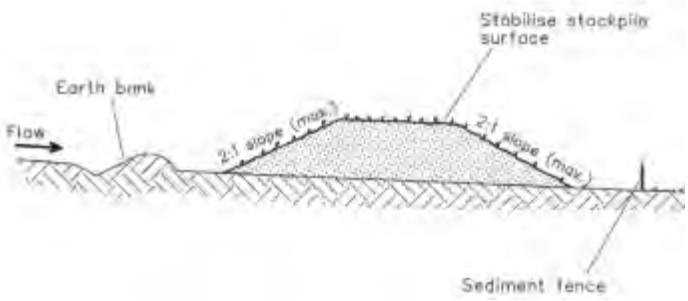
IMS Manager

Develop and assure compliance; and
Document Controller.

3. PLACEMENT AND MANAGEMENT OF STOCKPILES

Demolition material may need to be stockpiled temporarily while awaiting dispatch from a Delta site. All demolition stockpiles will be progressively removed from the site, and managed to minimise sedimentation and dust generation.

Any batters which are created will be cut at a minimum angle as to reduce the risk of slope failure and erosion. Where necessary control devices will be used to stabilise and control erosion and sedimentation generated from stockpiles.



4. SEDIMENT TRAPS

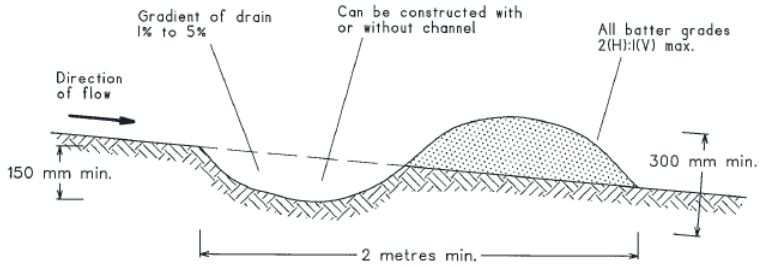
Sediment traps can be formed by excavating or constructing an earthen embankment across a waterway or low drainage area allowing settlement in a containment area of the water course. The remaining water can be discharged through a stabilized spill way (rock ballast).

5. COFFER DAMS

An enclosure may be constructed of an earth embankment within the surface runoff or water course to allow water to be displaced from the area to create a dry work zone.

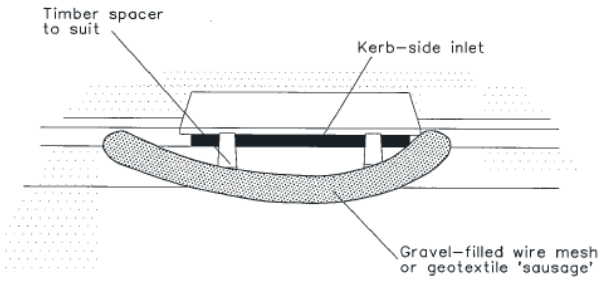
6. DIVERSION DRAINS

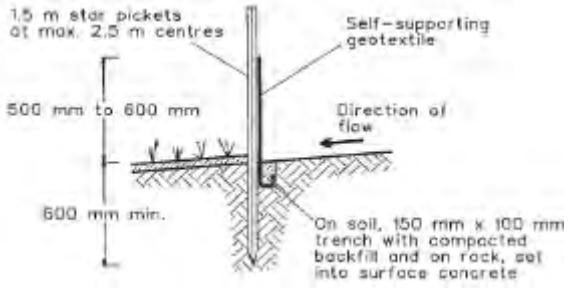
Diversion drains can be constructed to divert clean surface runoff away from site amenities and work areas, such as stockpiles and excavations. A typical low flow diversion is illustrated below, where the gradient is less than 5%.



7. SEDIMENT CONTROL DEVICES

Sediment controls, including filter rolls and sediment fences, may be required where erosion controls are not practical, and sediment must be captured to ensure it does not leave the site or enter the stormwater system. Sediment control devices will be installed in accordance with the Blue Book.





8. NO-GO AREAS

Areas where construction work is taking place will be blocked off to all vehicles including construction vehicles using bunting and barriers.

9. WASH DOWN AND RUMBLE GRIDS

Trucks wash down and / or cattle grate/ rumble strip may be utilized to minimised and avoid soil and dirt being transported out onto public roads by vehicle leaving the construction site.

10. SOIL AND WATER CONTROL MEASURES

Delta will:

- Carry out soil and water management in accordance with the Blue Book;
- Install and maintain erosion and sediment controls around stockpiles, where stockpiles are to remain on site for longer than five days;
- Position stockpiles within the Project boundary and away from any drainage areas or locations likely to receive run-off, wherever possible;
- Construct stockpiles to no more than 4m in height and battered to no steeper than 2:1 (H:V) as shown above, where space permits;
- Inspect and where necessary maintain sediment controls no more than five days following a significant rain event (i.e. greater than 20mm in 24 hours) and in accordance with the Blue Book;
- Ensure that any bales used onsite for sediment control are weed-free;
- Install sediment controls around stormwater inlet pits where appropriate and where they won't cause or exacerbate local flooding;
- Ensure that all vehicles leaving site are clear of excess sediment. Brushes and hoses will be provided at site gates, along with appropriate signage;
- Ensure that, where possible, truck loading circuits are stabilised to minimise the amount of sediment picked up on tyres;
- Conduct regular monitoring of vehicle egress points to check for tracking of material off the site;
- Ensure that vehicle loads are covered prior to the vehicle exiting the site;
- Ensure that hazardous substances are stored onsite in lockable containers and in their original receptacles only;
- Ensure that hazardous substances are clearly labelled with Safety Data Sheets affixed or available nearby;
- Ensure that hazardous substances that could result in a spill are stored and used away from drainage or stormwater lines and, wherever possible, within pre-defined bunded areas;
- Ensure that on site refuelling is undertaken in designated areas only and well away from drainage or stormwater lines; and
- Ensure that spills or leakages are immediately contained and absorbed.

PROCEDURE: PROPERTY MANAGEMENT

1. SCOPE

This document details the procedure for property management and maintenance during demolition as carried out by Delta Group. The scope of this procedure applies to all demolition control aspects and to all Delta personnel and sub-contractors.

Environmental Control Plans will be prepared for each specific stage or parcel of work prior to commencing works in consultation with demolition staff. Environmental Control Plans will be incorporated into the Site Establishment Management Plans and updated as required.

2. AUTHORITY

National QSE Manager

Approve this document; and
Review this document.

IMS Manager

Develop and assure compliance; and
Document Controller.

3. EFFECTIVE LIGHTING

Sufficient lighting will be installed where required, to ensure adequate illumination of the site. Lighting will be placed to reduce light spill outside the site, and directed to avoid impacting on neighbouring properties.

4. SITE VEGETATION

Vegetation in and around the site will be protected with a combination of barrier mesh or similar and will be communicated to site personnel as a no go zone.

5. ACCESS CONTROL SIGNAGE

Standardised warning signage will be employed by Delta at the site access and egress points and around the site perimeter to warn of construction site dangers and prohibit unauthorised access.

6. VANDALISM AND GRAFFITI

Delta will regularly inspect and maintain construction hoardings, scaffolding, and sheds. These will be kept clean and free of dust and dirt. Graffiti on construction hoardings, scaffolding, or buildings will be removed or painted over promptly.

Decayed physical elements of construction hoardings, scaffolding, and sheds will be removed or repaired as required.

7. TEMPORARY WORKS

The design of all temporary works will require approval from the Principal in relation to urban design and visual impacts. Delta will issue the design to Sydney Metro for approval prior to installation.

PROCEDURE: Unexpected Land and Asbestos Finds Procedure

1. SCOPE

This document has been prepared in accordance with MCoA D77 of the project approval (SSI 10038) and details the procedure for managing unexpected finds of contamination or asbestos during demolition as carried out by Delta Group. The scope of this procedure applies to all demolition control aspects and to all Delta personnel and sub-contractors.

This document describes the required management and controls of contaminated material in the context of waste handling from first identification onsite to removal to an appropriately licensed facility. This Procedure will be implemented for the duration of the Project as required under MCoA 078.

The scope of this Procedure does not include handling, monitoring and management measures to comply with Work Health and Safety legislation nor to provide management controls required to protect human safety or meet health and safety industry requirements. The management of the discovery, handling and removal of asbestos is the responsibility of the Occupational Hygienist under the direction of the Project Safety Team.

2. PURPOSE

The primary objective of this Procedure is to detail best practices for managing contaminated land discovered during construction. This Procedure describes a process to ensure that appropriate measures and controls are established and maintained to manage the discovery of contaminated land during construction of the Project.

There is the potential for previously unidentified contaminants to be uncovered during construction of the Project. Unexpected finds may include the discovery of hazardous materials, such as asbestos, Asbestos Containing Material (ACM), or contaminants that are not known to be occurring in that location.

For clarity, the detailed process for managing asbestos and ACM is outlined in the Delta IMS Procedure 37 Unexpected Find Procedure found in Attachment 1 to this project. A summary for managing

3. RESPONSIBILITIES

The management of the discovery, handling and removal of asbestos is the responsibility of the Occupational Hygienist with overview by the Safety Team.

The management of other (not asbestos) contaminants is the responsibility of the environment team insofar as the prevention of spread (within or off-site) and engagement of the contaminated lands consultant for the collection and interpretation of materials and waste classification data.

The Environmental Team are responsible for the tracking and ensuring appropriate disposal of all waste, including contaminated waste and asbestos, in accordance with the Project Waste Management Sub Plan.

The construction workers would be informed of the potential of finding contaminated materials during construction activities within site, as well as the content of this Unexpected Finds Procedure.

4. PROCEDURE

An unexpected find of contamination is triggered in the event of identification or disturbance of contamination including asbestos containing materials (ACM) in any area of works (excluding ACM identified through the pre-demolition hazardous materials surveys).

The process of disturbance of the existing ground or buildings in any location may result in the discovery of unexpected contamination, however the potential for contaminated land disturbance depends on a variety of factors including the location, nature, extent and magnitude of construction activities.

If contaminated land is discovered and not controlled appropriately there is potential for the contamination to impact soil, water and human health during construction, including:

- Contaminant exposure risk to construction personnel and the general public
- Contaminant exposure to environmental receptors
- Cross contamination associated with the incorrect handling or disposal of spoil/unexpected finds

- Contamination of previously uncontaminated areas

In order to ensure appropriate management, the process in the following Unexpected Find Process Flow diagram, which is adopted from the unexpected finds protocol section of the Sydney Metro Waste Classification Procedure (SM-20-00040677), will be implemented in the event of an unexpected find of potential contamination. The full procedure (SM-20-00040677) has been appended to the Waste Management Sub Plan.

An unexpected find may result in additional works being required for the remediation of contaminated materials which fall outside of Delta's current scope for the project. Any such works will comply will all relevant legislation and guidelines and will require appropriately qualified persons to prepare the methodology and controls. Any such works will require approval from the Principal.

Table 1 Unexpected finds procedure - general contamination (not asbestos)

Step	SM Process Ref.	Action	Responsibility		
			Other	Enviro	Safety
1	1 2 3	Immediately Stop work in the area potentially impacted by contaminated material as soon as it is safe to do so and delineate the area using fencing and/or appropriate barriers and signage to prevent further works. Implement minimum environmental controls to contain material (i.e., water diversion, dust, odour)	✓	✓	✓
2	4a	If the contaminant is an emergency and poses risk to health and/or environmental impacts. If so the Incident response procedure (Appendix H CEMP) will be triggered and further remediation work will occur in accordance with this Procedure.	✓	✓	✓
3	4b	Notify the Site Manager and Environmental and Sustainability Manager (EM) or delegate, who will notify Principals Representative (PR) and Environmental Representative (ER).	✓	✓	
4	4b	EM and/or Project Manager (PM) to contact Contaminated Land Specialist (external consultant) for sampling of material and further advice.	✓	✓	
5		The EM and/or PM will develop management options after guidance from the Contaminated Lands Specialist is received, in consideration of the type and level of contamination discovered and the proposed final land use.	✓	✓	
6		The Safety Manager (SM) will assess if works can recommence in alternate areas if safe and practicable to do so.			✓
7a	5a 6c	The removed contaminated material will be managed in accordance with the Waste and Spoil Management Plan developed as part of the CEMP. Contaminated material will be disposed of off-site in accordance with the Waste Management Plan at a licensed waste facility or as otherwise identified within the Waste and Spoil Management Plan. Notification to EPA will be undertaken where required in line with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).		✓	✓
7b	5b 6b	If the agreed scope for management will not result in complete removal of the contamination, the PR will be informed to ensure an alternative management plan is developed for any remaining contamination. Following implementation of agreed management, work can recommence after clearance from EM.		✓	

Table 2 Unexpected finds procedure - asbestos/ACM

Step	SM Process Ref.	Action	Responsibility		
			Other	Enviro	Safety
1	1 2 3	Immediately Stop work in the area potentially impacted by contaminated material as soon as it is safe to do so and delineate the area using fencing and/or appropriate barriers and signage to prevent further works. Implement minimum environmental controls to contain material (i.e., water diversion, dust, odour)	✓	✓	✓
2	4a	If the contaminant is an emergency and poses risk to health and/or environmental impacts. If so the Incident response procedure (Appendix H CEMP) will be triggered and further remediation work will occur in accordance with this Procedure.	✓	✓	✓
3	4b	Notify the Site Manager and Environmental and Sustainability Manager (EM) or delegate, who will notify Principals Representative (PR) and Environmental Representative (ER).	✓	✓	
4	4b	EM and/or Project Manager (PM) to contact Contaminated Land Specialist (external consultant) for sampling of material and further advice.	✓	✓	
5		On confirmation of actual asbestos or ACM that requires removal for the continuation of work, install appropriate signage warning that the area is undertaking asbestos removal in accordance with the SafeWork NSW: Code of Practice: How to safely remove asbestos (August 2019)			✓
6		The Safety Manager (SM) will assess if works can recommence in alternate areas if safe and practicable to do so.			✓
7a	5a 6c	The removed contaminated material will be managed in accordance with the Waste and Spoil Management Plan developed as part of the CEMP. Contaminated material will be disposed of off-site in accordance with the Waste Management Plan at a licensed waste facility or as otherwise identified within the Waste and Spoil Management Plan. Notification to EPA will be undertaken where required in line with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).		✓	✓
7b	5b 6b	If the agreed scope for management will not result in complete removal of the contamination, the PR will be informed to ensure an alternative management plan is developed for any remaining contamination. Following implementation of agreed management, work can recommence after clearance from EM.		✓	

5. WASTE MANAGEMENT

All waste associated with unexpected finds will be management in accordance with the Waste Management Sub Plan, with all waste:

- Appropriately segregated and stored;
- Classified in accordance with the NSW EPA Waste Classification Guidelines (2014);
- Tracked by the Project and evidence of receipt at an appropriately licensed waste facility.

6. External Reporting

Sydney Metro would be informed immediately when encountering of a potential or actual contaminant which may require a Duty to Report. In the case of an unexpected find triggering the process described in Table 1 and Table 2, notification and reporting to authorities such as the EPA and Environmental Representative (ER) will be undertaken by the Environmental and Sustainability Manager or delegate in accordance with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).

In the event of an environmental incident, the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure will be implemented. The full procedure is provided in Appendix H of the CEMP.

Under section 148 of the POEO Act, anyone causing a pollution incident are required to report the incident 'immediately' to the relevant authorities. 'Immediately' is defined as promptly and without delay, after the person becomes aware of the incident.

Attachment 1 - Delta IMS Procedure 37 Unexpected Find Procedure

PROCEDURE: Unexpected Contaminated Land and Asbestos Finds Procedure

1. SCOPE

This document has been prepared in accordance with MCoA D77 of the project approval (SSI 10038) and details the procedure for managing unexpected finds of contamination or asbestos during demolition as carried out by Delta Group. The scope of this procedure applies to all demolition control aspects and to all Delta personnel and sub-contractors.

This document describes the required management and controls of contaminated material in the context of waste handling from first identification onsite to removal to an appropriately licensed facility. This Procedure will be implemented for the duration of the Project as required under MCoA 078.

The scope of this Procedure does not include handling, monitoring and management measures to comply with Work Health and Safety legislation nor to provide management controls required to protect human safety or meet health and safety industry requirements. The management of the discovery, handling and removal of asbestos is the responsibility of the Occupational Hygienist under the direction of the Project Safety Team.

2. PURPOSE

The primary objective of this Procedure is to detail best practices for managing contaminated land discovered during construction. This Procedure describes a process to ensure that appropriate measures and controls are established and maintained to manage the discovery of contaminated land during construction of the Project.

There is the potential for previously unidentified contaminants to be uncovered during construction of the Project. Unexpected finds may include the discovery of hazardous materials, such as asbestos, Asbestos Containing Material (ACM), or contaminants that are not known to be occurring in that location.

For clarity, the detailed process for managing asbestos and ACM is outlined in the Delta IMS Procedure 37 Unexpected Find Procedure found in Attachment 1 to this project. A summary for managing

3. RESPONSIBILITIES

The management of the discovery, handling and removal of asbestos is the responsibility of the Occupational Hygienist with overview by the Safety Team.

The management of other (not asbestos) contaminants is the responsibility of the environment team insofar as the prevention of spread (within or off-site) and engagement of the contaminated lands consultant for the collection and interpretation of materials and waste classification data.

The Environmental Team are responsible for the tracking and ensuring appropriate disposal of all waste, including contaminated waste and asbestos, in accordance with the Project Waste Management Sub Plan.

The construction workers would be informed of the potential of finding contaminated materials during construction activities within site, as well as the content of this Unexpected Finds Procedure.

4. PROCEDURE

An unexpected find of contamination is triggered in the event of identification or disturbance of contamination including asbestos containing materials (ACM) in any area of works (excluding ACM identified through the pre-demolition hazardous materials surveys).

The process of disturbance of the existing ground or buildings in any location may result in the discovery of unexpected contamination, however the potential for contaminated land disturbance depends on a variety of factors including the location, nature, extent and magnitude of construction activities.

If contaminated land is discovered and not controlled appropriately there is potential for the contamination to impact soil, water and human health during construction, including:

- Contaminant exposure risk to construction personnel and the general public
- Contaminant exposure to environmental receptors
- Cross contamination associated with the incorrect handling or disposal of spoil/unexpected finds
- Contamination of previously uncontaminated areas

In order to ensure appropriate management, the process in the following Unexpected Find Process Flow diagram, which is adopted from the unexpected finds protocol section of the Sydney Metro Waste Classification Procedure (SM-20-00040677), will be implemented in the event of an unexpected find of potential contamination. The full procedure (SM-20-00040677) has been appended to the Waste Management Sub Plan.

An unexpected find may result in additional works being required for the remediation of contaminated materials which fall outside of Delta's current scope for the project. Any such works will comply will all relevant legislation and guidelines and will require appropriately qualified persons to prepare the methodology and controls. Any such works will require approval from the Principal.

Table 1 Unexpected finds procedure - general contamination (not asbestos)

Step	SM Process Ref.	Action	Responsibility		
			Other	Enviro	Safety
1	1 2 3	Immediately Stop work in the area potentially impacted by contaminated material as soon as it is safe to do so and delineate the area using fencing and/or appropriate barriers and signage to prevent further works. Implement minimum environmental controls to contain material (i.e., water diversion, dust, odour)	✓	✓	✓
2	4a	If the contaminant is an emergency and poses risk to health and/or environmental impacts. If so the Incident response procedure (Appendix H CEMP) will be triggered and further remediation work will occur in accordance with this Procedure.	✓	✓	✓
3	4b	Notify the Site Manager and Environmental and Sustainability Manager (EM) or delegate, who will notify Principals Representative (PR) and Environmental Representative (ER).	✓	✓	
4	4b	EM and/or Project Manager (PM) to contact Occupational Hygienist/Hazmat Consultant or Contaminated Land Specialist (external consultant) as required for sampling of material and further advice.	✓	✓	
5		The EM and/or PM will develop management options after guidance from the Occupational Hygienist/Hazmat Consultant or Contaminated Lands Specialist is received, in consideration of the type and level of contamination discovered and the proposed final land use.	✓	✓	
6		The Safety Manager (SM) will assess if works can recommence in alternate areas if safe and practicable to do so.			✓
7a	5a 6c	The removed contaminated material will be managed in accordance with the Waste Management Sub Plan developed as part of the CEMP. Contaminated material will be disposed of off-site in accordance with the Waste Management Plan at a licensed waste facility or as otherwise identified within the Waste Management Sub Plan. Notification to EPA will be undertaken where required in line with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).		✓	✓
7b	5b 6b	If the agreed scope for management will not result in complete removal of the contamination, the PR will be informed to ensure an alternative management plan is developed for any remaining contamination. Following implementation of agreed management, work can recommence after clearance from EM.		✓	

Table 2 Unexpected finds procedure - asbestos/ACM

Step	SM Process Ref.	Action	Responsibility		
			Other	Enviro	Safety
1	1 2 3	Immediately Stop work in the area potentially impacted by contaminated material as soon as it is safe to do so and delineate the area using fencing and/or appropriate barriers and signage to prevent further works. Implement minimum environmental controls to contain material (i.e., water diversion, dust, odour)	✓	✓	✓
2	4a	If the contaminant is an emergency and poses risk to health and/or environmental impacts. If so the Incident response procedure (Appendix H CEMP) will be triggered and further remediation work will occur in accordance with this Procedure.	✓	✓	✓
3	4b	Notify the Site Manager and Environmental and Sustainability Manager (EM) or delegate, who will notify Principals Representative (PR) and Environmental Representative (ER).	✓	✓	
4	4b	EM and/or Project Manager (PM) to contact Occupational Hygienist/Hazmat Consultant or Contaminated Land Specialist (external consultant) as required for sampling of material and further advice.	✓	✓	
5		The EM and/or PM will develop management options after guidance from the Occupational Hygienist/Hazmat Consultant or Contaminated Lands Specialist is received, in consideration of the type and level of contamination discovered and the proposed final land use.	✓	✓	
6		On confirmation of actual asbestos or ACM that requires removal for the continuation of work, install appropriate signage warning that the area is undertaking asbestos removal in accordance with the SafeWork NSW: Code of Practice: How to safely remove asbestos (August 2019) [Safework NSW asbestos removal notification to be lodged and approved prior to removal]			✓
7		The Safety Manager (SM) will assess if works can recommence in alternate areas if safe and practicable to do so.			✓
8a	5a 6c	An Asbestos Removal Control Plan (ARCP) is required to be completed in accordance with Work Health and Safety Regulation 2017 (Regulation 464). The ARCP will be developed prior to undertaking any asbestos removal works. The aim of the plan is to outline the specific methods and processes that will be used to ensure the removal is safe and effective. The removed contaminated material will be managed in accordance with the Waste Management Sub Plan developed as part of the CEMP. Contaminated material will be disposed of off-site in accordance with the Waste Management Plan at a licensed waste facility or as otherwise identified within the Waste Management Sub Plan. Notification to EPA will be undertaken where required in line with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).		✓	✓

Step	SM Process Ref.	Action	Responsibility		
			Other	Enviro	Safety
8b	5b 6b	Asbestos removal will be undertaken by suitably qualified personnel and/ or subcontractors who are licensed by SafeWork NSW. Following removal of asbestos / ACM, the licensed asbestos removalist will arrange for a clearance inspection of the area to facilitate the issue of a clearance certificate and allow construction to recommence in the affected area in accordance with Work Health and Safety Regulation 2017 (Regulation 474) If the agreed scope for management will not result in complete removal of the contamination, the PR will be informed to ensure an alternative management plan is developed for any remaining contamination. Following implementation of agreed management, work can recommence after clearance from EM.		✓	

5. WASTE MANAGEMENT

All waste associated with unexpected finds will be management in accordance with the Waste Management Sub Plan, with all waste:

- Appropriately segregated and stored;
- Classified in accordance with the NSW EPA Waste Classification Guidelines (2014);
- Tracked by the Project and evidence of receipt at an appropriately licensed waste facility.

6. External Reporting

Sydney Metro would be informed immediately when encountering of a potential or actual contaminant which may require a Duty to Report. In the case of an unexpected find triggering the process described in Table 1 and Table 2, notification and reporting to authorities such as the EPA and Environmental Representative (ER) will be undertaken by the Environmental and Sustainability Manager or delegate in accordance with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).

In the event of an environmental incident, the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure will be implemented. The full procedure is provided in Appendix H of the CEMP.

Under section 148 of the POEO Act, anyone causing a pollution incident are required to report the incident 'immediately' to the relevant authorities. 'Immediately' is defined as promptly and without delay, after the person becomes aware of the incident.

6.1. Community Notification

Section 6 of the Overarching Community Communication Strategy outlines the communication tools and guidelines for emergency works associated with unexpected finds procedure. Community notification for unexpected finds will be undertaken in consultation with relevant stakeholders and Sydney Metro communication team. If required, crisis communication management system outlined in section 8.20 Crisis or incident communications in the OCCS will be implemented.

This may involve communication tools such as (but not limited to):

- Site signage and visual mitigations for exclusion zone requirement around site if applicable.
- Display of asbestos removal works in progress signs around site
- Community notification such as letterbox drop and etc if required

Attachment 1 - Delta IMS Procedure 37 Unexpected Find Procedure

PROCEDURE: UNEXPECTED FIND PROCEDURE

1. SCOPE

This procedure is to provide advice to an unidentified and unexpected (situation) find/s in the workplace, to ensure that unexpected finds (e.g. asbestos) are controlled and managed so as to prevent harmful effects to personnel from short-term irritation to long-term health effects.

2. KEY REQUIREMENTS

This procedure shall apply to all operations performed on Demolition/Civil sites where Deltahas responsibility for unexpected finds.

3. DEFINITIONS

Asbestos-related	Any material, object, product or debris that contains asbestos.
Foreman - Supervisor Project manager	Also means contractor and sub-contractor
Asbestos Removal	Asbestos removal work requires the appointment of a Principal Contractor. Asbestos removal work is a high-risk construction activity.
Asbestos Material Report	A report by an appropriately qualified person which states: • Where and what the types of materials that were found; • The form of the materials. • The condition of the material (i.e. friable, poorly bonded, unstable). • The potential health risks to building occupants.
Asbestos Register	A register that must be kept by the owner of the building and which must: • Contain information, including any changes/updates, from the Asbestos Material Report. • Be available for inspection by any person requiring inspection. • Be available to all maintenance/building contractors. • Be available to any contractors.
Bonded ACM (B class)	When asbestos fibers are bonded in another material, such as cement or resin binder,it is known as bonded ACM. Bonded ACM cannot be crumbled, pulverised or reduced to a powder by hand pressure when dry. Asbestos cement (AC) sheeting is the most common form of bonded ACM in buildings.
Friable ACM (A class)	Some materials containing asbestos are potentially more hazardous than others. These materials are described as friable which means they crumble easily and have the potential to release asbestos fibres into the air. When dry, friable ACM can be crumbled, pulverised or reduced to powder by hand pressure. It is this friability that releases asbestos fibers into the atmosphere and increases the risk of exposure. For example, sprayed-on fireproofing is considered a friable ACM as it is very easily crumbled to a powder.
Competent person	A competent person is a person who possesses adequate qualifications, such as suitable training and sufficient knowledge, experience or skill, to perform a specific task safely.
Unidentified and or Unexpected find	A sudden unexpected event, (unidentified material) including work required by non-routine failures of equipment, that may result in persons being exposed to unidentified or hazardous materials including airborne asbestos fibres. Unexpected also means unidentified and vice versa

4. AUTHORITY

National QSE Manager

- Approve this procedure
- Oversee this procedure

5. UNEXPECTED (ASBESTOS) FIND

Subject	Action Steps	Responsible
Procedural steps to follow when an unexpected find occurs	In an unexpected situation, the demolisher must cease work in the immediate vicinity of the unexpected find and report their findings to their supervisor. The unexpected find area should be barricaded off until the unexpected find sample can be verified. Turn off fans and air-conditioners and seal ducts and vents to prevent the spread of any dust, use water spray to dampen the unexpected find clothing considered affected by airborne particles should remove their outer clothing and place clothing in a 200-micron thick plastic bag marked asbestos waste, the bag should be goose-neck wrapped for disposal to an asbestos approved collection site. An employer or self-employed person must not remove from a workplace protective clothing contaminated with asbestos unless the clothing is— (a) disposed of— (i) as soon as is reasonably practicable; and (ii) in an appropriate manner that eliminates the release of airborneasbestos fibres; and (iii) at a waste disposal site licensed by the Environment ProtectionAuthority; or (b) laundered at a commercial laundry and for that purpose the clothingis contained so as to eliminate the release of airborne asbestos fibres and the exterior of the container— (i) is decontaminated before being removed from the work area; and (ii) indicates the presence of asbestos before the clothing is transferredto the laundry. Sampling should be arranged for a competent person to take a sample of the material and have it analysed by a National Association of Testing Authorities (NATA) accredited laboratory.	Project Manager
Procedural steps to follow when an unexpected find occurs, continued	In an unexpected find situation, the contractor involved in the work must not later than 24 hours after identifying the asbestos removal work, notify the Authority of the unexpected find. A notification must be in writing and include the information below: 1. The name, registered business name, Australian Business Number,licence number and contact details of the licence holder. 2. The name of the supervisor who will oversee the asbestos removalwork and the supervisor's contact details. 3. The client name and contact details. 4. The name, including registered business or corporate name, and address of the workplace and type of workplace where the asbestos removal work will be performed including the specific location if it is a large workplace. 5. The date of notification.	Project Manager Operations Manager

Subject	Action Steps	Responsible
Procedural steps to follow when an unexpected find occurs, continued	6. The commencement date and estimated duration of the asbestosremoval work. 7. Whether the asbestos is friable asbestos-containing material or non-friable asbestos-containing material. 8. If friable asbestos-containing material is to be removed, details of the way that the area where the asbestos removal work is to be performed will be enclosed. 9. The type of asbestos-containing material. 10. The estimated quantity of asbestos to be removed. 11. The number of employees who will perform the asbestos removalwork. 12. Details of training and experience of those individual employees, ifdifferent to the information notified previously. 13. The date of any asbestos register or employer's asbestos register used to prepare the asbestos control plan. The Authority may vary the notification requirements by including a specific condition in a licence with respect to the notification. Additionally, the Project Manager and the Operations Manager must inform the National QSE Manager	Project Manager Operations Manager
Limited asbestos removal work without licence permitted	An employer or self-employed person may perform asbestos removal work in relation to non-friable asbestos-containing material if— (a) the area of asbestos-containing material to be removed does notexceed 10 square metres in total; and (b) the total time over which asbestos removal work is performed in any period of 7 days does not exceed 1 hour.	Project Manager
Duty to inform	An employer at a workplace must, before asbestos removal work commences at the workplace, inform employees in the immediate and adjacent areas of the workplace of the proposed removal work.	Project Manager
Identification of asbestos-related activities	An employer must identify whether an asbestos-related activity is being carried out at the employer's workplace.	Project Manager
Uncertainty as to presence of asbestos	If there is uncertainty (based on reasonable grounds) as to whether an activity is an asbestos-related activity, the employer must— • assume that asbestos is present; or • arrange for analysis of a sample to be undertaken	Project Manager
Asbestos register must be obtained	If any asbestos-related activities are carried out at an employer's workplace, the employer must obtain— • a copy of the asbestos register in relation to the activities; or • if there are other employers at the workplace where the activities are carried out, a copy of the employer's asbestos register of each of those other employers The relevant asbestos-related activities are: • research involving asbestos • sampling or analysis involving suspected asbestos • the enclosing or sealing of asbestos • hand drilling and cutting of asbestos-containing material	Project Manager

Subject	Action Steps	Responsible
	• any other activity that is likely to produce airborne asbestos fibres • any other activity determined by the Authority	
Specific measures to control risk	1. An employer must ensure that any risk associated with an asbestos-related activity is eliminated so far as is reasonably practicable. 2. If it is not reasonably practicable to eliminate a risk associated with an asbestos-related activity, an employer must ensure that the risk is reduced so far as is reasonably practicable by— • isolation; or • using engineering controls; or • combination of both 3. If an employer has complied with the (1) and (2) so far as is reasonably practicable and a risk associated with an asbestos-related activity remains, the employer must, so far as is reasonably practicable, use administrative controls to reduce the risk. 4. If an employer has complied with (1), (2) and (3) so far as is reasonably practicable and a risk associated with an asbestos-related activity remains, the employer must reduce the risk by providing personal protective equipment to employees at risk.	Project Manager
Specific measures to control risk, continued	5. If an employer provides personal protective equipment under measurement (4), the employer must ensure that— • the person carrying out the asbestos-related activity is provided with— o appropriate personal protective clothing that is suitable for the activity being carried out o appropriate respiratory protective equipment that issuitable for the activity being carried out; and • the clothing and equipment provided are correctly fitted	Project Manager
Review of risk control measures	An employer must ensure that any measures implemented to control a risk associated with an asbestos-related activity are reviewed and, if necessary, revised: a) before any alteration is made to systems of work related to the activity that is likely to result in any increased risk to health or safety; or b) after any incident occurs that involves an asbestos-related activity; or c) if, for any other reason, the risk control measures do not adequately control the risks; or d) after receiving a request from a health and safety representative A health and safety representative may make a request if the health and safety representative believes on reasonable grounds that— • any of the circumstances above (a, b, and c) exists; or • the employer has failed— o to properly review risk control measures o to take account of any of the circumstances above (a, b, c) in conducting a review of, or revising, the risk control measures	Project Manager
Work area to be separate and signed	An employer must ensure that the work area used for an asbestos-related activity— • is kept separate from any other work area • so far as is reasonably possible, has appropriately placed signs and barricades that indicate the area where the activity is being carried out	Project Manager

Subject	Action Steps	Responsible
Work area to be kept clean	An employer must, so far as is reasonably practicable, ensure that the work area used for an asbestos-related activity is kept clean. An employer must ensure that the methods used to clean the work area— • do not create a risk to health • do not have the potential to spread airborne asbestos fibres beyondthe work area	Foreman Supervisor Project Manager
Medical examinations Medical examinations, continued	Following exposure to an unexpected find and before arranging a medical examination Delta will await the hygienist report results of the substance. If asbestos is confirmed the employer then has 30 days to arrange an appropriate medical examination to be conducted by a registered medical practitioner for each employee who is considered to have been exposed to ACM dust (airborne particulate) and or, employees engaged in ongoing asbestos-related activities if there is a risk of exposure to airborne asbestos fibres above one half of the asbestos exposure standard. Direction for this task is administered through the National QSE Manager. The purpose of the medical examination is to monitor the employee's health for the purpose of identifying changes in the employee's health status to occupational exposure to asbestos due to an unexpected find (or other). Respiratory protective equipment must not be considered in establishing whether there is a risk of exposure to airborne asbestos fibres above one half of the asbestos exposure standard. An employer must ensure that atmospheric monitoring at the workplace is provided if there is uncertainty (based on reasonable grounds) as to whether a medical examination may be required under this Division. An employer must ensure that medical examinations are provided to an employee— • at intervals of not more than 2 years • within 30 days after the employee has ceased an asbestos-related activity (unexpected find), unless the employee has had a medical examination within the preceding year The duties of an employer in relation to medical examinations extend to an independent contractor.	QSE Supervisor Project Manager
Results of atmospheric monitoring to be made available	An employer must ensure that copies of the results of atmospheric monitoring are accessible to the health and safety representative of any affected designated work group and to the affected employees.	Supervisor Project manager
Notice of medical practitioner	The employer must notify the Authority in writing within 7 days of the name and contact details of the registered medical practitioner the employer has engaged to undertake medical examinations.	Supervisor Project manager
Exposure to asbestos	Details of persons exposed to asbestos at the workplace will be registered with the Australian Government Asbestos Safety and Eradication Agency http://www.asbestossafety.gov.au/	RTW Coordinator
Results of medical examination	An employer must ensure that a summary of results of a medical examination indicating whether an asbestos-related disease exists and the employee's fitness for asbestos-related activities is provided to the employer by the registered medical practitioner. The employer must retain a copy of the summary of results: • a period (not exceeding 30 years) determined by the Authority	Supervisor Project manager

Subject	Action Steps	Responsible
	• if no period has been determined by the Authority, 30 years	
Decontamination facilities Decontamination facilities, continued	An employer carrying out an asbestos-related activity must ensure that a person does not remove personal protective clothing or personal protective equipment that is likely to be contaminated with asbestos from the work areaused for the asbestos-related activity unless the clothing or equipment is decontaminated or contained before its removal. An employer carrying out an asbestos-related activity must ensure that any equipment (other than personal protective equipment) that is used for the asbestos-related activity and that is likely to be contaminated with asbestos is— • decontaminated before removal from the work area used for the asbestos-related activity • placed in a sealed container, the exterior of which is decontaminated before the container is removed from the work area used for the asbestos-related activity	Supervisor Project manager
Waste containment	An employer carrying out an asbestos-related activity must ensure that— • any asbestos derived from or associated with the activity, and that is no longer required in connection with the activity, is contained so as to eliminate the release of airborne asbestos fibres • the exterior of the container— o is decontaminated before being removed from the work area used for the activity o indicates the presence of asbestos	Foreman Supervisor Project manager
Disposal of asbestos waste	An employer carrying out an asbestos-related activity must ensure that asbestos waste is— • disposed of as soon as is reasonably practicable • disposed of in an appropriate manner that eliminates the release of airborne asbestos fibres • disposed of at a waste disposal site licensed by the Environment Protection Authority	Foreman Supervisor Project manager
Laundering of clothing contaminated with asbestos	An employer carrying out an asbestos-related activity must provide for the laundering of personal protective clothing that is used for an asbestos-related activity and that is likely to be contaminated with asbestos and that is not contained and disposed. If the employer arranges for personal protective clothing that is likely to be contaminated with asbestos to be laundered at a commercial laundry, the employer must ensure that— • the clothing is contained so as to eliminate the release of airborne asbestos fibres; and • the exterior of the container— o is decontaminated before being removed from the work area; and o indicates the presence of asbestos before the clothing is transferred to the laundry	Project manager
Provision of information to job applicants	An employer must provide each applicant who applies for employment with the employer to carry out an asbestos-related activity with information about the nature of the hazard and the risks associated with exposure to airborne asbestos fibres.	Project Manager

Subject	Action Steps	Responsible
Training record	An employer must make a record of training provided in relation to carrying out asbestos-related activities and retain that record for so long as it is applicable	QSE Manager Project Manager

6. NOTIFICATION

A sudden, unexpected find, including work required by non-routine failures of equipment,that may result in persons being exposed to airborne asbestos fibres; or
an unexpected breakdown of an essential service (including gas, water, sewerage, electricityand telecommunications) that requires immediate rectification to enable continuance of that service. In an unexpected situation, the asbestos licence holder must, not later than 24 hours after commencing asbestos removal work, notify the Authority of the removal work inaccordance with legislation.

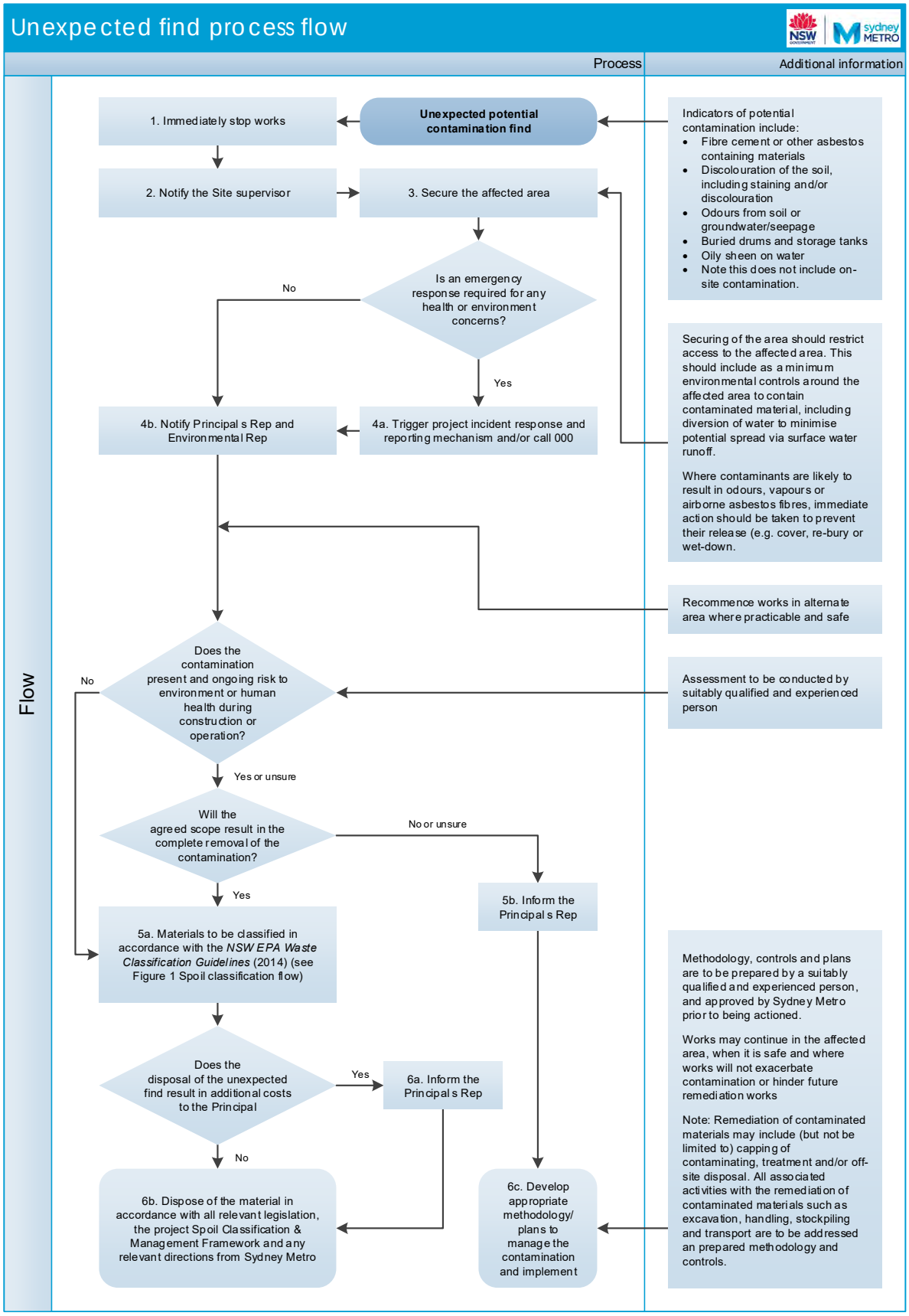
7. WILDLIFE

Subject	Action Steps	Responsible
Wildlife and Protected species	**Kangaroo:** If the kangaroo approaches, turn your body sideways, exposing a narrow profile to the animal and protecting your face and organs. Raise your hands and lean your head away from the animal to minimize the chances of being scratched across the face by the kangaroo's nasty claws. Retreat, but do not turn your back and run. **Snake:** If you discover a snake, do not approach it closely. If you step on a snake or are very close to a snake then move away quickly. If the snake is onlyabout a meter away, freeze at first and see the snakes' reaction - it will likely look for an escape route. If it is cornered, back away slowly. **Bats:** Do not be alarmed. Like most wild animals, bats are shy. You are advised to leave bats alone. They will fly away after they have done feeding. As bats are drawn to fruit trees such as Chiku (Manilkara zapota), especially when they are fruiting, residents are advised to harvest the fruits within their premises. Bats are shy and will usually not attack humans unless they feel threatened or are attacked. You are advised to leave bats alone, they will usually fly off after feeding. To discourage bats from visiting your property, install bright outdoor lights as they prefer dark places. **Fox:** If you encounter a fox or dingo who does not immediately run away, make some noise. Yell, clap your hands, wave your arms, stomp your feet—make your presence felt, but do not approach or chase the animal. **Bull:** Use your common sense and instincts when handling or walking in a pasture with a bull in it, to avoid getting charged at the bull, do not instigate him nor tease him. Climb the nearest tree if you can, if you are or end up in a treed area, try to keep a large tree between you and the bull and stay close to the fence. **Pigeons:** Pigeons are a problem because their droppings stain buildings and public amenities. They can also spread diseases to humans. In some areas, you can be fined for feeding pigeons. If you have a problem with pigeons in your neighbourhood or home, contact your town council or estate manager. You can also hire a pest control company.	Project Management Team

8. REFERENCE

- OHS/OSH/WHS Act - OHS/OSH/WHS Regulations
- Australian Standard 1319: 1994 Safety Signs for the Occupational Environment Australia/New Zealand Standard 1715: 1994 Selection Use and Maintenance of RespiratoryProtective Devices
- Australia/New Zealand Standard 1716: 2003 Respiratory Protective Devices
- Australian Standard 3544: 1988 Industrial Vacuum Cleaners for Particulates Hazardous toHealth
- Australian Standard 4260: 1997 High Efficiency Particulate Air (HEPA) Filters – Classification,Construction and Performance
- WorkSafe Australia - Code of Practice for the Safe Removal of Asbestos NOHSC: 2002 (2005).
  WorkSafe Australia - Code of practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)] AS 2601-2001 Demolition of Structures
- Environmental Protection Act
  Environmental Protection
  RegulationsPlanning and
  Development Act
- Public Health Act
- Managing Asbestos in Workplaces Compliance Code (VWA)
  Removing Asbestos in Workplaces Compliance Code (VWA)
  Coveralls used for Asbestos Removal (VWA)
- Asbestos-A Handbook for Workplaces (VWA)
  Asbestos Removal Application Package (VWA)
  Notification of Asbestos Removal (VWA)
- COP for the safe removal of asbestos (NOHSC)
- COP for the management & control of asbestos in workplaces (NOHSC)
  COP How to safely remove asbestos in the workplace (QLD)
- COP How to safely remove asbestos (NSW)
- COP How to manage and control asbestos in the workplace (SA)

Attachment 2 – Unexpected Find Process Flow (excerpt from Sydney Metro IMS Waste Classification Procedure (SM-20-00040677))



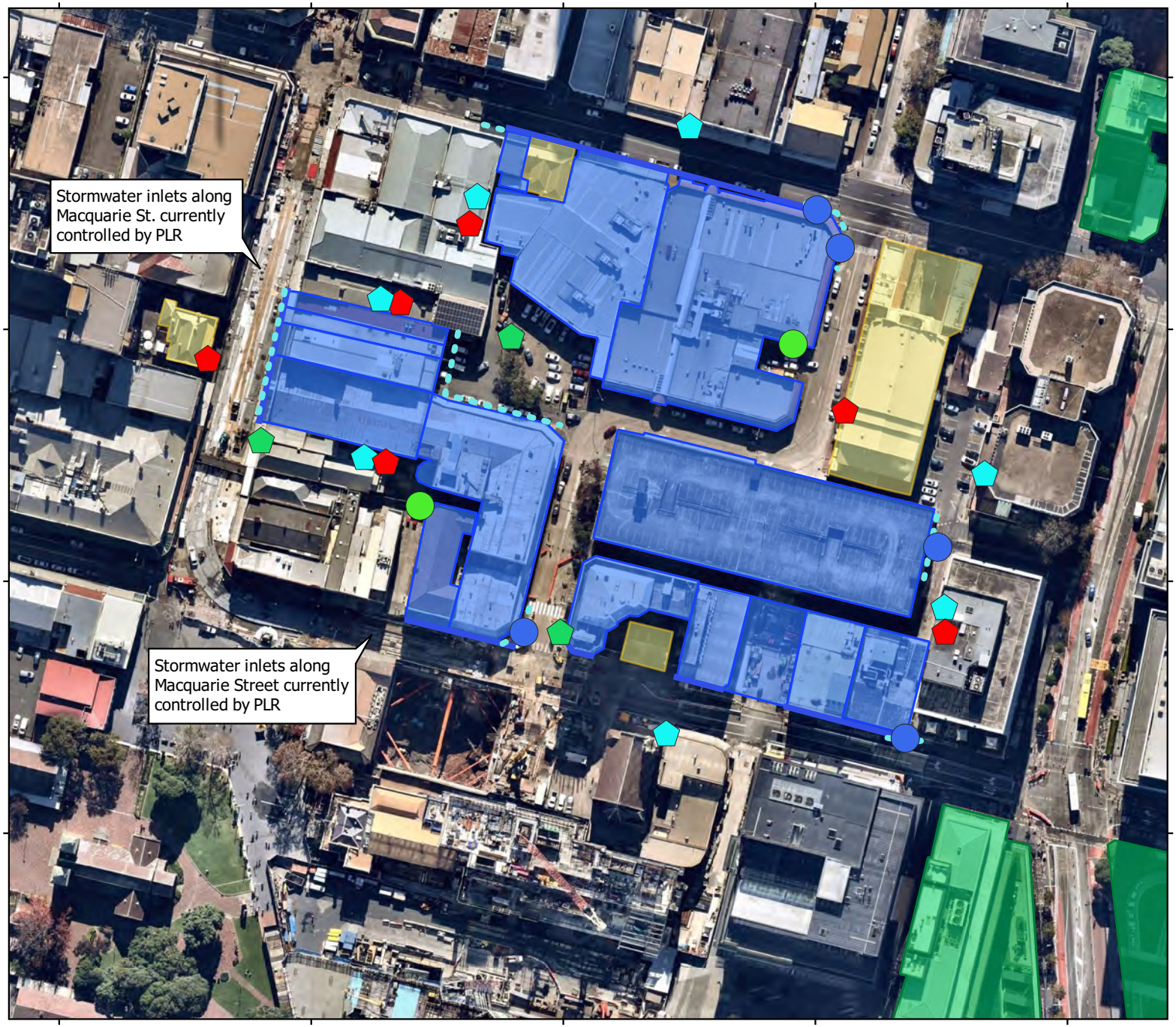
APPENDIX D ENVIRONMENTAL RISK ASSESMENT

Potential Environmental Hazard	Uncontrolled			Where Key Environmental Controls are Addressed	Residual		
	Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Construction traffic and transport							
•Diversions of pedestrians and cyclists. •Reduced pedestrian and cyclist access or flows. •Pedestrian and cyclist safety.	L3	C4	Medium	Section 11 Construction Traffic Management	L4	C5	Low
•Deterioration of traffic performance on surrounding road network due to construction vehicles. •Loss of parking spaces or loading zones. •Impacts on access to private property.	L3	C5	Medium	Section 11 Construction Traffic Management	L4	C4	Medium
•Altered access to businesses during demolition. •Impacts on businesses during demolition (due to loss of amenity).	L3	C3	High	Section 11 Construction Traffic Management	L4	C4	Medium
•Increased trade for food and beverage during demolition.	Positive outcome						
Construction noise and vibration							
•Unacceptable airborne noise impacts from demolition during standard construction hours.	L2	C2	Very High	Section 12 Construction Noise and Vibration Management	L3	C3	High
•Vibration from surface works exceeds human comfort or damage levels.	L2	C2	Very High	Section 12 Construction Noise and Vibration Management	L3	C4	Medium
Non-aboriginal heritage							
•Impacts on unidentified heritage items during demolition.	L4	C2	High	Section 13 Heritage Management	L4	C3	Medium
•Impacts on identified heritage items during salvage.	L4	C2	High	Section 13 Heritage Management	L4	C4	Medium
Aboriginal heritage							
•Impacts on unidentified Aboriginal heritage items during trenching.	L4	C2	High	Section 13 Heritage Management	L5	C2	Medium
Landscape character and visual amenity							
•Adverse visual impacts due to the presence of demolition activities and compounds.	L3	C3	High	Section 7.6 Urban Design of Temporary Works	L4	C4	Medium

Potential Environmental Hazard	Uncontrolled			Where Key Environmental Controls are Addressed	Residual		
	Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Soils, contamination, and water quality							
•Erosion of soils resulting in offsite sedimentation during demolition and trenching.	L3	C3	High	Section 16 Soil and Water	L4	C4	Medium
•Contamination of groundwater due to spills and leaks during demolition and trenching. •Contamination of land due to spills and leaks during demolition and trenching.	L3	C3	High	Section 16 Soil and Water	L4	C4	Medium
•Water quality impacts on nearby watercourses due to runoff from the project site resulting in sedimentation to waterways during demolition and trenching. •Water quality impacts on nearby watercourses due to contamination or spills.	L3	C3	High	Section 16 Soil and Water	L4	C4	Medium
•Erosion of spoil stockpiles resulting in offsite sedimentation during Phase C2 works.	L3	C3	High	Section 16 Soil and Water	L4	C4	Medium
Social impacts and community infrastructure							
•Impacts on community facilities due to changes to access during demolition.	L3	C4	Medium	Section 11 Construction Traffic Management	L3	C4	Medium
•Potential impacts associated with demolition noise.	L2	C2	Very High	Section 12 Construction Noise and Vibration Management	L3	C3	High
Biodiversity							
•Impacts on threatened ecological communities outside of the demolition footprint. •Impact on native vegetation (non- threatened ecological communities) outside of the demolition footprint. •Significant impacts on threatened flora species. •Impacts on previously unidentified threatened flora species.	L3	C2	High	Section 14 Flora and Fauna Management	L5	C2	Medium

Potential Environmental Hazard	Uncontrolled			Where Key Environmental Controls are Addressed	Residual		
	Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Air quality							
•Impacts on local air quality due to demolition plant and equipment and increase in vehicle movements. •Impacts on local air quality due to dust generation from demolition, exposed surfaces, stockpiles, or haulage.	L3	C3	High	Section 17 Air Quality	L4	C4	Medium
Hazard and risk							
•Transport and storage of hazardous substances and dangerous goods during demolition.	L3	C2	High	Section 19 Dangerous Goods	L4	C3	Medium
Waste management							
•Impacts associated with the management of waste during demolition.	L3	C3	High	Section 18 Waste Management	L4	C4	Medium
Spoil Management							
•A lack of management systems in relation to spoil management leads to excessive spoil generation, poor spoil reuse outcomes, increased traffic and community impacts, and inappropriate spoil handling and management during Phase C1 works	L5	C5	Low	Spoil related risks covered in CEMP	L6	C5	Low
•A lack of management systems in relation to spoil management leads to excessive spoil generation, poor spoil reuse outcomes, increased traffic and community impacts, and inappropriate spoil handling and management during remova of asbestos impacted soil at Westmead (Phase C1).	L3	C4	Medium	Spoil Management Sub Plan	L4	C4	Medium
•A lack of management systems in relation to spoil management leads to excessive spoil generation, poor spoil reuse outcomes, increased traffic and community impacts, and inappropriate spoil handling and management during Phase C2 works.	L3	C4	Medium	Spoil Management Sub Plan	L4	C4	Medium
Sustainability							
•Emissions of greenhouse gases from demolition activities.	L1	C6	Medium	Sustainability Management Sub Plan	L2	C6	Medium
•Increased demand on electricity and water supply during demolition.	L4	C6	Low	Sustainability Management Sub Plan	L4	C6	Low
•Increased diesel use during demolition.	L1	C5	High	Sustainability Management Sub Plan	L1	C6	Medium
•Waste recycling targets not achieved.	L4	C3	Medium	Sustainability Management Sub Plan Section 16 Waste Management	L5	C3	Medium
•Unsustainable procurement policy and processes leading to potentially significant environmental, social or socio-economic impacts	L4	C2	High	Sustainability Management Sub Plan	L5	C2	Medium

APPENDIX E ENVIRONMENTAL CONTROL MAPS



Project Location: **Sydney Metro West, Parramatta, NSW 2142**

Figure Number: **01**

Title: **Parramatta ECM Basemap**

Project ID: **PRJ000712_Sydney_Metro_West**

Client Name: **Delta Group**

Legend

Structure Type
- Heritage Structure
- Sensitive Receptor - Educational

Structure Type
- Scheduled for Demolition

Environmental Monitors (Indicative)
- Air Monitor
- Noise Monitor
- Vibration Monitor

Boundary Screening
- Hoarding

Ersed Controls
- Internal Stormwater inlents (TBC)
- Kerbside Stormwater Inlet
- General Ersed Controls (As Required)

N

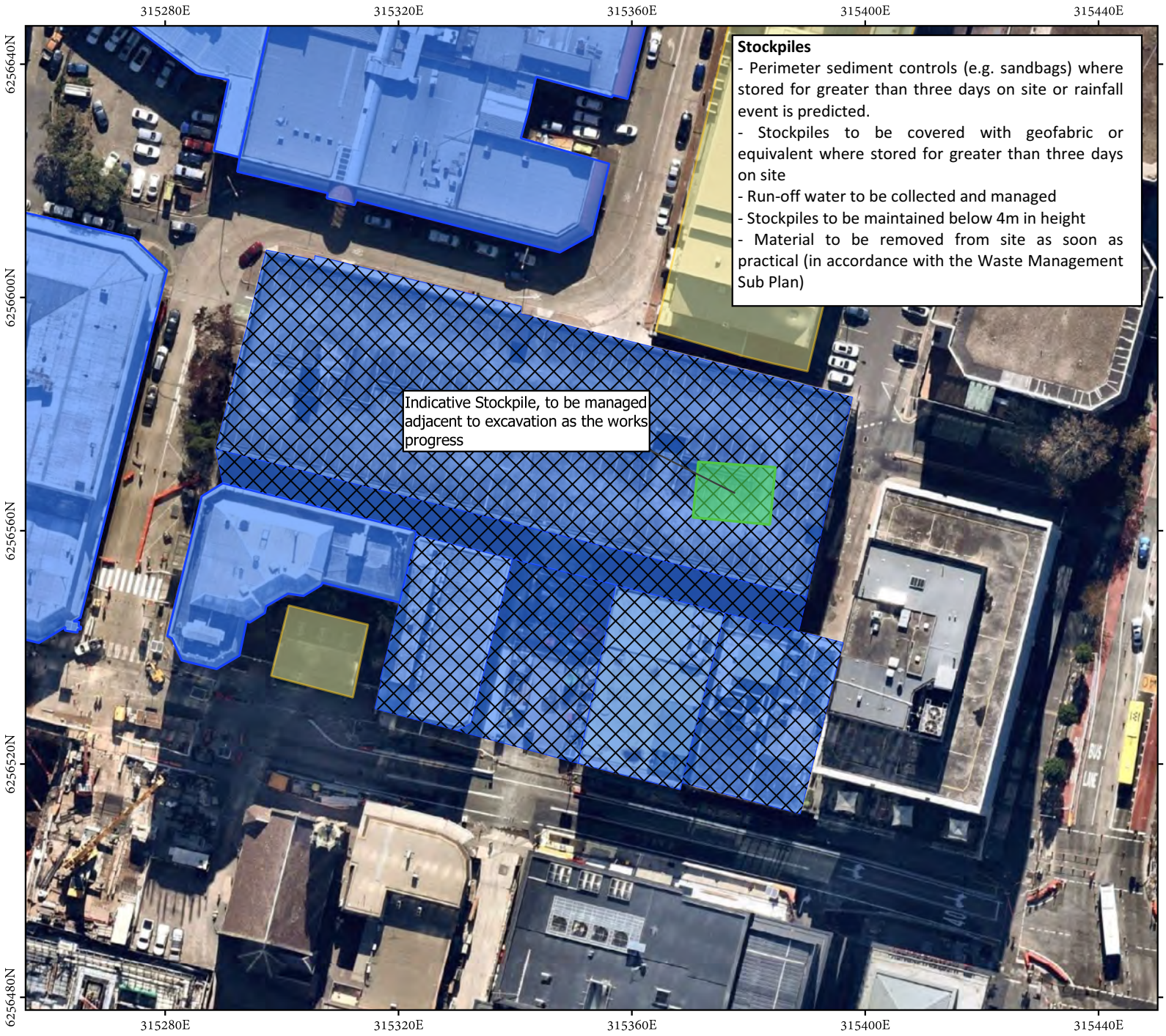
0 40 80 m

Map Scale: 1:1,800

CRS: GDA2020 / MGA zone 56

Source: Nearmaps 05/06/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	20/09/2021	2



Project Location:	**Sydney Metro West Parramatta, NSW 2150**
Figure Number:	**Parramatta A**
Title:	**Spoil Management**
Project ID:	**PRJ000712_Sydney_Metro_West**
Client Name:	**Delta Group**
Project Description:	**Sydney Metro West**

Map Scale:	1:950
CRS:	GDA2020 / MGA zone 56
Source:	Source: Nearmaps 05/06/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	30/11/2021	1

Legend

Structure Type

Structure Type

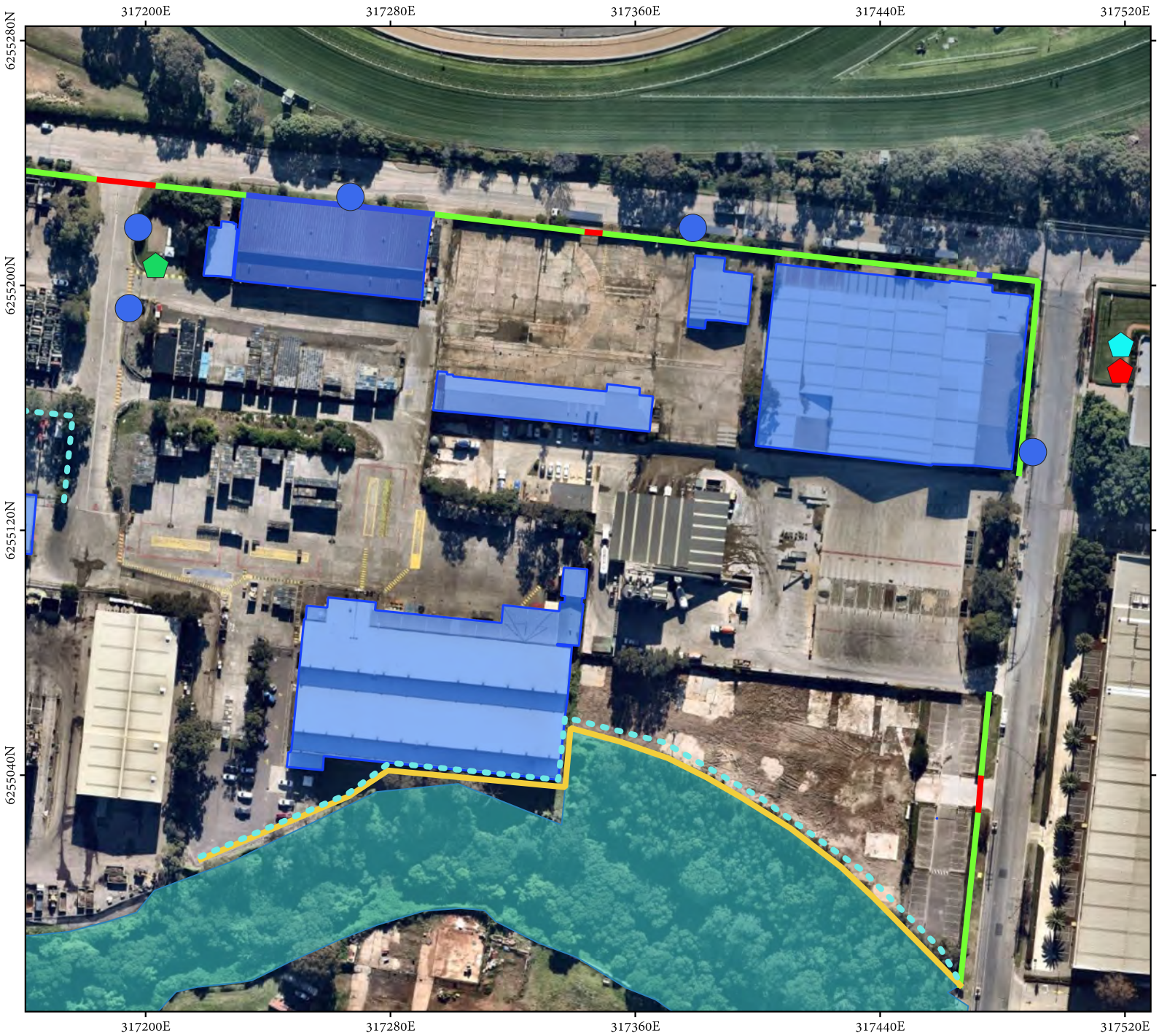
- Heritage Building
- Scheduled for Demolition (Phase C1)
- Archaeolgical Survey (Phase C2)

Stockpile Location

- Stockpile

N

0 20 40 m



Project Location:
Sydney Metro West, Clyde, NSW 2142

Figure Number:
02

Title:
Clyde Portion 2 ECM Basemap

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group

Legend

Environmental Constraints
- Riparian Zone

Structure Type
- Scheduled for Demolition

Environmental Monitors (Indicative)
- Air Monitor
- Noise Monitor

Boundary Screening
- Chain Wire Fence
- Hoarding
- Vehicle Access Gate
- Environmental Exclusion Barrier

Ersed Controls
- Internal Stormwater inlents (TBC)
- Kerbside Stormwater Inlet
- General Ersed Controls (as required)

N

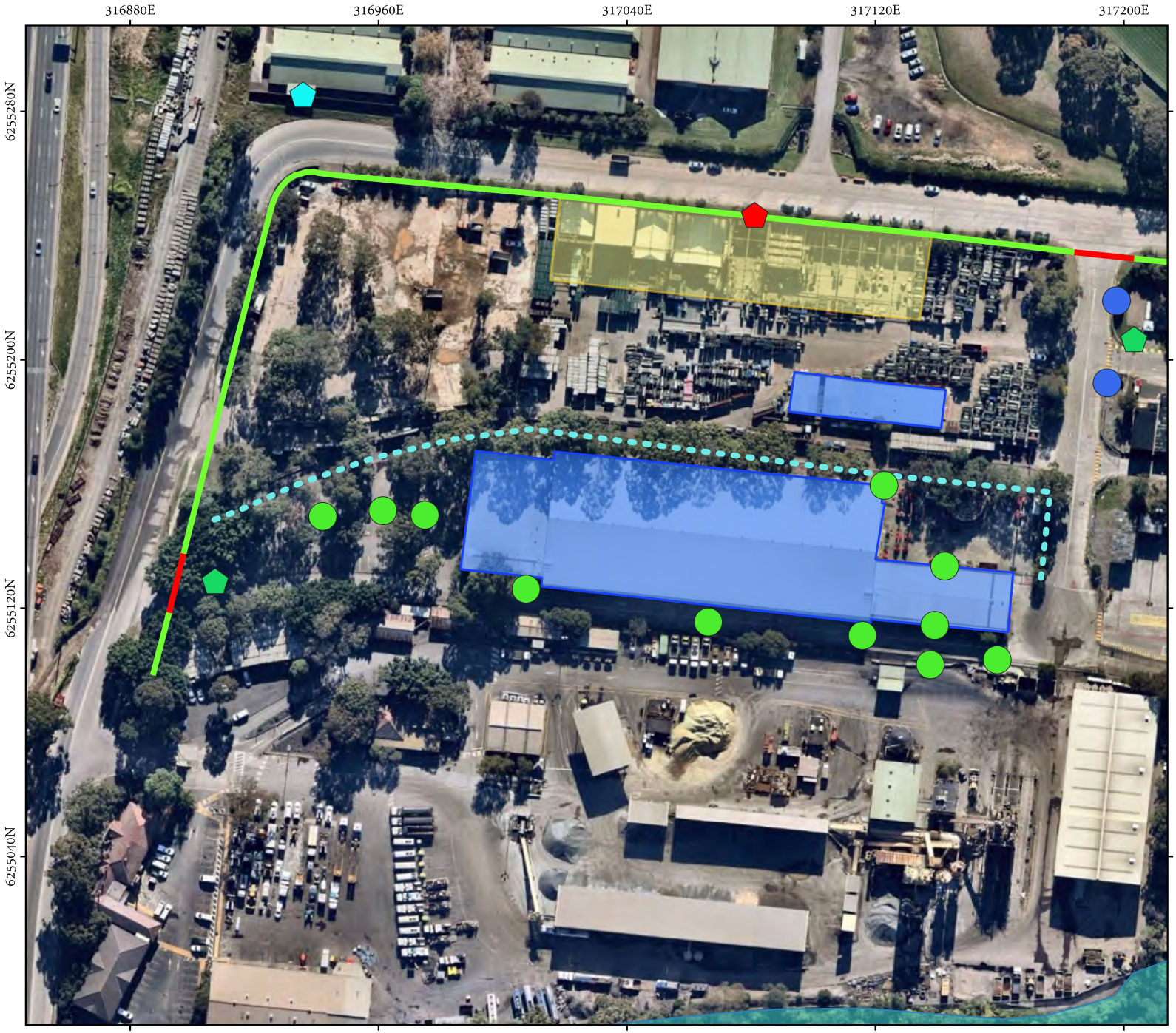
0 40 80 m

Map Scale:
1:1,800

CRS:
GDA2020 / MGA zone 56

Source:
Nearmaps 01/06/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	20/09/2021	2



Project Location:
Sydney Metro West, Clyde, NSW 2142

Figure Number:
03

Title:
Clyde Portion 3 ECM Basemap

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group

Legend

Environmental Constraints
- Riparian Zone
- Heritage Structure

Structure Type
- Scheduled for Demolition

Environmental Monitors
- Air Monitor
- Noise Monitor
- Vibration Monitor

Boundary Screening
- Chain Wire Fence
- Hoarding
- Vehicle Access Gate
- Environmental Exclusion Barrier

Ersed Controls
- Internal Stormwater inlents (TBC)
- Kerbside Stormwater Inlet
- General Ersed Controls (as required)

N

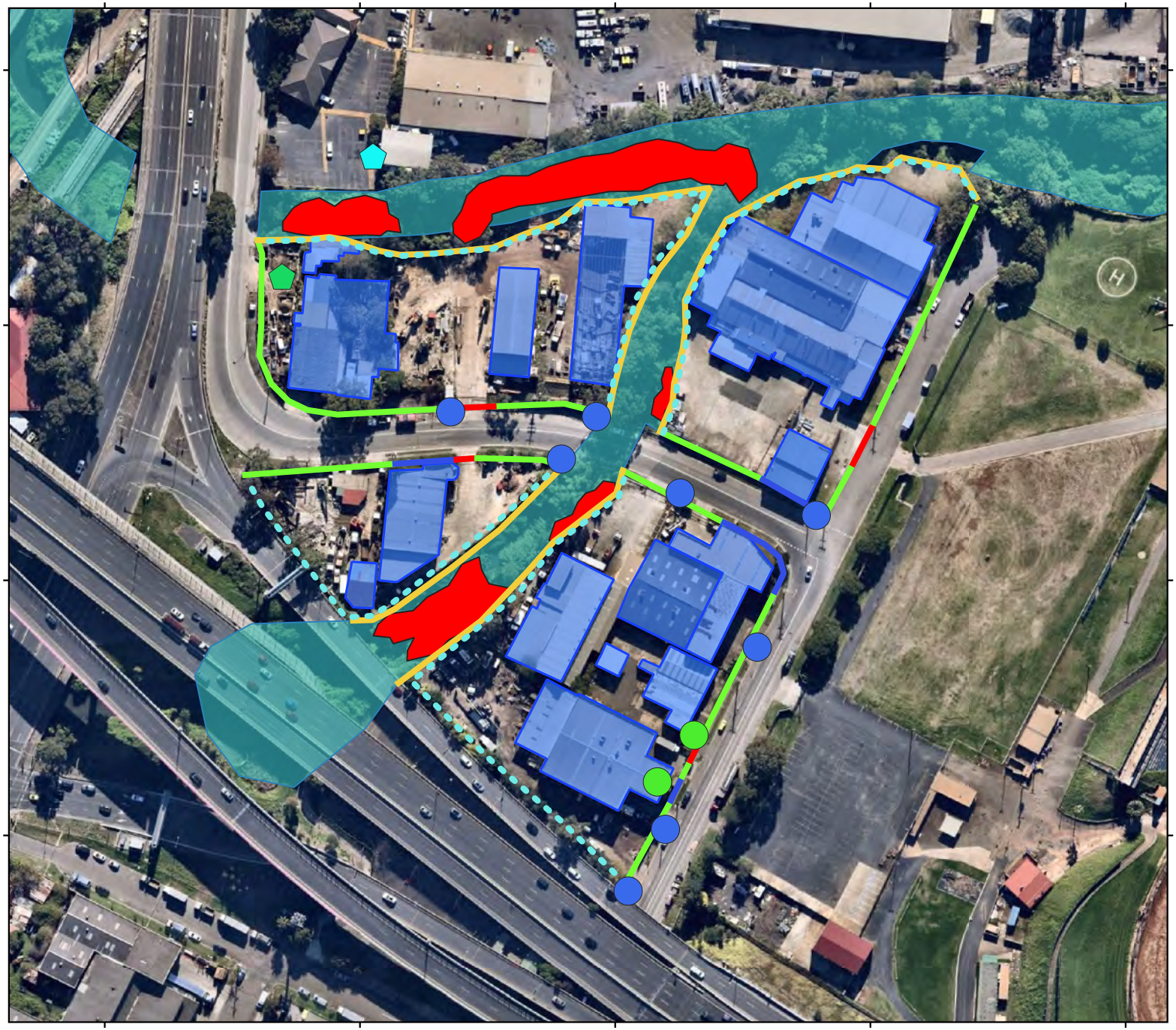
0 40 80 m

Map Scale:
1:1,800

CRS:
GDA2020 / MGA zone 56

Source:
Nearmaps 01/06/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	20/09/2021	2



Project Location:
Sydney Metro West, Clyde, NSW 2142

Figure Number:
04

Title:
Clyde Portion 4 ECM Basemap

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group

Legend

Environmental Constraints
- Riparian Zone
- Myotis Macropus

Structure Type
- Scheduled for Demolition

Environmental Monitors (Indicative)
- Air Monitor
- Noise Monitor

Boundary Screening
- Chain Wire Fence
- Hoarding
- Vehicle Access Gate
- Environmental Exclusion Barrier

Ersed Controls
- Internal Stormwater inlents (TBC)
- Kerbside Stormwater Inlet
- General Ersed Controls (as required)

N

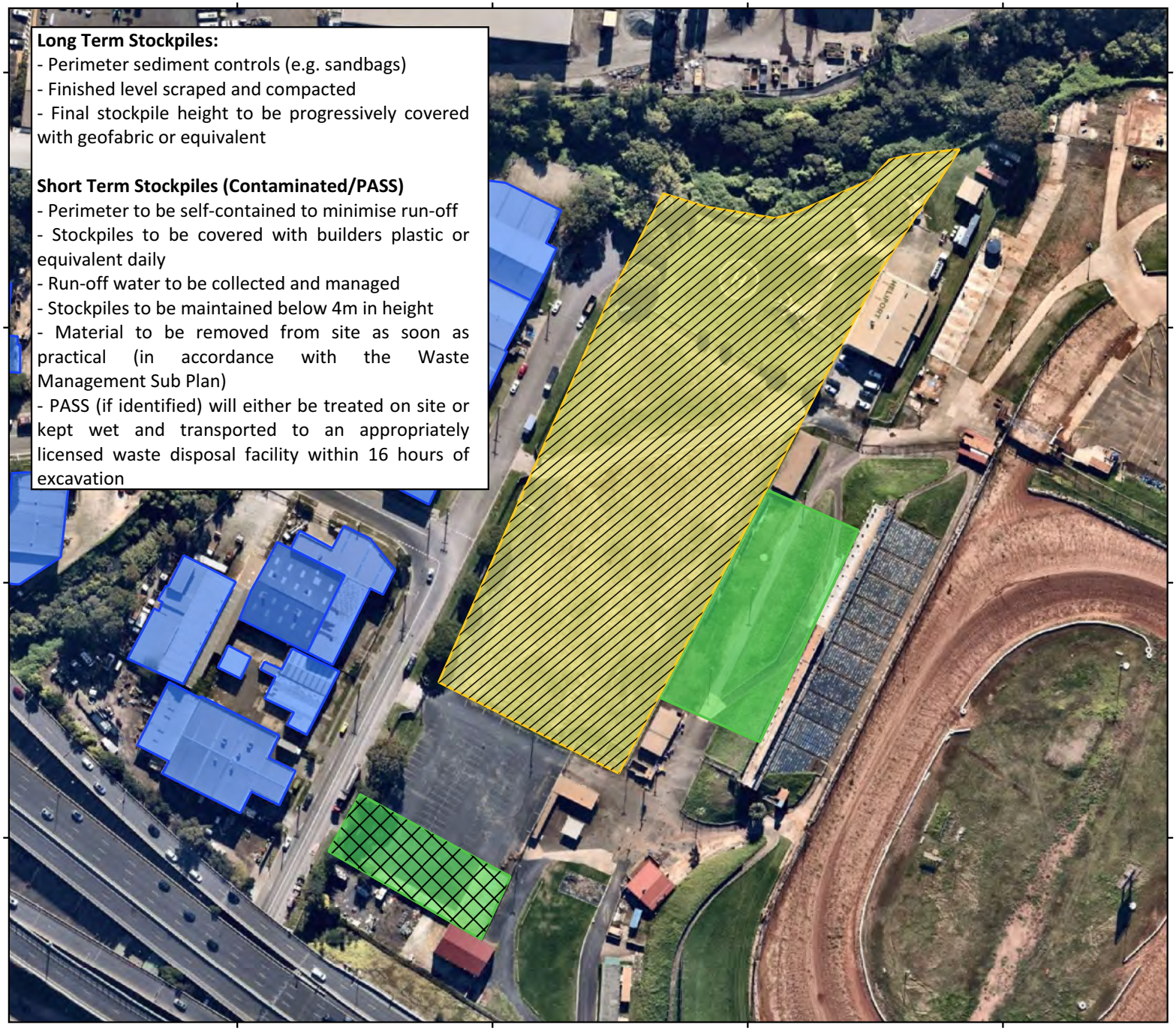
0 40 80 m

Map Scale:
1:1,800

CRS:
GDA2020 / MGA zone 56

Source:
Nearmaps 01/06/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	20/09/2021	2



Long Term Stockpiles:
- 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/PASS)
- 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)
- PASS (if identified) will either be treated on site or kept wet and transported to an appropriately licensed waste disposal facility within 16 hours of excavation

Project Location: **Sydney Metro West, Clyde, NSW 2142**

Figure Number: **Clyde B**

Title: **Spoil Management**

Project ID: **PRJ000712_Sydney_Metro_West**

Client Name: **Delta Group**

Legend

Structure Type
Scheduled for Demolition

Heritage Items
Archaeological Study Area (Phase C2)

Indicative Stockpile Areas
Long term Onsite Stockpile
Short term stockpile (Contaminated / PASS)

Note 1: Final location of stockpile areas is subject to refinement.

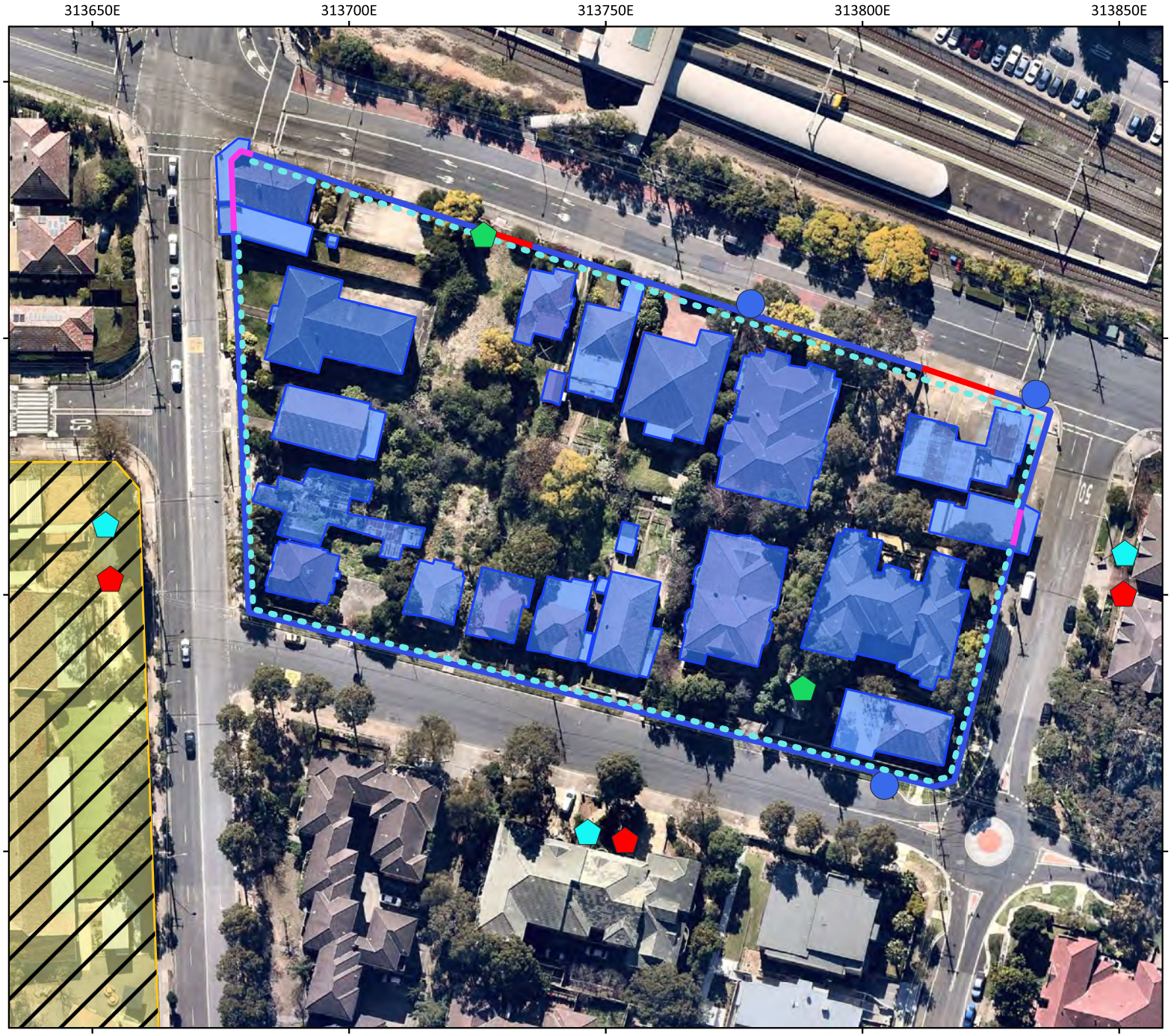
N
0 40 80 m

Map Scale: 1:2,000

CRS: GDA2020 / MGA zone 56

Source: Nearmaps 01/06/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	30/11/2021	1



Project Location:
Sydney Metro West
Westmead, NSW 2150

Figure Number:
05

Title:
Westmead ECM Basemap

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group

Legend

Structure Type
- Scheduled for Demolition

Environmental Monitors (Indicative)
- Air Monitor
- Noise Monitor
- Vibration Monitor

Boundary Screening
- Hoarding
- Vehicle Access Gate
- Existing Brick Structure

Ersed Controls
- Internal Stormwater inlents (TBC)
- Kerbside Stormwater Inlet
- General Ersed Controls (As Required)

Environmental Constraints
- Heritage Building - Educational

N

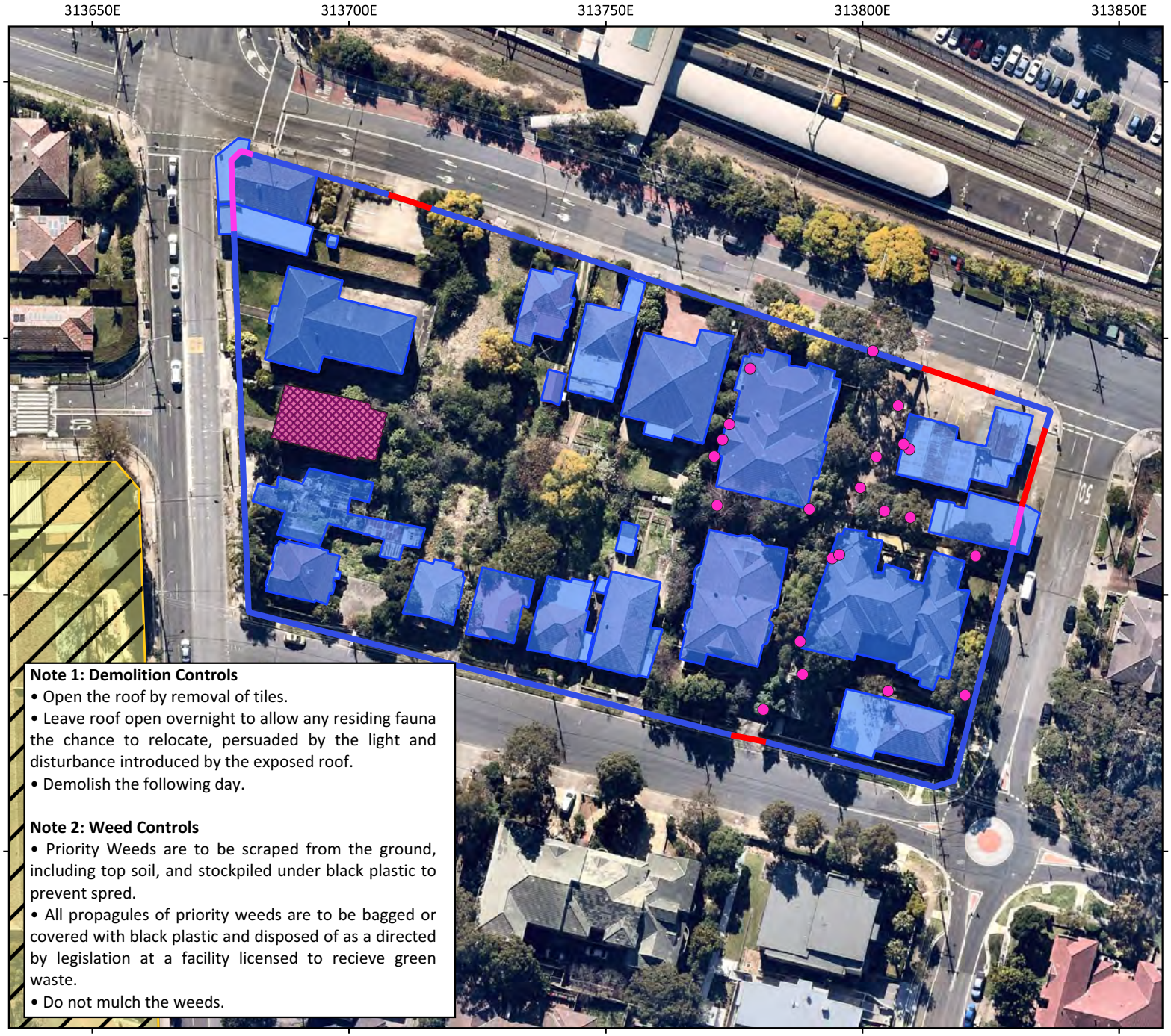
0 20 40 m

Map Scale:
1:1,100

CRS:
GDA2020 / MGA zone 56

Source:
Nearmaps 07/08/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	20/09/2021	2



Note 1: Demolition Controls

- Open the roof by removal of tiles.
- Leave roof open overnight to allow any residing fauna the chance to relocate, persuaded by the light and disturbance introduced by the exposed roof.
- Demolish the following day.

Note 2: Weed Controls

- Priority Weeds are to be scraped from the ground, including top soil, and stockpiled under black plastic to prevent spred.
- All propagules of priority weeds are to be bagged or covered with black plastic and disposed of as a directed by legislation at a facility licensed to recieve green waste.
- Do not mulch the weeds.

Project Location:
Sydney Metro West
Westmead, NSW 2150

Figure Number:
Westmead A

Title:
Fauna and Flora Controls

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group

Legend

Structure Type
- Scheduled for Demolition
- Heritage Building - Educational

Ecological Constraints
- Roof to Open (See Note 1)
- Native Trees (marked with pink tape)

Boundary Screening
- Hoarding
- Vehicle Access Gate
- Existing Brick Structure

Note: Remainder of vegetation is non-native and a mix of priority & non-priority weeds (See Note 2).

N

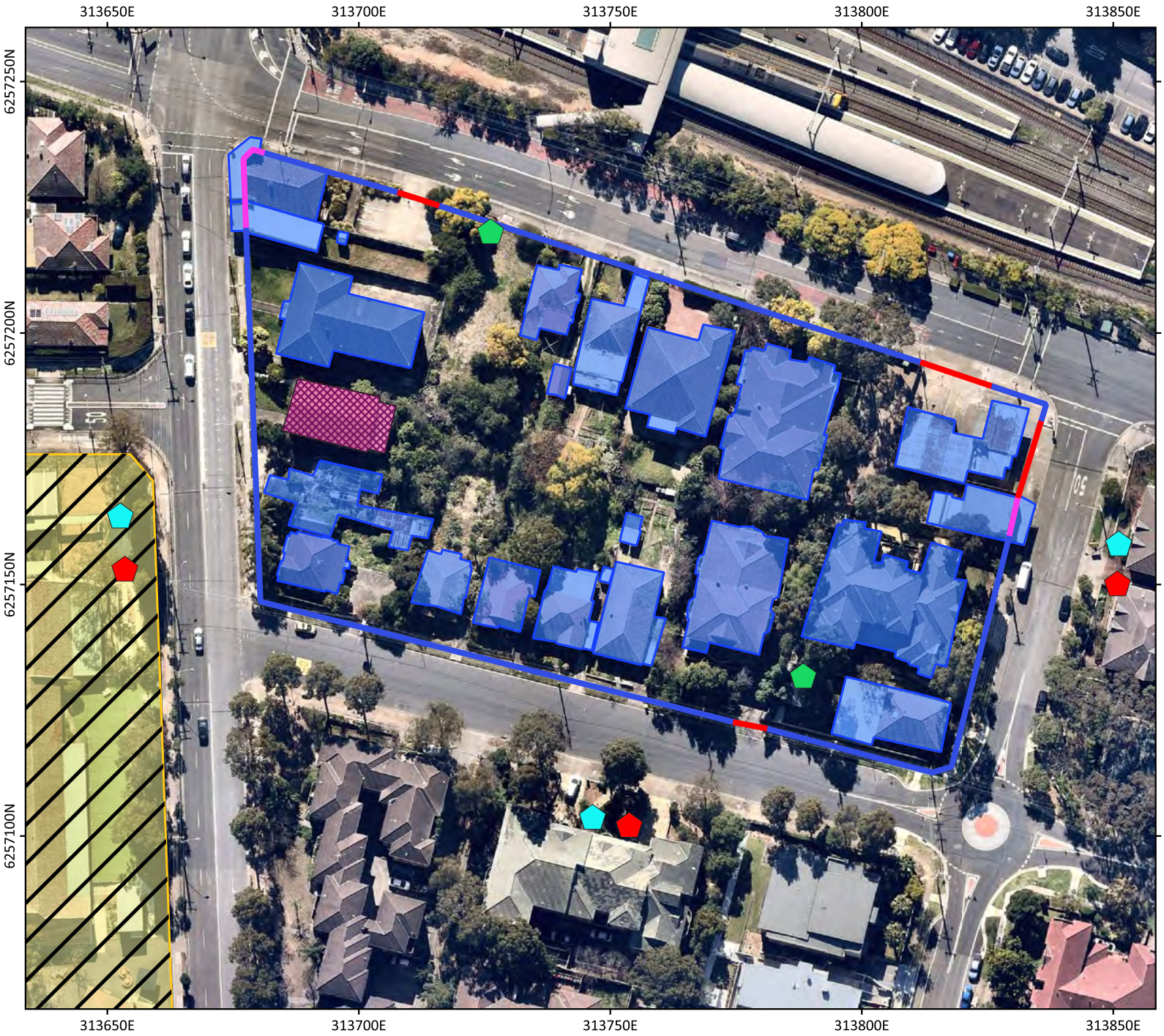
0 20 40 m

Map Scale:
1:1,100

CRS:
GDA2020 / MGA zone 56

Source:
Nearmaps 07/08/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	10/11/2021	3



Project Location:
Sydney Metro West
Westmead, NSW 2150

Figure Number:
Westmead B

Title:
Westmead ECM Basemap

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group

Legend

Structure Type
- See Ecological Controls (Clyde A)
- Heritage Building - Educational
- Scheduled for Demolition

Environmental Monitors (Indicative)
- Air Monitor
- Noise Monitor
- Vibration Monitor

Boundary Screening
- Hoarding
- Vehicle Access Gate
- Existing Brick Structure

N

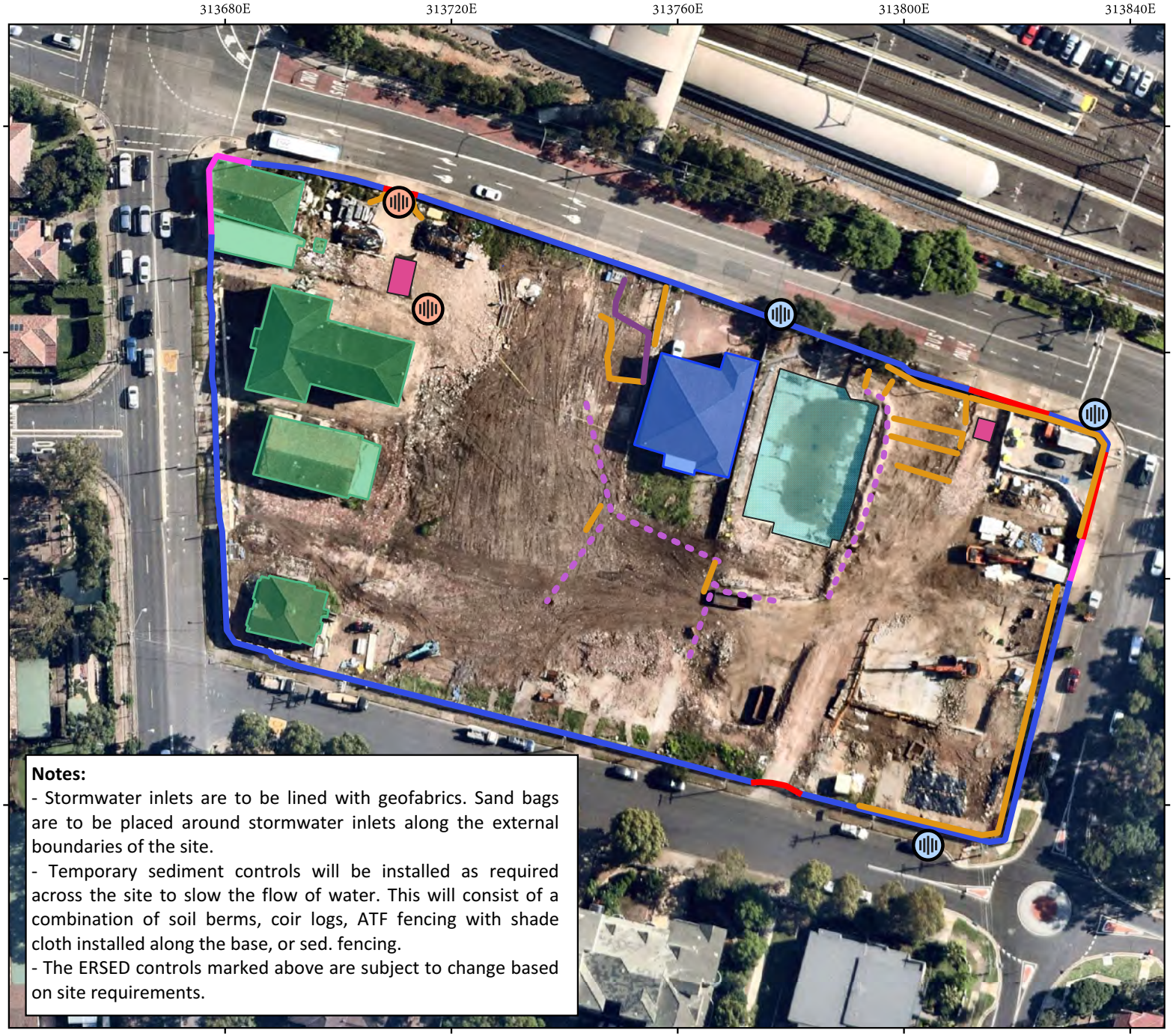
0 20 40 m

Map Scale:
1:1,100

CRS:
GDA2020 / MGA zone 56

Source:
Nearmaps 07/08/2021

Prepared:	Reviewed:	Date:	Revision:
EW	WD	10/11/2021	3



Notes:

- Stormwater inlets are to be lined with geofabrics. Sand bags are to be placed around stormwater inlets along the external boundaries of the site.
- Temporary sediment controls will be installed as required across the site to slow the flow of water. This will consist of a combination of soil berms, coir logs, ATF fencing with shade cloth installed along the base, or sed. fencing.
- The ERSED controls marked above are subject to change based on site requirements.

Project Location:
Sydney Metro West
Westmead, NSW 2145

Figure Number:
Westmead C - Demolition

Title:
Erosion and Sediment Controls

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group

Legend

Structure Type
- Scheduled for Demolition
- Demolished

Boundary Screening
- Hoarding
- Vehicle Access Gate
- Existing Brick Structure

Ersed Controls (See Notes)
- Internal Stormwater inlents
- Kerbside Stormwater Inlet

General ERSED Controls
- Coir Logs
- ATF Fencing with Shade Cloth
- Soil Berms
- Cattle Grid
- Temporary Detention Basin

N

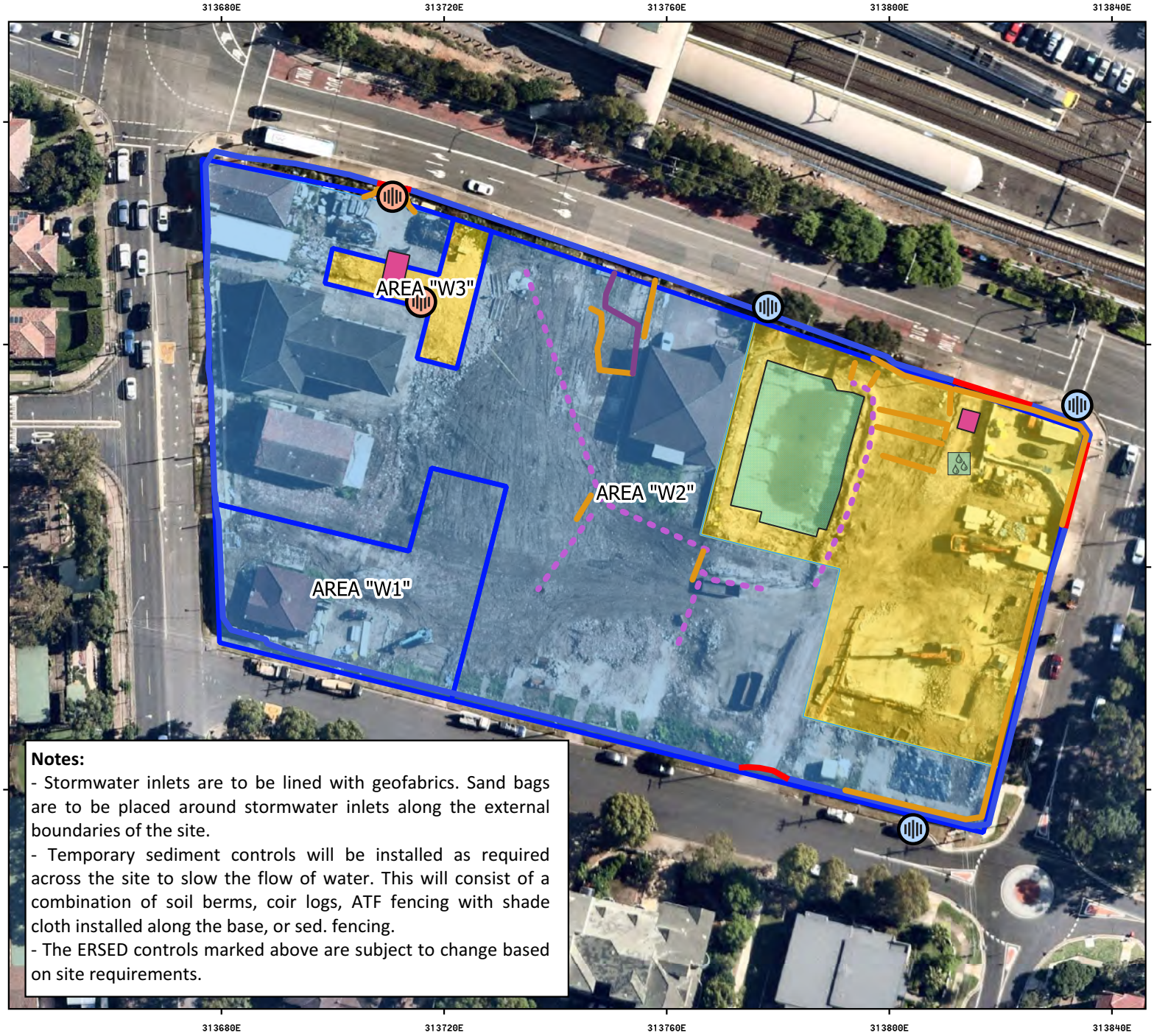
0 20 40 m

Map Scale:
1:1,000

CRS:
GDA2020 / MGA zone 56

Source:
Nearmap 17/02/2022

Prepared:	Reviewed:	Date:	Revision:
EW	WD	14/03/2022	7



Notes:

- Stormwater inlets are to be lined with geofabrics. Sand bags are to be placed around stormwater inlets along the external boundaries of the site.
- Temporary sediment controls will be installed as required across the site to slow the flow of water. This will consist of a combination of soil berms, coir logs, ATF fencing with shade cloth installed along the base, or sed. fencing.
- The ERSED controls marked above are subject to change based on site requirements.

Project Location:
Sydney Metro West
Westmead, NSW 2145

Figure Number:
Westmead D - Asbestos Soil Removal

Title:
Erosion and Sediment Controls

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group Pty Ltd

Legend

Structure Type
- Demolished

Site Areas
- Included in Asbestos Removal
- Excluded from Asbestos Removal

Boundary Screening
- Hoarding
- Vehicle Access Gate

Stormwater Inlets
- Internal Stormwater inlents
- Kerbside Stormwater Inlet

General ERSED Controls
- Coir Logs
- ATF Fencing with Shade Cloth
- Soil Berms
- Cattle Grid
- Temporary Detention Basin
- Truck Wash Bay

N

0 20 40 m

Map Scale:
1:1,000

CRS:
GDA2020 / MGA zone 56

Source:
Nearmap 17/02/2022

Prepared:	Reviewed:	Date:	Revision:
BP	WD	30/03/2022	2

Notes:

- Stormwater inlets are to be lined with geofabrics. Sand bags are to be placed around stormwater inlets along the external boundaries of the site.
- Temporary sediment controls will be installed as required across the site to slow the flow of water. This will consist of a combination of soil berms, coir logs or sed. fencing.
- The ERSED controls marked above are subject to change based on site requirements.
- Polymer spray may be applied to the surface post-works (TBA by Sydney Metro)

Project Location:
Sydney Metro West
Westmead, NSW 2145

Figure Number:
Westmead E - Post Soil Removal

Title:
Erosion and Sediment Controls

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group Pty Ltd

Legend

Stormwater Inlets

Kerbside Stormwater Inlet

Boundary Screening

Hoarding

Vehicle Access Gate

General ERSED Controls

Coir Logs

Soil Berms (TBA)

N

0 20 40 m

Map Scale:
1:1,000

CRS:
GDA2020 / MGA zone 56

Source:
Nearmap 17/02/2022

Prepared:	Reviewed:	Date:	Revision:
BP	WD	30/03/2022	2

APPENDIX F – ENVIRONMENTAL MONITORING PROGRAM

Potential Impact	Location	Parameter	Frequency	Technique	Reporting	Responsibility	Timing
Noise	As per Noise & Vibration Management Sub Plan	LA10 (15min), RBL - dB(A)	Monthly	Unattended noise logger	Monthly Report	Environment & Sustainability Manager	Demolition
Vibration	As per Noise & Vibration Management Sub Plan	Vibration velocity (mm/s)	As required	Vibration logger	Monthly Report	Environment & Sustainability Manager	Demolition
Noise complaints	Specific location of complaint	Source of noise	As required	Attended noise meter	Monthly Report Complaints register	Environment & Sustainability Manager	Demolition & Excavation
Dust	All portions	PM_{10} & $PM_{2.5}$	At all times	PM_{10} & $PM_{2.5}$ logger	Monthly Report	Site Manager	Demolition
Dust	All portions	Visible dust	At all times	Visual inspection	SEF 049 Site Inspection Report	Site Manager	Demolition & Excavation
Biodiversity	Clyde	Microbats	Pre-construction	Targeted survey by ecologist	Pre-construction	Environment & Sustainability Manager	Pre-demolition
Biodiversity	Clyde, Westmead	Trees	Pre-construction	Targeted survey by ecologist (of trees to be cleared)	Pre-clearance Report	Environment & Sustainability Manager	Pre-demolition
Biodiversity	Clyde, Westmead	Trees	Post-construction	Targeted survey by ecologist (of trees cleared)	Post-clearance Report	Environment & Sustainability Manager	Post-demolition
Heritage	Clyde, Parramatta	Condition	Pre-construction	Visual inspection	SEF 049 Site Inspection Report	Site Manager	Demolition
Spoil	All portions	Presence of spoil material at vehicle egress	Daily	Visual inspection	SEF 049 Site Inspection Report	Site Manager	Demolition & Excavation
Waste / spoil	All portions	Waste types, vehicle details, and arrival and departure times	Each load	Visual inspection	QF 029 Material Disposal Running Sheet	Gate Attendant	Demolition & Excavation
Waste storage	All portions	Condition / maintenance	Weekly	Visual inspection	SEF 049 Site Inspection Report	Site Manager	Demolition & Excavation
Erosion and sediment controls	All portions	Effectiveness	Weekly	Visual inspection	SEF 049 Site Inspection Report	Site Manager	Demolition & Excavation
Noise barriers /	All portions	Condition	Weekly	Visual inspection	SEF 049 Site	Site Manager	Demolition &

Potential Impact	Location	Parameter	Frequency	Technique	Reporting	Responsibility	Timing
site hoarding					Inspection Report		Excavation
Graffiti and weeds	All portions	Presence / need for removal	Weekly	Visual inspection	SEF 049 Site Inspection Report	Site Manager	Demolition & Excavation
Retained vegetation	All portions	Health	Weekly	Visual inspection	SEF 049 Site Inspection Report	Site Manager	Demolition & Excavation
Site lighting	All portions	Direction	Weekly	Visual inspection	SEF 049 Site Inspection Report	Site Manager	Demolition & Excavation
Electricity / Water Use	All portions	Usage	Monthly	Purchase records	Monthly Sustainability Report	Environment & Sustainability Manager	Demolition & Excavation
Recycling	All portions	Proportion recycled	Monthly	Disposal records	Greenhouse Gas Inventory Report	Environment & Sustainability Manager	Demolition & Excavation
Greenhouse gases	All portions	Emissions generated	Monthly	Carbon Estimation and Reporting Tool	Greenhouse Gas Inventory Report	Environment & Sustainability Manager	Demolition & Excavation
Diesel	All portions	Litres used	Monthly	Purchase records	Diesel Inventory Report	Environment & Sustainability Manager	Demolition & Excavation

NB: Non- compliances will be investigated, closed out, and evidence provided using the Environment Incident & Corrective Action Report (appendix A). Details of the non-compliance will be recorded in the Action Register SEF 024.all CAR to be sent to the Environmental Manager for distribution and filing.

APPENDIX G – PROJECT ORGANISATIONAL CHART

Sydney Metro West - Enabling Works Organisational Structure

DELTA GROUP

DELTA GROUP LEADERSHIP TEAM

Project Director

Site Roles

Parramatta Team	Clyde Team	Westmead Team
Project Manager	Project Manager	Project Manager
Demolition Supervisor	Demolition Supervisor	Demolition Supervisor
Asbestos Supervisor	Asbestos Supervisor	Asbestos Supervisor

Cross Team Support Roles

Delta Support Team			Specialist Support Functions		
Commercial Manager	Quality Health & Safety Manager	Operations Manager	Environment & Sustainability Manager	Certified Occupational Hygienist	Excavation Director
Utilities Manager	Transport & Logistics	Project/Site Engineers	Ecologist	Acoustic Consultant	Heritage Advisor
Scheduler	WFDIP	Cadet Engineers	Structural Engineer	Temporary Works Independent Verifier	Built Heritage Expert

Sydney Metro West Management & Support Roles

- Principal Representative
- Manager Environment
- Interface Manager
- Communications Manager
- Manager Sustainability
- Senior Heritage Advisor

Independent Oversight

- Environmental Representative
- Acoustic Advisor
- Independent Env. Auditor

APPENDIX H – SM ENVIRONMENTAL INCIDENT CLASSIFICATION PROCEDURE (SM-17-00000096)

Environmental Incident and Non-compliance Reporting Procedure

SM-17-00000096

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Manager, Environment
System Owner:	Executive Director, Safety, Sustainability & Environment
Status:	FINAL
Version:	5.1
Date of issue:	18 February 2019
Review date:	11 February 2020

Table of contents

Figures

Tables

1. Purpose and scope

This procedure documents the process to be used when classifying and reporting Environmental Events.

This procedure applies to Sydney Metro and any contractor Sydney Metro engages to carry out works. Principal Contractors must ensure their processes for managing Environmental Events is consistent with this document. The requirement for consistency is documented in the Construction Environmental Management Framework (Section 3.3(f)) and shall be allocated as a contractual requirement to each delivery partner.

2. Introduction

Sydney Metro is committed to minimising risks to the environment, the rapid identification and rectification of breaches to Environmental Requirements and efficient and effective responses to Environmental Incidents that grows our ability to minimise harm and prevent future re-occurrences.

This procedure defines an approach to classifying Environmental Issues, Incidents and Non-compliances and establishes the immediate, interim and long term actions that are taken in response to Environmental Events.

3. Definitions

All terminology in this Procedure is taken to mean the generally accepted or dictionary definition with the following exceptions:

Term	Definition
Environment	means components of the earth, including: a) land, air and water, and b) any layer of the atmosphere, and c) any organic or inorganic matter and any living organism, and d) human-made or modified structures and areas, and includes interacting natural ecosystems that include components referred to in (a)-(c).
Environmental Event	An occurrence that identifies actual or potential environmental impacts or non-compliances. Events cans include conversations, inspections, incidents, or failures of process.
Environmental Harm	Includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution.
Environmental Incident	An occurrence or set of circumstances, as a consequence of which pollution (air, water, noise, and land) or an adverse environmental impact has occurred or is likely to have occurred.
Environmental Issue	An occurrence or set of circumstances where Environmental Harm or Non-compliance could occur if not rectified.
Environmental Non-compliance	A breach of an Environmental Requirement originating from Planning Approvals, Environment Protection Licenses, lease agreements, and other requirements documented in environmental management plans.

Term	Definition
Material Harm to the Environment	harm to the environment is material if: a) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or b) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and c) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment. It does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.

Terms and jargon specific to this procedure are defined within the Sydney Metro Glossary.

4. Accountabilities

The Executive Director, Safety, Sustainability & Environment is accountable for this Procedure. Accountability includes authorising the document, monitoring its effectiveness and performing a formal document review.

Direct Reports to the Chief Executive are accountable for ensuring the requirements of this document are implemented within their area of responsibility.

The Direct Reports to the Chief Executive who are accountable for specific projects/programs are accountable for ensuring associated contractors comply with the requirements of this document if specified in the relevant contracts.

5. Environmental Events

Environmental surveillance data is relied upon to inform Sydney Metro of performance trends, to provide assurance that legislative requirements are being met and indicate where surveillance activities should be directed. In order to rely upon environmental data for this purpose there needs to be a high degree of consistency in the manner by which it is collected and interpreted. Due to the need for consistency, any incident/Non-compliance procedure produced by a delivery partner to Sydney Metro is required to be consistent with the requirements of this document.

The concept of Environmental Events forms a common starting point for understanding what types of occurrences should be managed and reported as Incidents and what should be reported as Non-compliances or Issues. When an Environmental Event occurs a series of questions can be asked to consistently determine what type of event it is. Commonly, Environmental Events lead to three different processes:

1. Reporting of an Environmental Incident;
2. Reporting of an Environmental Non-compliance; or
3. Reporting of an Environmental Issue.

Incidents and Non-compliances are recorded using the Environmental Incident and Non-compliance Report Form (SM ES-FT-403) and Environmental Issues are recorded through environmental inspection reports using the Environmental Inspection Information & Summary Form (SM ES-FT-406). These paper based records are subsequently entered into the Sydney Metro Compliance Register (Section 6.7) which is used to disseminate the data and facilities reporting internally and externally. Note where a Principal Contractor has submitted alternative processes and these have been approved by Sydney Metro they may also be used.

The figure below shows the process by which Environmental Events are classified (Figure 1).

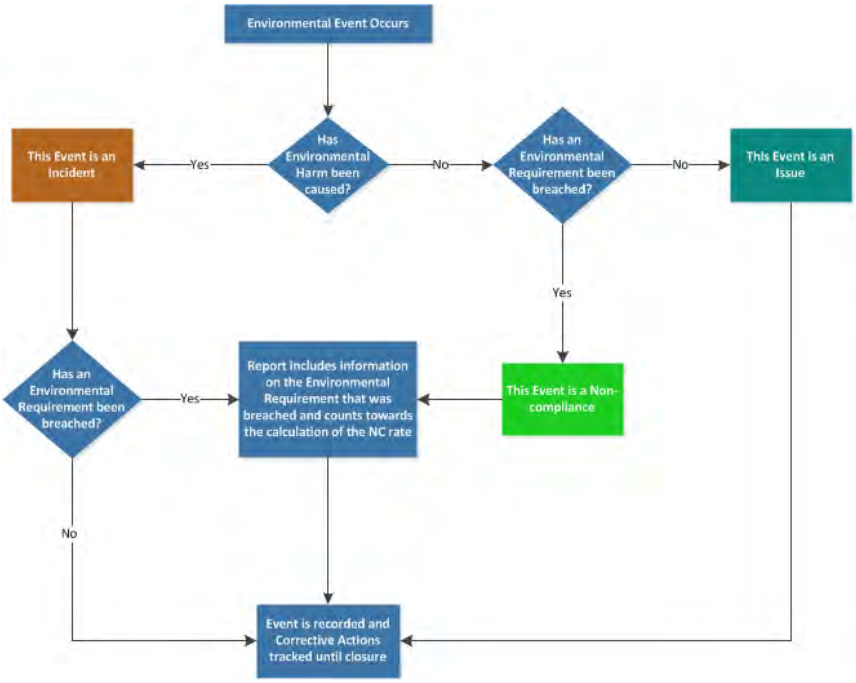


Figure 1: Environmental Event Classification Process

Where Environmental Harm has been caused the event will always be classified as an Environmental Incident regardless of whether one or more Environmental Requirements have been breached. Only when an event occurs without harm being caused to the environment will it be classified as a Non-compliance or Issue. It should be noted that the Incident management process still captures any breaches of Environmental Requirements and these incidents contribute towards the calculation of the NC Rate (Section 7.1).

This flowchart above is intended to be a guide and there may be situations where it is unclear exactly how an Environmental Event should be classified. In these situations a judgement call should be made in consultation with your Manager.

5.1. Worked Example – Classifying Environmental Events

This Section provides a fictitious example of Environmental Events which fall into each of the three different categories. The situations outlined below are provided to explain how event classifications are made. The background for these worked examples is as follows:

Sydney Metro is carrying out works in a newly established site and substantial earthworks are occurring to construct piers for an elevated viaduct. A nearby creek contains a variety of important fish species and the local community are known to use this creek for recreational fishing. The Environmental Impact Statement identified the creek as being at risk of increased sedimentation from dirty water run-off and the Conditions of Approval include a requirement to have a Progressive Erosion and Sediment Control Plan in place. This plan has been produced and indicates that sediment fences must be in place at specific locations to capture dirty water run-off. Regular daily inspections of the sediment controls are carried out by the contractor's Environment Manager and an Independent Environmental Representative has commenced a monthly inspection on this site at 7 am on Thursday morning.

5.1.1. Soil and Water Issue

The Environmental Representative notices a sediment fence has been knocked over in one of the areas indicated as requiring fencing on the ERSED plan. It appears to have occurred recently and there is no record of rainfall in the last few days. During the course of the inspection all other ERSED controls appeared to be in good condition and erected in accordance with the requirements of the Blue Book. In this example no harm has yet been caused and no environmental requirement has been breached so the event is classified as an Environmental Issue which is raised on the inspection report with an action to reinstall the fence.

5.1.2. Soil and Water Non-compliance

Alternatively, the Environmental Representative might have noticed many sediment fences had been knocked down and in some areas an absence of sediment fences where the plan indicates they are required. Despite there being no rain in recent days the Environmental Representative concludes that the requirements of the plan are not being followed and have been breached. The event is raised as non-compliance and actions are set in place to re-enforce the requirements of the ERSED plan for that sites workforce as well as the immediate reinstatement of controls.

5.1.3. Soil and Water Incident

Finally, in a third scenario the Environmental Representative notices many sediment fences are down and some are absent where required by the plan. However, significant rainfall has occurred in recent days and the Environmental Representative determines that it is likely dirty water has escaped through the area into the nearby creek potentially causing harm to the fish population. This event is classified as an Incident by the inspector and immediate notification is undertaken. Similar controls are implemented as described above.

5.2. Notifiable Events

There are a number of Acts and regulations that include a specific requirement to notify a Regulatory Authority. When an Environmental Event triggers one of these notification requirements we then also refer to that event as a Notifiable Event (Table 1).

The Principal Contractor's Environment Manager must determine whether an event is notifiable, and may rely upon advice from Sydney Metro if it is provided.

Table 1: Examples of Notifiable Events

Event type	Legislation		Trigger for Notification
Pollution Incident[1]	POEO Act 1997	Part 5.7	Where Material Harm has occurred contact the EPA Pollution Line as soon as practicable
	POEO (General) Regulation 2009	Section 101	
Land contamination	Contaminated Land Management Act 1997	Section 60(1)	As soon as practicable, after becoming aware of contamination that exceeds the relevant investigation levels in the National Environment Protection Measure, where a person has or will be exposed to the contamination
Discovery of an Aboriginal relic	National Parks & Wildlife Act 1974	Section 89A	Director General of EPA in writing within a reasonable time after becoming aware. Note this is not required for Projects approved under Part 5.2 of the Environmental Planning and Assessment Act (see section 115ZG). Notification and reporting is addressed in the relevant Infrastructure Approval
Discover Aboriginal Remains	Commonwealth Aboriginal & Torres Strait Islanders Heritage Protection Act 1984	Section 20	Commonwealth Minister of the Environment in writing as soon as practicable after becoming aware
Discovery of a relic	Heritage Act 1977	Section 146	Heritage Council in writing within a reasonable time after becoming aware Note -this is not required for Projects approved under Part 5.2 of the Environmental Planning and Assessment Act (see section 115ZG). Notification and reporting is addressed in Infrastructure Approvals

5.3. Event Types

Each Environmental Event is assigned a secondary classification of an Event Type for the purpose of data analysis and general environmental management. They are grouped by areas of environmental management so that targeted auditing, training or awareness initiatives can be initiated in response to emergent trends. Each Event Type is explained in Table 2.

[1] Further information on reporting pollution incidents to EPA is provided in Section 6.6 Environmental Incident/Non-compliance Report

Table 2: Environmental Event Types and their descriptions

Event Type	Applies To:			Description
	Issue	Incident	Non-compliance	
Soil and Water	●	●	●	Covers the physical location, chemical composition and ecology of soils and waterways. Any event which changes these compositions is a Soil and Water event. Within this event type all instances of contamination, erosion and sedimentation of waterways is covered.
Flora and Fauna	●	●	●	Covers vegetation and vegetation communities as well as animals and animal habitat. Any event where vegetation is felled or damaged, animals are killed or injured, or habitat is harmed or destroyed is covered.
Waste and Spoil	●	●	●	Covers the management of Excavated Natural Material (ENM) and Virgin Excavated Natural Material (VENM) including on-site management, and disposal and also the classification and management of Waste materials. **Note:** that the transportation of spoil is covered under Traffic, Transport and Access.
Heritage	●	●	●	Covers the management of known heritage artefacts or sites, and the treatment of unexpected finds, archaeological investigations and other impacts.
Air Quality	●	●	●	Covers the management of emissions of particulate matter, odours, and gasses used as air quality parameters from worksites.
Noise and Vibration	●	●	●	Covers the management of airborne and ground borne noise and vibration and includes hold points on the commencement of any work where Out of Hours Works permits or Construction Noise Impact Statements are required.
Community Stakeholder and Business	●	●	●	Covers the management of Community and Stakeholder requirements and includes complaint response procedure, community management protocols, and the maintenance of information on websites.
Traffic Transport and Access	●	●	●	Covers the management of traffic inside and outside of sites including access points and parking requirements. This event type also covers any requirements in relation to vehicles and vehicle maintenance or the transportation of waste and spoil.
Spills and Leaks	●	●	●	Covers all instances where environmentally sensitive substances are held within a container which has the potential to leak or spill and covers pipes, hoses, fuel tanks, storage tanks and plastic containers. **Note:** Spills and Leaks specifically exclude anything in relation to the transport and deposition of sedimentation.
Management Systems	●	●	●	Covers procedural or administrate processes that are common across all areas. It specifically does not cover procedural or administrate processes which are unique to any of the other event types. For example, not completing a vegetation removal form prior to vegetation clearing is still a Flora and Fauna event. **Note:** A good example of a Management Systems NC would be not reporting an Environmental Incident within required timeframes.

6. Environmental Incident Classification and Management

Sydney Metro has defined an Environmental Incident as:

An occurrence or set of circumstances, as a consequence of which pollution (air, water, noise, and land) or an adverse environmental impact has occurred or is likely to have occurred.

Adverse environmental impact includes contamination, harm to flora and fauna (either individual species or communities), damage to heritage items, or adverse community impacts.

Planning Approvals and Environment Protection Licences permit some environmental impacts and these are not intended to be captured as Environmental Incidents.

Table 3: Examples of Environmental Incidents

Type	Example Incident
Air Quality	Odour that travels beyond the site boundary
Air Quality	Dust exceeding reasonable levels without active management measures in place
Air Quality	Operation or maintenance of plant in a manner that causes or has likely caused excessive air pollution
Soil and Water	Discharge of water on or off site in a manner that causes or has likely caused water pollution without required approvals.
Noise and Vibration	Noise that travels beyond the site boundary as a result of poorly maintained plant or operation of plant in an inefficient manner
Noise and Vibration	Failure to comply with the approved hours of work
Soil and Water	Where the chemical composition of soil or water has been detrimentally modified by a contaminant leading to potential or actual environmental harm. For example, rainfall causes a flow of water across a site that erodes soil and enters a waterway increasing the total suspended solids of that water body.
Spills and Leaks	Where a substance has leaked from, or spilt from a container that is designed to prevent that substance from escaping into the environment (including bunds, fuels tanks, chemical bottles and other containers). Spills and Leaks specifically exclude anything in relation to the transport and deposition of sedimentation.
Soil and Water	Dispose of waste in a manner that harms or is likely to harm the environment
Flora and Fauna	Harm or “pick” a threatened species, endangered population or endangered ecological community without required approvals
Flora and Fauna	Damage to vegetation, fauna or habitat including watercourses without required approvals
Heritage	Damage, disturbance, destruction or works to heritage items/relics without required approvals
Heritage	Damage, disturbance, or destruction of Aboriginal objects or places without required approvals

6.1. Incident Classification

Environmental Incidents are classified into one of three Classes that are based upon the consequence descriptors for environmental risks in the Sydney Metro Risk Matrix (refer to Sydney Metro Risk Management Standard). Each of these classifications trigger a variety of management actions and/or legislative requirements depending on the severity of the consequence described where Class 3 represents minor consequences and Class 1 represents major consequences.

This matrix is further sub-divided into consequence ratings ranging from C6 (low impact) to C1 (high impact). An incident transitions between a Class 3 to a Class 2 incident once material harm has been caused, and transitions into a Class 1 incident once it is determined that the Environmental Harm caused in large-scale and cannot be remediated (Table 4).

Table 4: Classification System for Environmental Incidents

Class 3			Class 2		Class 1
C6	**C5**	**C4**	**C3**	**C2**	**C1**
No appreciable changes to environment and/or highly localised event	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries	Short-term and/or well-contained environmental effects. Minor remedial actions probably required	Impacts external ecosystem and considerable remediation is required	Long-term environmental impairment in neighbouring or valued ecosystems Extensive remediation required	Irreversible large-scale environmental impact with loss of valued ecosystems

6.1.1. Class 3 Incidents

These Incidents are events which cause Environmental Harm, but do not cause Material Harm to the environment. Normally Class 3 Incidents are not Notifiable Events and therefore a simple notification protocol is adopted whereby Sydney Metro must be notified within 48 hours verbally, and in writing.

In some cases it will be unclear whether Material Harm has been caused in the early stages of Incident Management. If this is the case then the process for Class 2 Incidents is followed (see Section Class 2 Incidents) until it is clear that Material Harm has not been caused.

A formal Incident Investigation report is not required for Class 3 Incidents, however, it is expected that the person responsible for completing the Incident Notification Report makes appropriate enquiries to determine the likely causal factors involved and assigns effective corrective actions.

6.1.2. Class 2 Incidents

These Incidents are events which cause Material Harm to the environment and they always trigger notification of Regulatory Authorities. These Incidents represent events that are far more serious than Class 3 Incidents and therefore strict communication protocols are required to ensure that effective and informed decisions are made (Figure 2).

The Environmental Lead, contract Environment Manager and the Independent Environmental Representative must be notified verbally as soon as possible after the observer becomes aware of a Class 2 Incident.

Class 2 Incidents must be investigated and the investigation must produce an investigation report containing corrective or preventative actions. This investigation report must be provided to Sydney Metro within 7 days of the event unless another timeframe is agreed with the EL.

Despite any arrangements for the submission of investigation reports, an Incident Notification Report must be provided with all available information and submitted to Sydney Metro within 48 hours. It is not expected that initial Incident Notification Reports for Incidents under investigation initially include actions as these will be informed by the findings of the investigation. The report should be updated with actions resulting from the investigation when available.

6.1.3. Class 1 Incidents

Class 1 Environmental Incidents are managed in the same manner as Class 2 Incidents expect where a determination is made by the Chief Executive (or delegate) that a Crisis Management Team should be activated. In this situation the Sydney Metro Crisis Management Implementation Plan is followed.

6.2. Incident Notification

When and Environmental Event occurs which causes Environmental Harm in all cases both verbal and written communication of the incident must be carried out immediately and within 48 hours respectively. For Class 1 and 2 Incidents the notification process shown in Figure 2 must be followed. Written communication of Environmental Incidents is via an Incident Notification Report (Section 6.3).

This process includes specific roles and responsibilities within Sydney Metro and our delivery Partners who are required to take notification actions in response to Incidents.

This notification process has been developed to ensure that crucial information about Incidents is captured early and communicated to specific individuals who can ensure the Environmental Impacts are minimised and efficient and effective responses to the event are implemented.

In particular the Principals Representative and the Environmental Lead for Sydney Metro play a crucial role in the communication of Incidents within Sydney Metro and these roles are explained in more detail below.

6.2.1. Principal's Representative (PR)

Each works package establishes a contractual interface for communication between the contracted party and Sydney Metro. Generally this interface is between the Principal Contractors Project Director and an appointed representative of Sydney Metro called the Principals Representative.

All formal written communications must pass between these two individuals electronically using TeamBinder. The Principals Representative holds certain responsibilities in the Incident management Process outlined in Figure 2.

6.2.2. Environmental Lead (EL)

Where this procedure is applied to a works package an Environmental Lead (EL) will be selected for the relevant works package. The Environmental Lead must possess environmental experience and competency in managing Incidents and be a representative of Sydney Metro for those works. This representative holds specific responsibilities outlined in Figure 2.

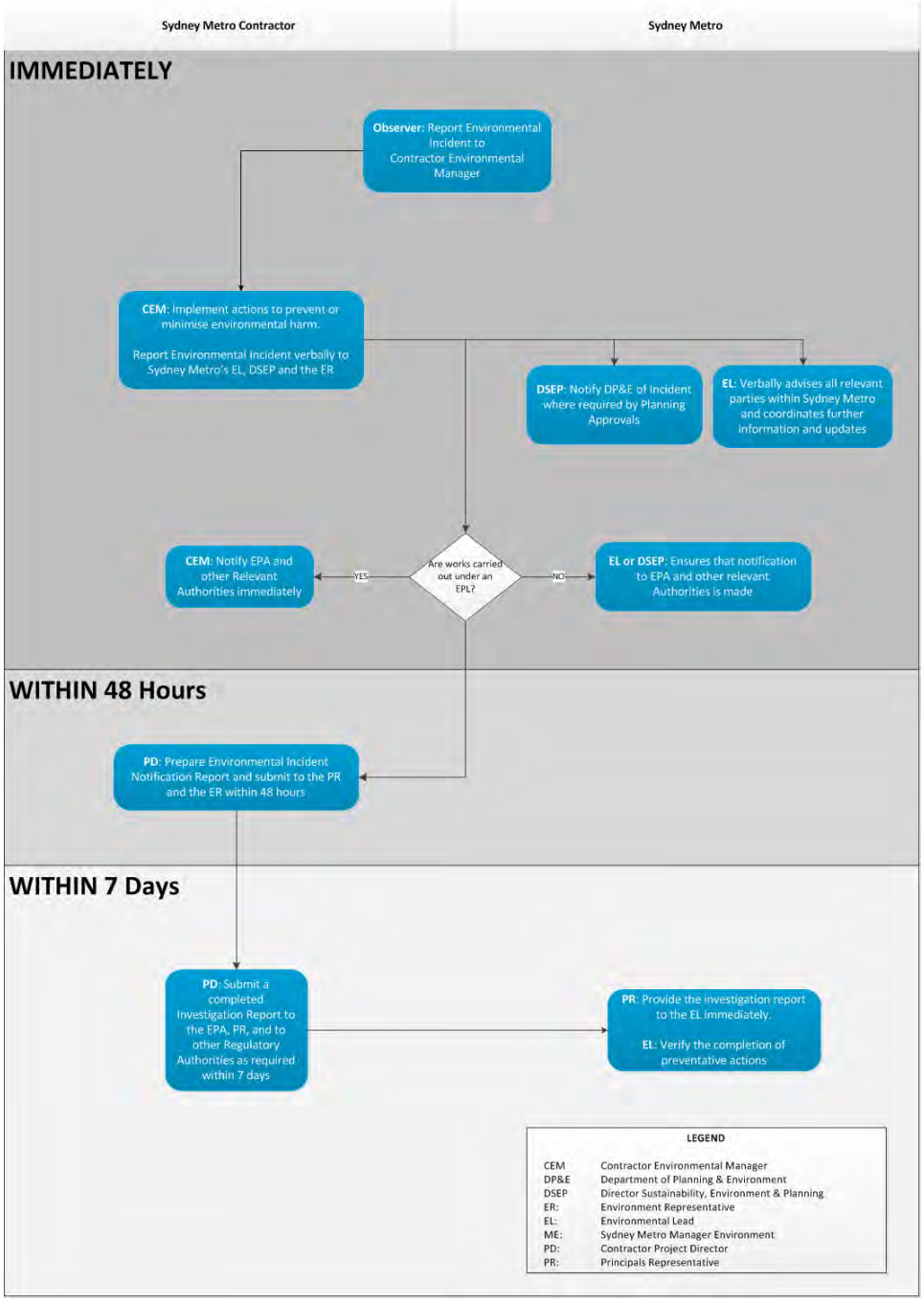


Figure 2: Environment Incident notification process for Class 1 and 2 Incidents

6.3. Incident Notification Reports

For all Incidents an Incident Notification Report must be completed and submitted to Sydney Metro within 48 hours. These reports satisfy the requirement for written communication to Sydney Metro and are completed using the Environmental Incident and Non-compliance Notification Report (SM ES-FT-403) or a similar and consistent form approved by Sydney Metro.

6.4. Incident Investigations

Environmental Incident Investigations must be carried out for all Class 1 and Class 2 Incidents. Investigations may also be requested for any other Environmental Event at the discretion of Sydney Metro. This discretion is likely to be exercised where incidents of a similar nature are occurring repetitively.

When conducting an Environmental Incident investigation, they must:

- Be led by a lead investigator who is suitably independent investigator capable of arriving at objective findings and is experienced in conducting environmental incident investigations;
- Consider the need for legal privilege during the investigation process in consultation with legal counsel;
- Be informed by all available information that is relevant to the investigation;
- Analyse the timeline of events which led up to and followed the occurrence of Environmental Harm including the immediate incident response;
- Be conducted in a manner that is consistent with recognised investigation techniques such as ICAMS;
- Gather and record evidence;
- Seek the input of key stakeholders; and
- Identify Preventative and Corrective actions and document these in the Incident Notification Report.

6.5. Environmental Incidents with Health and Safety Impacts

It is possible that where an Event occurs that causes Environmental Harm, harm is also caused to the health, safety or wellbeing of people. In these situations there will also be a Health and Safety Incident process undertaken which is separate to the process outlined in this document.

While the definition of the Environment covers people under the POEO Act, the management of impacts upon them are carried out using the Health and Safety Incident Management protocols. This is because Health, Safety and Wellbeing requirements are governed by a range of legislation other than the POEO Act and this procedure is not comprehensive in that regard. Sydney Metro has well established processes to manage impacts on people without the need for the Environmental Incident Process to intervene.

Furthermore, where Environmental Events cause harm to both the 'environment' and people it is possible that the root causes for the respective impacts are different. It is also possible that differences in the severity of the impacts trigger inconsistent notification requirements and investigation levels. It is prudent to identify appropriate and effective corrective actions that reduce the risk of impacts to both people and the environment, therefore separate Incident Management Processes are undertaken in these situations.

For more detail on the management of Health and Safety Incidents please refer to the Health & Safety Incident Reporting & Investigation Standard (SM-17-00000040).

6.6. Reporting Pollution Incidents to Relevant Authorities

If an Incident or Non-compliance is a Notifiable Event, then a report must be provided to the relevant Regulatory Authority within the timeframe(s) specified by the relevant legislation. Pollution Incidents which are causing or threatening Material Harm to the environment must be reported to each of the following authorities immediately after project personnel become aware of the Incident, as required by Section 148 of the POEO Act 1997. The contact numbers for these authorities are listed in Table 5.

Table 5: Contact details for Relevant Authorities

Type	Example incident
EPA Environment Line	131 555
Local Authority	Local Council (specific to area)
Ministry of Health	Public Health Unit (refer to http://www.health.nsw.gov.au/Pages/default.aspx to confirm local area contact details)
SafeWork NSW	131 050 or contact@safework.nsw.gov.au
Fire and Rescue NSW	000

Relevant information required to be given to EPA when making a notification is specified in Section 150 of the POEO Act 1997 as follows:

- Time, date, nature, duration and location of the incident;
- Location of the place where pollution is occurring or is likely to occur;
- Nature, the estimated quantity or volume and the concentration of any pollutants involved;
- Circumstances in which the Incident occurred (including the cause of the Incident, if known);
- Action taken or proposed to be taken to deal with the Incident and any resulting pollution or threatened pollution; and
- Other information prescribed by the regulations.

All relevant information known at the time of making the notification must be reported. If the information required by (c), (d) or (e) above is not known at the time of initial notification but becomes known afterwards, it must be reported to each authority immediately after it

becomes known. Verbal notification must be followed by notification in writing within seven days of the date on which the Incident occurred.

Pollution Incidents are not required to be reported if the Incident has already come to the attention of the EPA or the Incident involves only the emission of an odour.

Failure to report a pollution Incident as required by the POEO Act 1997 is an offence.

Where any work or activity is regulated by an Environment Protection License (EPL), notification of a pollution Incident to the EPA should be made by the licensee. Thus, where the contractor holds the EPL for the project, notification to EPA shall be made by the contractor.

For any work or activity that is not regulated by an EPL, notification of pollution Incidents to EPA shall be made by Sydney Metro, unless the contractor is instructed otherwise by Sydney Metro. This includes pollution Incidents that occur as a result of pre-construction activities which may be undertaken prior to an EPL being required for a project. Pre-construction activities are determined by the Planning Approval and may include, for example, geotechnical investigations or surveys.

Where the Environmental Representative determines there to have been a significant off-site impact on people or the biophysical environment, the program Director Sustainability Environment and Planning will notify the Secretary of the Department of Environment and Planning within 48 hours in accordance with Project Infrastructure Approval Conditions. This notification will be followed by a full written report within seven days of the date on which the incident occurred.

6.6.1. Maritime Related Incident Notification and Reporting

Marine Incidents involving vessels and personnel on board vessels must be reported to the Australian Maritime Safety Authority in accordance with the guidance published on their website at:

- Australian Maritime Safety Authority Incident Reporting; and
- Reporting obligations of owners and masters of domestic commercial vessels.

6.7. Environmental Compliance Register

The Environmental Compliance Register is used to manage the information associated with reporting of Environmental Events. This register is maintained by the Manager Environment and may be used by a variety of individuals to input data. For access to the register or information on its use contact the Manager Environment.

This register analyses the data it contains and produces environmental compliance statistics that are used to meet a range of reporting and environmental management requirements.

7. Environmental Non-compliance

An Environmental Non-compliance is a breach of an Environmental Requirement originating from Planning Approvals, Environment Protection Licenses, lease agreements, and other requirements documented in environmental management plans. It is important to note that regardless of whether an event is classified as a Non-compliance or an Incident the process behind managing the event remains the same, with the following exceptions:

- Non-compliances are not notifiable to Regulatory Authorities under the POEO Act;
- Non-compliances are reported to have occurred on the day the breach was raised as opposed to the date when the requirement was breached (this is to preserve historical reporting and analysis – see Section 7.1);
- Non-compliances are not divided into severity classes (Section 5.2);
- Non-compliances do not have the potential to trigger crisis or emergency management processes; and
- There is an informal notification process in the immediate timeframe following a Non-compliance being raised.

When an Environmental Event occurs that causes Environmental Harm and also breaches one or more Environmental Requirements, then an Incident Notification Report will be created which records what requirements were breached.

If a Non-compliance is identified then it must be raised using the Environmental Incident and Non-compliance Report Form within 48 hours by the party responsible for the breach.

7.1. Non-compliance Rate

A key environmental performance statistic used by Sydney Metro is the Non-compliance Rate. This statistic provides a standardised way of comparing the performance of different projects or contractors. The NC Rate is calculated using the following formula:

$$= \left(\frac{(NCs + Incidents\ with\ breaches\ raised\ in\ month) + (Open\ NCs + Open\ Incidents\ with\ breaches\ from\ previous\ months)}{Total\ Number\ of\ Ongoing\ Requirements} \right) X\ 100$$

Each month a count of the number of NCs raised, and Incident raised where Environmental Requirements have also been breached is counted. Added to this number is the number of these events which were raised in previous months that still held an Open status in the current reporting period. Non-compliance and incident Events are considered Open if any of the associated Actions are Open. The total is divided by the number of Environmental Requirements which are actively being complied with (Ongoing Requirements) and a multiplying factor of 100 is applied.

8. Corrective and Preventative Actions

Whenever an Environmental Event is raised actions will be assigned to the event irrespective of whether it is an Issue, Incident or Non-compliance. These actions will generally be Corrective Actions which are implemented to eliminate the cause of the Incident, Non-compliance or Issue and can be thought of as reactive measures in response to the Environmental Event.

Preventative Actions may also be assigned to prevent the occurrence of an Incident, Non-compliance or Issue and can be considered pro-active measures which may be recommended following a detailed investigation of the event.

Actions must:

- Limit impacts as far as is reasonably practicable;
- eliminate risk where practicable;
- where is it not practicable to eliminate the risk, follow the hierarchy of controls;
- address root causes and contributing factors; and
- be prioritised based on risk.

The Executive Director, Safety Sustainability & Environment must ensure there are systems in place to:

- monitor corrective action status;
- escalate issues to the executive where progress on a corrective action is inadequate; and
- retain all corrective action responses for recording purposes.

8.1. Action Status

Actions are allocated to a person who will take accountability for ensuring it is carried out within a timely manner and completed by the due date.

Actions are either closed immediately if the Action has already been carried out and verified by Sydney Metro, or are created with an open status. The Action will remain in an open state until such a time as Sydney Metro verifies that the responsible person has completed the Action in a satisfactory manner. Until all actions associated with an Incident, Non-compliance or Issue are closed the original Environmental Event is considered to be open as well. This is relevant when calculating the NC Rate as open Non-compliances and Incidents contribute toward the calculation of this statistic.

Verification is determined by the Environmental Lead by sighting evidence of the Actions implementation.

9. Related Documents and References

Related Documents and References
• Environmental & Sustainability Management Manual • Risk Management Standard • Health & Safety Incident Reporting & Investigation Standard (SM-17-00000040) • Crisis Management Implementation Plan • Environmental Incident and Non-compliance Notification Report • Environmental Inspection Information & Summary • Sydney Metro Glossary

10. Superseded Documents

Superseded Documents
There are no documents superseded as a result of this document.

11. Document History

Version	Date of approval	Notes
1.0	31 March 2015	New document
2.0	7 July 2016	IMS Review
3.0	7 April 2017	IMS Review
4.0	23 November 2018	IMS Review
5.0	11 February 2019	IMS Review
5.1	18 February 2019	Minor correction to formula

APPENDIX I - SM RISK MANAGEMENT STANDARD (SM-17-00000182)

Sydney Metro Risk Management Standard

SM-17-00000182

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Director, Risk
System Owner:	Deputy Executive Director, Finance & Risk
Status:	Final
Version:	5.0
Date of issue:	28 September 2020
Review date:	28 September 2021

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1. Introduction

1.1. Background

Sydney Metro is Australia's biggest public transport project, representing a generational city-shaping investment with wide-ranging and long-term benefits. In real terms, Metro means world-class fast, safe, and reliable trains easily connecting customers to where they want to go. In May 2019 Sydney Metro commenced Northwest operations, the first Metro line.

By any standard, Sydney Metro projects are mega-projects. Sydney Metro is accountable for the development and delivery of the City & Southwest, West, and Western Sydney Airport projects.

Given Sydney Metro's critical role in meeting Sydney's broader transport objectives and the unprecedented level of investment, it is essential that Sydney Metro delivers world-class risk management. To be successful, Sydney Metro must be prepared for risk, it must manage risks and leverage opportunities; on its projects and as an organisation.

Sydney Metro is therefore committed to implementing structured, integrated, systematic and proactive risk management to improve its performance and inform decisions which support the achievement of objectives and the prevention of harm.

1.2. Purpose and Objectives

The purpose of the Sydney Metro Risk Management Standard (herein referred to as the Standard) is to define and communicate Sydney Metro's approach, process and procedure in relation to risk management.

Further to the key principles detailed in SM-17-00000181 Sydney Metro Risk Management Policy, Sydney Metro's risk management objectives are shown in Figure 1 below.

Figure 1: Risk Management Objectives

1.3. Structure and Content

This Standard sits within the Sydney Metro Risk Management Framework (RMF) forming a key element of the Sydney Metro Integrated Management System (IMS). The structure and content of this Standard is presented in Figure 1 below.

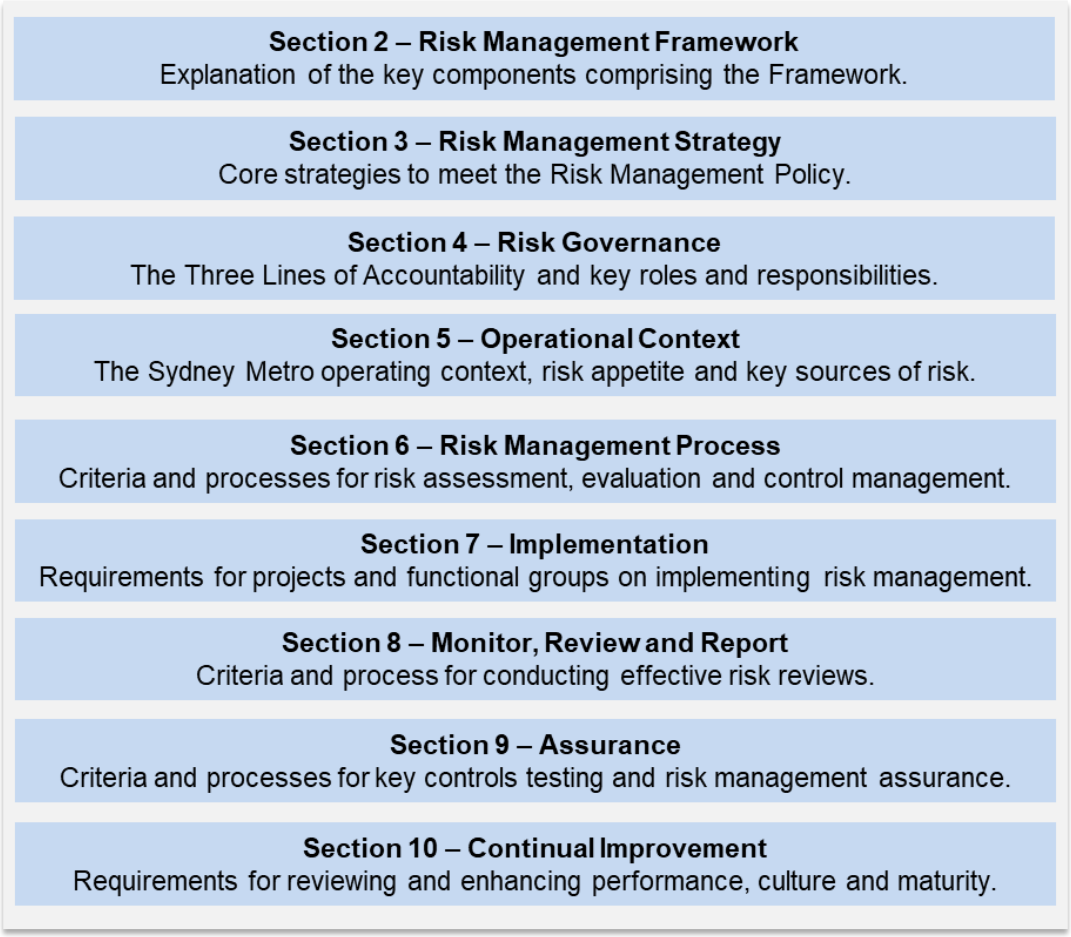


Figure 2: Document Structure and Content

1.4. Scope of Application

This Standard is applicable to all functions, projects, operations and activities undertaken by Sydney Metro.

Requirements for specific business processes (e.g. Health and Safety, Safety in Design, Systems Safety, Fraud and Corruption Prevention etc) are to be sourced by referencing the corresponding areas within the Sydney Metro IMS.

1.5. Terms and Definitions

Specific definitions pertaining to this document are detailed below in Table 1 and, where appropriate, are aligned to **AS/NZS ISO 31000:2018 "Risk Management".**

Table 1: Key Definitions

Term	Definition
Risk	The effect of uncertainty on objectives. *The outcome of risk is a deviation from the expected and can be either positive or negative.*
Risk Appetite	The amount and type of risk Sydney Metro is prepared to seek or accept in pursuit of our objectives. *This is the point where the balance between risk and reward is considered to be optimal.*
Risk Limit	Limits designed to cascade Risk Appetite Statements (RAS) to a day-to-day management level and is the point where management intervention is anticipated to minimise exceeding Risk Tolerance.
Risk Tolerance	The levels of risk taking acceptable to achieve a specific objective or manage a risk. *Risk tolerance represents the practical application of risk appetite and is aligned to risk consequences.*
Risk Treatment	Risk treatment is the process to modify risk and can involve avoiding, transferring, mitigating and accepting the risk.
Control	A Control is a specific action that reduces the likelihood and/or the impact of a risk. *Controls can be recurring activities or one-off actions and are typically characterised by their modifying effect on risk. Controls can be preventative, detective or mitigating.*
Key Control	A Key Control is of fundamental importance to Sydney Metro due to the material (the most direct and effective) effect it has on risk(s) and is usually considered as 'non-negotiable'.
Compensating Control	Controls not classified as Key Controls but nonetheless important to aid risk management.
Risk Breakdown Structure (RBS)	A set of defined hierarchical categories used for risk identification, analysis, aggregation, key controls and reporting. *Also known as Risk Categories or Risk Taxonomy.*
Functional Risk	Risk which have the potential to impact business objectives predominantly driven by people, systems, and processes.
Project Risk	Risk which have the potential to impact project objectives at any stage during the project lifecycle.
Inherent Rating	The level of risk without consideration to existing controls e.g. in scenario analysis if all controls fail.
Current Residual Rating	The level of risk with consideration to existing controls and their effectiveness.
Target Residual Rating	The level of risk with consideration to existing controls, control effectiveness and likely effect of planned treatments.
RAS Metrics	Measures used to monitor the level of organisational compliance with Risk Appetite. Also known as Key Risk Indicators.
QCRA	Quantitative Cost Risk Analysis (QCRA) is undertaken to support high confidence cost estimation.
QSRA	Quantitative Schedule Risk Analysis (QSRA) is undertaken to support high confidence schedule development and is a key input into the QCRA process.

1.6. Accountability

The Sydney Metro Deputy Executive Director, Finance & Risk is accountable for this Standard. Accountability includes authorising this document, implementing and monitoring its effectiveness, and performing a formal management review of the document.

Compliance with this Standard is mandatory for all Sydney Metro staff, service providers, consultants, and specialist advisors (Note: Contractors need to comply with Appendix E: Contractor Risk Management Minimum Requirements).

Direct Reports to the Sydney Metro Chief Executive or other designated functional managers and Project Directors are accountable for ensuring:

- The requirements of this Standard are implemented within their areas of responsibility; and
- Staff, Contractors, Consultants and Service Providers comply with the requirements of this Standard.

Should any ambiguity, uncertainty or barriers to implementation exist in relation to this Standard guidance must be sought in the first instance from the Enterprise Risk team.

2. Risk Management Framework

The Sydney Metro RMF, detailed below at Table 2, is a comprehensive set of organisational arrangements for the design, implementation, monitoring, review, reporting and continual improvement of risk management at Sydney Metro.

The RMF has been developed with reference to industry best practice; in line with the requirements of **AS/NZS ISO 31000:2018 "Risk Management"** and in line with the **Internal Audit and Risk Management Policy for the NSW Public Sector (TPP 15-03)**.

Table 2: Risk Management Framework Components

Component	Description
Overarching Requirements	
Policy	Policy document affirming Sydney Metro's commitment, objectives and high-level requirements in relation to risk management.
Risk Appetite	Board endorsed statement of the amount and type of risk Sydney Metro is willing to take in order to meet its goals and objectives.
Risk Management Standard	Sets minimum requirements for risk management across all key areas and elements of Sydney Metro (*this document*).
Charters/TORs	Charters/Terms of Reference for: • Board/Audit and Risk Committee • Senior Management Committee • Sydney Metro Sub-Committees.
Procedures	
Quantitative Cost Risk Assessment (QCRA)	Defines minimum requirements and process for conducting quantitative cost risk assessments.
Quantitative Schedule Risk Assessment (QSRA)	Defines minimum requirements and process for conducting quantitative schedule risk assessments.
Implementation Forums/Plans	
Risk Management Community of Practice	Forum led by Enterprise Risk for Sydney Metro risk management resources to share knowledge, drive implementation and trouble-shoot issues.
Implementation Plans	Stand-alone documents detailing agreed initiatives, activities and timescales to embed and improve risk management across Sydney Metro.
Project Risk Management Plans	Detailed project specific document outlining all risk management requirements, criteria, roles and responsibilities and inclusive of project core risk management strategies and implementation activities.
Performance and Assurance	
Performance Review	Process for conducting periodic review of risk management across Sydney Metro to identify and address areas for improvement, lessons learned and common issues.
Periodic Surveys	Process for conducting periodic surveys to assess risk culture and risk management more generally.
Management Attestation	Regular statement by senior management that risks are identified, assessed, managed and reported in accordance with specified requirements. Internal attestation process to support the Chief Executive's attestation to the TfNSW Secretary.

Component	Description
Resourcing and Training	
Resourcing	Reference and resource material relating to: • Risk Organisational Structure • Position Descriptions • Requisite competencies, experience and expertise.
Staff General Induction	Risk management specific content within the broader induction process for new starters.
Risk Management Training	General risk management including overview of QCRA, QSRA and Risk Management Information System (RMIS) software.
Tools and Templates	
Risk Management Information System (RMIS)	Application software and database for recording, assessment, management and reporting of all material risks and opportunities across Sydney Metro.
Project Risk Management Plan (RMP) Template	Project Risk Management Plan template for adoption on all phases of all projects in development and delivery.
Risk Report Templates	Mandatory templates for all Line 1 and Line 2 risk reports.
QCRA and QSRA Report Templates	Mandatory templates for QCRA/QSRA reports from Business Case through to Project Delivery.

3. Risk Management Strategy

Risk management strategy outlines the high-level approach Sydney Metro will adopt in order to support the broader business in achieving its objectives and meeting its compliance obligations. Table 3 below summaries Sydney Metro's overarching risk management strategies which will be reviewed and amended as appropriate.

Table 3: Risk Management Strategy

Element	Strategies
Organisational Structure	• Adoption of a contemporary Three Lines of Accountability model which facilitates ownership of risks and controls, appropriate level of assurance and supports effective decision-making processes. • Advice, management and oversight of relevant risks and controls by Functional Subject Matter Experts across Sydney Metro Projects.
Risk Framework	• Design, implementation and continual improvement of a comprehensive risk and control management framework which spans across all areas of Sydney Metro.
Capability and Capacity	• Recruitment, training and development of in-house risk and assurance resources to lead the design, implementation and continual improvement of risk management across Sydney Metro.
Organisational Culture	• Proactive leadership which directly cultivates a positive risk culture by supporting training and development, promoting proactive risk management, empowering management to make risk-informed decisions and encouraging transparency through risk escalation and reporting.
Business Operations	• Identification of all foreseeable material risks. • Management of risks in line with SM-20-00089224 Sydney Metro Risk Appetite. • Allocation of risks to the party best able to manage them. • Development of "high-confidence" cost estimates and schedules. • Demonstrable continual improvement in risk management.
Systems and Software	• Implementation of fit-for-purpose RMIS and tools to support the effective risk management and reporting.

4. Risk Governance

4.1. Three Lines of Accountability

Sydney Metro's risk governance is based on a contemporary "Three Lines of Accountability" model (also known as "Three Lines of Defence" model). Under this model, specific risk management roles and responsibilities are allocated within Sydney Metro as summarised below in Figure 3.

Figure 3: Three Lines of Accountability

4.2. Roles and Responsibilities

4.2.1. Sydney Metro Board

The Board play a vital role in risk management at Sydney Metro and are ultimately accountable for the efficacy of the Risk Management Framework. The Board Charter includes reference to risk management, summarised as follows:

- Establishing and maintaining an effective governance structure.
- Setting of the risk appetite and approval of SM-20-00089224 Sydney Metro Risk Appetite.
- Approval of Sydney Metro's risk management strategy.
- Forming a view of the risk culture in the organisation, and the extent to which that culture supports the ability to operate consistently within its risk appetite.
- Identifying any desirable changes to the risk culture and ensuring steps are taken to address those changes.

4.2.2. Audit and Risk Committee

The Board Audit & Risk Sub-Committee (ARC) is responsible for overseeing the risk management process across Sydney Metro. The ARC Charter sets out the details for levels of monitoring required by the Committee. The Committee receives reports on the status of risk management from the Deputy Executive Director, Finance & Risk. The Committee also receives reports from the Internal Auditor based on the approved Internal Audit Plan.

4.2.3. Roles and Responsibilities

At Sydney Metro everyone has a role to play with respect to risk. As per the Three Lines of Accountability model, Table 4 details allocation of roles and responsibilities.

Table 4: Risk Related Roles and Responsibilities

1st Line of Accountability – Risk ownership and accountability Maintain day to day ownership and management of risks, controls and treatments in line with risk policy, standard and procedures.	
Chief Executive (CE)	Accountable for: • determining the strategic direction and creating the environment and structures for risk management to allow Sydney Metro to operate effectively; and • ensuring Risk Appetite is effectively embedded in Sydney Metro and approving remedial actions to mitigate instances outside appetite to bring risks within an acceptable level.
Senior Management Committee (SMC)	Responsible for providing strategic leadership and governance for the management of risk, including: • recommending Sydney Metro's risk appetite and tolerance to the Board, • providing oversight of material projects and functional risks, and • embedding risk into strategic discussions and decisions.
Sub-committees	Responsible for oversight of risks within their area of responsibility and embedding risk into committee discussions and decisions.
Responsible Managers Executive Directors, Project Directors, Delivery Directors, and Principal Representatives for Major Contracts	Accountable (within their area of responsibility) for: • championing a positive risk culture; • ensuring all staff are aware of and comply with the RMF; • ensuring there is sufficient risk management expertise, capability and capacity; • ensuring relevant staff are appropriately trained in risk management; • providing oversight of risks, including reviewing and approving risk registers, and reviewing the adequacy and effectiveness of controls and treatments; • implementation and compliance with Risk Appetite within their areas of responsibility and identification of risks which are outside (or trending toward) of appetite and implementation of remedial actions to bring the risks to an acceptable level; and • providing ongoing assurance to the CE and the Board that risks are being managed effectively.
Principal Manager, Risk (Project)	Support Responsible Managers in projects and are responsible for facilitation of risk management practices, including reporting, in accordance with the RMF.
Subject Matter Experts	The Subject Matter Experts (SME) for specific risk categories (e.g. WHS, Security, Procurement, Compliance, Legal) are responsible for providing ongoing advice and support to Line 1 within their area of expertise, including: • identifying, reviewing, assessing and challenging the completeness, accuracy, and quality of risk management information; • escalating issues as necessary to SMC/Chief Executive/Board; and • accountable for the design and implementation of Key Controls such as standards, processes, and procedures and ensuring their alignment with the RMF.
Individuals	Responsible for complying with the RMF and implementing the requirements within their area of responsibility.

2nd Line of Accountability – Independent oversight and challenge Establish the risk management framework, challenge and advice on risk and facilitate reports to the Board/ARC.	
Deputy Executive Director Finance & Risk	Accountable for: • implementing and maintaining the RMF; • communication of RAS to the organisation through the RMF; • monitoring RAS metrics and advice to the Board on their suitability and performance; and • reporting of organisational compliance with the RAS.
Director, Risk	Responsible for the RMF and facilitating the implementation of this framework, including: • establishing policies, guidance and business rules for effective risk management; • overseeing implementation/embedding of the RMF and its minimum standards throughout Sydney Metro; • reviewing, assessing and challenging the completeness and quality of risk management and risk information received/reported; and • facilitating risk reporting to the Board/ARC, and as required, to Sydney Metro governance committees.
3rd Line of Accountability – Independent Assurance Provide independent and objective assurance on the effectiveness of risk management, control and governance processes.	
Internal Audit	Accountable for providing independent: • review of risk management practices and effectiveness of Sydney Metro's RMF; • assurance of compliance with the RAS; and • evaluation, testing and reporting on the design and effectiveness of internal controls in accordance with the Annual Internal Audit Plan.

4.3. Risk Resourcing

As per Table 4, Responsible Managers are accountable for ensuring their respective areas are supported with the necessary risk management expertise, capability, and capacity.

Risk resourcing at Sydney Metro is structured into two broad areas, being:

- **Enterprise Risk Function:** Exists within the Corporate Services Division and:
  - owns the risk management framework and provides risk management leadership and guidance;
  - supports effective risk management in functional areas; and
  - provides assurance across all functional areas and in project management.
- **Project Risk Function:** Exists within Project Management Office (PMO) to ensure effective implementation of risk management in support of project delivery outcomes for individual projects.

Each team provides representation to **the Sydney Metro Risk Community of Practice**, the overarching purpose of which is to work collaboratively to implement and continually improve risk management at Sydney Metro. Figure 4 below shows the risk roles, relationships and reporting lines.

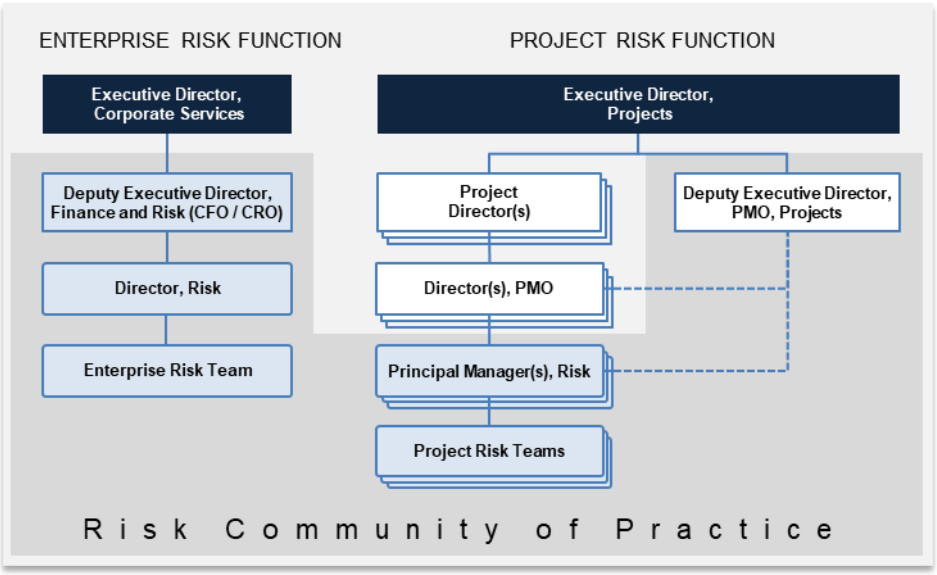


Figure 4: Risk Management Roles and Organisational Structure

5. Context

5.1. Operating Environment

The Sydney Metro operating context is made up of the internal and external environment in which Sydney Metro seeks to achieve its objectives. Figure 5 below details the high-level Sydney Metro operational context.

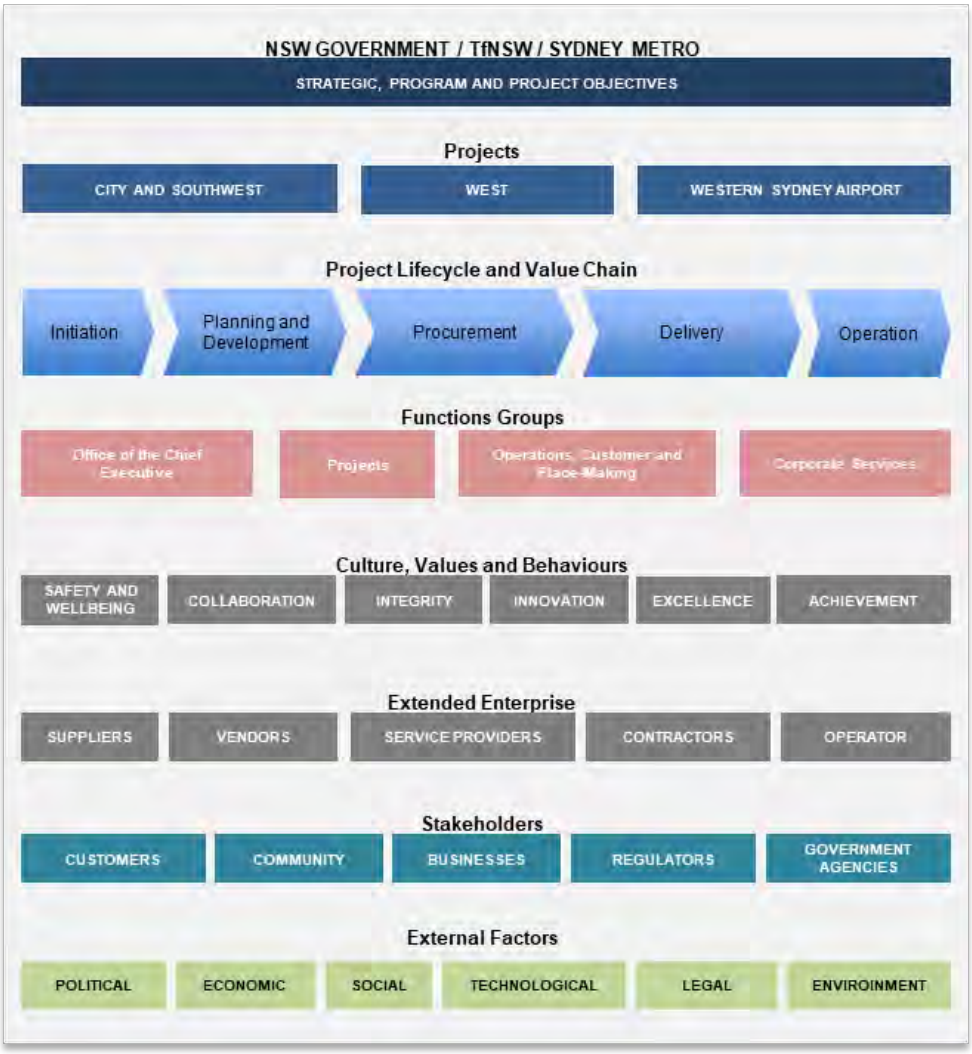


Figure 5: Sydney Metro Operational Context

5.2. Risk Appetite

A critical element of the Sydney Metro context is our risk appetite. SM-20-00089224 Sydney Metro Risk Appetite details the amount and type of risk Sydney Metro is willing to take in pursuit of its objectives. This section provides a summary of the Risk Appetite document.

Figure 6 below summarises how Sydney Metro expresses its appetite and the organisational philosophy towards risk-taking.

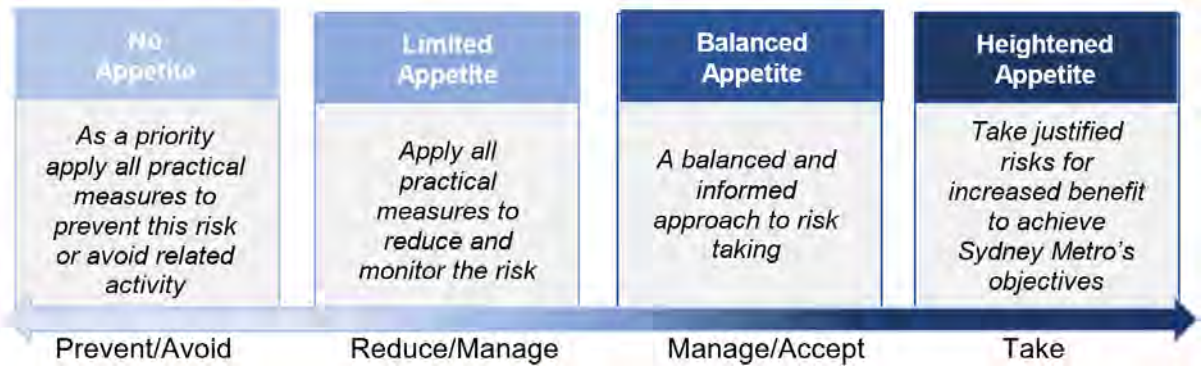


Figure 6: Extent of risk appetite

5.2.1. Risk Appetite Operation

The approach to operationalise Risk Appetite is depicted in Figure 7and described below.

- **Measure Risk Tolerances (Line 2):** Organisational compliance against the RAS is monitored at an enterprise level by Line 2 using a combination of tolerances. These are set:
  - For individual risk appetite statements utilising the RAS Metrics; and
  - For individual risks utilising SM-19-00028213 Sydney Metro Risk Matrix and assessment of their control effectiveness.
- **Assess Risk Appetite (Line 2):** A combined assessment of the above sources by Line 2 indicates whether Sydney Metro is operating within its target Risk Appetite. Risk Appetite areas which are increasing or approaching risk appetite are required to be reported as Amber (Within Appetite) and risks outside of risk appetite are to be reported as Red (Outside of Appetite).
- **Management Response (Line 1):** Board endorsement is required for any plans impacting Risk Appetite and management response to mitigate instances outside appetite to bring back to a tolerable level. To facilitate management response, a RAS mitigation plan is assigned to an Accountable Executive (or Delegate).

Figure 7: Risk Appetite Operation

5.3. Risk Breakdown Structure

Sydney Metro operates in a complex risk and control environment. To address this complexity, a Risk Breakdown Structure (RBS) has been adopted to categorise functional and project risks and used to aid with:

- risk identification;
- management of similar risks (including aggregation);
- application of corresponding controls; and
- oversight, reporting and analysis of related or similar risks.

The RBS is largely causation based with the goal of representing all key sources of risk within our Operating Context. The RBS enables effective advice, management and oversight by relevant Functional Subject Matter Experts across relevant risks and controls.

The RBS covers both Enterprise and Project risk categories and is detailed at Appendix A: Risk Breakdown Structure.

6. Risk Management Process

This section details the minimum requirements for the Sydney Metro core risk management process as well as critical processes for Control Design and Implementation, and Risk Aggregation, both of which are required to establish a comprehensive risk profile or risk assessment.

As shown in Figure 8 below, once a detailed risk assessment is created, other necessary supporting processes can then be implemented (shown in grey and explained in subsequent sections of this Standard).

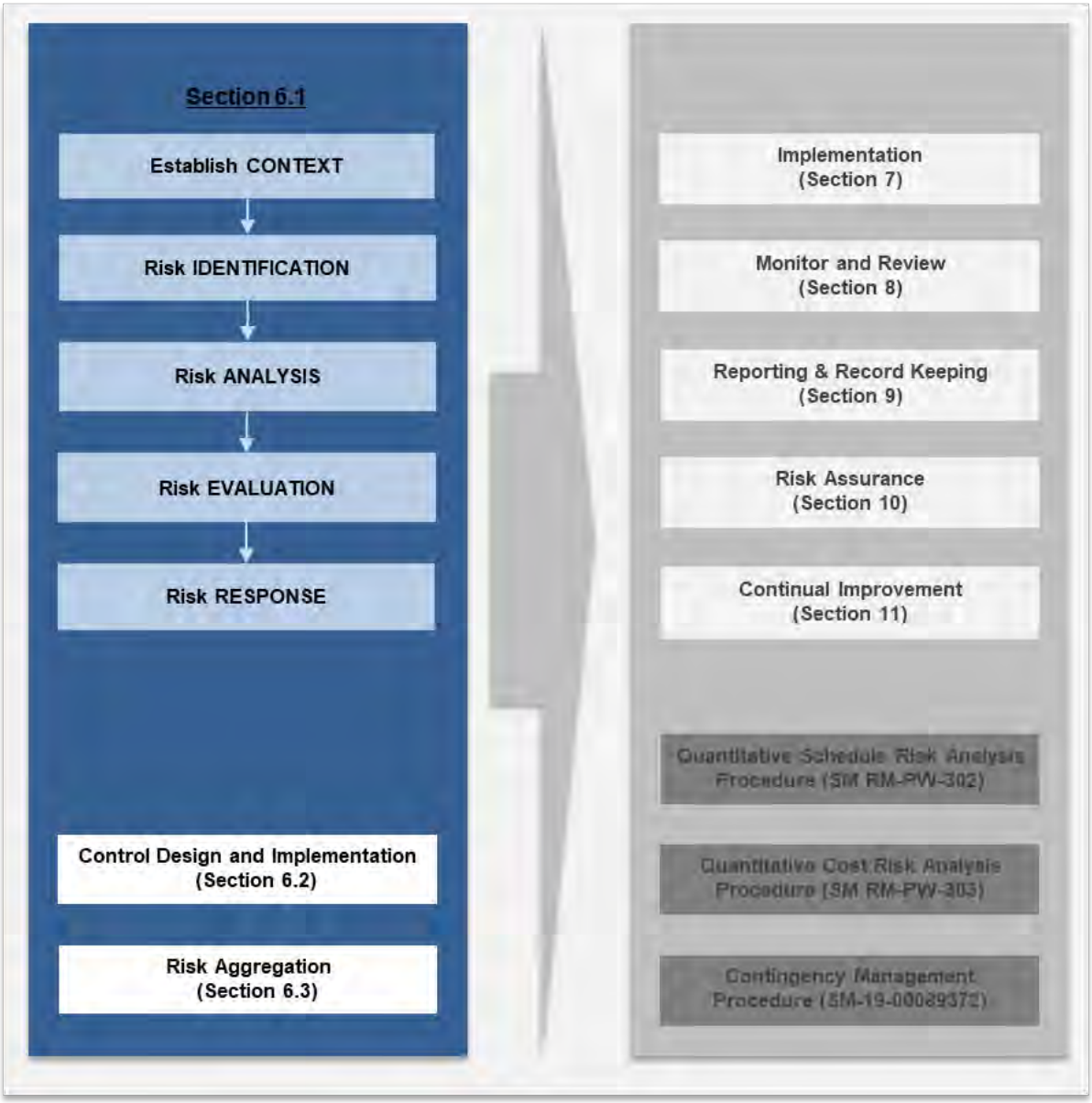


Figure 8: Risk Management Processes

6.1. Core Process Requirements

Core risk management process minimum requirements are detailed below at Table 5 and the detailed guidance provided at Appendix B: Risk Management Process Guidance.

Table 5: Core Process Minimum Requirements

Element		Minimum Requirement
Establish CONTEXT		Context is developed at the outset of the process and with reference to the internal, external and risk management context.
Risk IDENTIFICATION	**Timing**	• Risk Identification shall be undertaken formally at the outset of any new activity, project or planned change. • At appropriate times, frequency and level of detail reflective of the criticality and importance of the associated objectives. • Throughout the project life-cycle. • At least annually for functional groups.
	Methodology	Methodologies, tools and techniques are appropriate to the assessment, the subject matter and the participants.
	Scope	• All sources of risk are considered, including those beyond the control of Sydney Metro. • Key assumptions and potential knock on impacts are also considered. • Threats and opportunities are considered.
	Descriptions	Risk descriptions will include the **event**, key **causes** and key **consequences** and be written in form such that "*Risk event due to (root) cause(s) leading to consequences*".
	Owner	• Risks are assigned to an **individual** from Sydney Metro with delegated responsibility for the risk. • Risks are assigned to the **organisation** contractually or otherwise responsible for the risk e.g. D&C Contractor, Sydney Trains etc. **Note**: Where risks identified are owned by an organisation other than Sydney Metro it remains a requirement that a Sydney Metro individual is nominated as the named "Responsible Person".
	Categorisation	Risks are categorised as: • Project or Enterprise; • RBS categories using Appendix A: Risk Breakdown Structure; and • Threat or Opportunity.
Risk ANALYSIS	**Causes**	Key causes, in particular root cause(s), are identified, prioritised and captured.
	Impacts/ Consequences	The risk impact(s) are identified and captured with consideration to all applicable consequence categories.
	Inherent Rating	The Inherent Rating is assessed for all potential consequences and captured using the highest resultant rating using the criteria in Appendix C: Sydney Metro Risk Matrix.

Element		Minimum Requirement
Risk ANALYSIS (continued)	**Controls**	• Controls are designed and implemented to address material causes and consequences (refer Appendix C: Sydney Metro Risk Matrix). • Key Controls are added from the **Controls Library** as appropriate, followed by additional risk specific controls. • **Control Type** is identified (preventative, detective, mitigating). • **Control Owner** is assigned to each control. • **Control effectiveness** is assessed. • **Frequency of Review** is set for all Key controls.
	Overall Control Effectiveness	Overall Control Effectiveness is determined using the design effectiveness and operating effectiveness criteria in Appendix B: Risk Management Process Guidance.
Risk EVALUATION	**Current Residual Rating**	The Current Residual Rating is assessed for all potential consequences and with consideration of the Overall Effectiveness of Current Controls and is captured using the highest resultant rating using the criteria Appendix C: Sydney Metro Risk Matrix.
	Tolerance	All risks are evaluated to determine if they are within or outside of defined tolerance levels with reference to the criteria in Appendix D: Risk Tolerance and Response Criteria.
Risk RESPONSE	**Treatment Approach**	• For threats, the Treatment Approach is to be classified as *Avoid, Reduce, Transfer (or sharing), or Accept*. • For Opportunities, Risk Treatment Plans are classified as *Exploit, Share, Enhance or Ignore*. Costs associated with Treatments must be approved and budgeted i.e. not assumed to be funded from contingency.
	Treatments Actions	• Additional treatments (which may include controls from the Control Library) are identified for implementation to reduce the risk to within defined tolerance levels. • **Treatment Owners** and **Due Dates** are set for commencement and completion of all Treatments.
	Target Residual Rating	The Target Residual Rating is assessed for all potential consequences and with consideration to effectiveness of **Current Controls** and the mitigation effect of **Planned Treatment Actions** and is captured using the highest resultant rating using the criteria in Appendix C: Sydney Metro Risk Matrix.
Risk OCCURRENCE	**Next steps**	In the event of risk occurrence the following processes are required to be initiated: • **Issues Management**: Material issues are managed in accordance with Project Management Plan/Issue Management Procedure; • **Contingency Management/Forecast Adjustment**: Cost impacts associated with new issues are to be accounted for within the forecast (as applicable) and contingency adjusted and in accordance with SM-19-00089372 Contingency management procedure; • **Lessons Learned**: the risk/issue is to be added as a "Lesson Learned" in accordance with SM-20-00085178 Lessons management framework.

6.2. Control Management Requirements

Creation of a rigorous control environment is a critical element of the Sydney Metro risk management process. It is therefore imperative controls are well designed and effectively implemented such that they fulfil their objective in reducing and managing risk.

Sydney Metro categorise controls by:

- **Type:** Controls are Preventative, Detective or Mitigating; and
- **Importance:** Controls are classified as “Key Controls” and “Compensating Controls”.

6.2.1. Control Type

Controls are to be classified based on risk modification impact as per Table 6 below.

Table 6: Control Types

Type	Function/Purpose
Preventative	Reduce uncertainty, prevent the risk event, or reduce the likelihood.
Detective	Identify if a risk event is initiating to either prevent or reduce the impact.
Mitigating	Respond to risk events to mitigate adverse impacts or enhance positive impacts.

6.2.2. Control Importance (Key Controls)

Controls of fundamental importance to Sydney Metro are termed Key Controls. Key Controls can be either project specific or enterprise related and are designated as such due to the material effect they have on risk(s). Table 7 below details minimum requirements for Key Controls.

Table 7: Key Controls Minimum Requirements

Attribute	Minimum Requirement
Alignment to a “Control Objective”	• Control Objectives are a clear and concise statement of intent and provide a specific objective against which design and operating effectiveness can be tested (noting control objectives may link to multiple controls). • Examples of Control Objective statements include: o To resolve/reduce a particular area of uncertainty; o To validate or test key assumption(s); o To ensure information is accurate and complete; o To ensure approvals or authorisations have been gained; and o To put in place stops to limit adverse impacts.

Attribute	Minimum Requirement
Design Effectiveness (DE)	• The Control meets the Control Objective; • The Control is documented clearly and succinctly to support compliance and consistency; • The necessary training, expertise, and experience to perform the Control is specified; • The act of performing the control does not give rise to any additional risk e.g. conflict of interest; • The timing and frequency of control application is appropriate; and • There is a clear escalation process should issues arise.
Operating Effectiveness (OE)	• Implemented in accordance with control design; • Controls are assigned to all applicable and appropriate risks; • Controls are allocated to persons with the necessary skill, expertise, and experience; • Appropriate resources are allocated as required to allow full and timely implementation; and • Evidence of control implementation and monitoring is generated and retained for the purposes of monitoring, reviewing and testing.
Recording Controls	• What the specific action, task or process to be followed is (succinctly and without jargon); • Who is responsible for implementing the control; • When or how often the control is performed; and • How the control is evidenced.
Governance	• Key Controls are set by Responsible Managers in consultation with Enterprise Risk.
Testing	• All Key Controls are regularly reviewed. • Design Effectiveness (DE) and Operating Effectiveness (OE) Testing must be conducted as per Section 9.1.

6.3. Risk Aggregation

Risk aggregation is the combination of multiple risks in order to develop a more complete understanding of the overall risk. Aggregating risk provides management with a true picture of risk exposure, thereby allowing a more efficient and effective risk response to be developed.

Risk aggregation can be performed either qualitatively or quantitatively (QCRA is an example of risk aggregation). Either way, risk aggregation must be performed with pragmatism such that the aggregated risk exposure is estimated at a meaningful and manageable level.

At Sydney Metro risk aggregation can be performed using the following points either individually or in combination:

- **Business Unit:** i.e. by Team, Functional Group, Contract/Package or Project
- **Risk Breakdown Structure:** i.e. by risk category Level 1 or Level 2.
- **Consequence:** i.e. by impact category such as Financial, Reputation etc.
- **Objective:** i.e. by specific project, business, or strategic objectives
- **Risk:** i.e. where similar or identical risks exist across multiple contracts, projects, teams or groups.

Where risk aggregation results in the creation of a “Summary” or “Parent” level risk, the “Parent” level risk is required to be entered into the RMIS and then linked to the relevant “Child” risks. Linking risks enables aggregated risk assessment and reporting to be undertaken with relevant information at hand.

7. Implementation

Given the size and scale of Sydney Metro combined with the diverse and comprehensive range of obligations and requirements, both internal and external; it is essential that risk management is implemented in a systematic and progressive manner.

7.1. Planning

Implementation of risk management across Sydney Metro will be undertaken with the overarching goal of achieving our risk management objectives (refer Section 1.2). To ensure Sydney Metro stays on track and can demonstrate progress towards our objectives, Implementation Plans are required to be developed inclusive of the following details:

- Relevant context including information and insights gathered from recent culture surveys, performance reviews and the like;
- Proposed key activities, tasks, and schedule across a 12 month calendar year horizon;
- Key roles and responsibilities specific to implementation management;
- Required resources (both financial and human) to support implementation;
- Training requirements e.g. in relation to process, procedure, software; and
- Approval from the relevant Responsible Manager.

Projects are required to detail implementation plans within their respective Project Risk Management Plans (PRMP) as per the Project Risk Management Plan Template.

7.2. Functional Risk Management Requirements

Functional risk management implementation shall be integrated and implemented as per Table 8.

Table 8: Function Risk Management Minimum Requirements

Business Area	Minimum Requirement
Work Health and Safety	WHS specific risk assessments will be conducted for all aspects of Sydney Metro operations and in accordance with the requirements Sydney Metro's Health & Safety Management System.
Corporate Plan	Strategic risk assessment will be conducted as a core activity during development of the Corporate Plan.
Business Plans	Functional group risk assessments will be performed in tandem with annual business planning and ongoing management of services and deliverables.
Compliance Obligations	Key statutory, regulatory, and internal compliance obligations will be risk assessed.
Fraud and Corruption	Fraud and corruption risk assessments will be undertaken in accordance with the Sydney Metro Fraud Control Framework.
Business Continuity	Risk assessments will inform development and update of business continuity crisis management and disaster recovery plans.

Business Area	Minimum Requirement
Procurement (non-Project)	Risk assessments as required under the Sydney Metro Procurement Policy will inform the procurement of goods and services.
Security and Threat	Security and threat risk assessments will be undertaken in relation to support the protection of Sydney Metro people and assets.
Insurance	Risk assessment will inform all key insurance related decisions.

7.3. Project Phase Risk Management Requirements

Project risk management will be implemented in accordance with the minimum requirements detailed below at Table 9.

Table 9: Project Risk Management Minimum Requirements

Project Phase	Minimum Requirement
All	• Projects are required to prepare phase specific Risk Management Plans (RMP) in accordance with the Project Risk Management Plan Template; • Projects are required to reflect the requirements of Section 6.1 within their respective Project RMP; • Development and implementation of "Package versus Project Risk Assumptions" i.e. clarification of what risks are owned and managed at Package level versus Project level; • Packages Add Project-Package escalation as a requirement in Project RMP.
Strategic Planning	• Specific, tailored risk assessments are conducted for all strategic options.
Strategic/Final Business Case	• Comprehensive identification, assessment and treatment of all material threats and opportunities to achievement of project objectives (ongoing through to project completion); • Identification and assessment of the risk(s) of not proceeding with the proposed project (i.e. the do nothing option) or non-preferred strategic option; • Inclusion of details regarding key decisions taken that either avoid risks, capture opportunities, or materially alter known threats and opportunities; • Iterative schedule risk assessment in accordance with **Quantitative Schedule Risk Analysis Procedure** (ongoing through to end of Delivery Management); and • Iterative probabilistic cost risk assessment in accordance with **Quantitative Cost Risk Analysis Procedure** (ongoing through to end of Delivery Management).
Project Development	• Creation and maintenance of Project/Package specific Design Risk Register(s) including risk assessments to support the demonstration of "Safe SFAIRP (So Far As Is Reasonably Practicable) in relation to Safety in Design; • Assessment of risks associated with material changes including those to project scope, delivery strategy, contract type, project timescales, designs and technical criteria, construction techniques etc. (ongoing through to project completion); and • Incorporation of risk management within value engineering activities (ongoing through to project completion).
Planning Approval	• Preparation of an Environmental risk assessment for inclusion in the Application for Planning Approval.

Project Phase	Minimum Requirement
Packaging/ Procurement	• Assessment of risks and opportunities associated with available options for delivery strategy, contracting mechanisms and contract risk allocation (including consideration of NSW Government Commitment to Construction Sector); • Assessment of procurement process related risks prior to release of any Request for Tender; • Development and inclusion of risk management contract requirements and tender deliverables as part of EOI and RfP documentation (refer to Appendix E: Contractor Risk Management Minimum Requirements); • Review and confirm tenderer compliance with risk requirements in RfP; and • Risk informed tender evaluation to take account of how each tenderers' proposal manages project risks including those owned by Sydney Metro and the State. Additionally, use risk management to ensure tenderer specific risk profiles, limited liabilities and excluded risks are accounted for within the evaluation and resultant decision.
Delivery Management	• Review of service provider and contractor RMP(s) and Risk Registers both as part of pre-start deliverables check and then ongoing throughout delivery; • Contingency management in accordance with SM-19-00089372 Contingency management procedure; and • Review and escalation of material Contractor risks in particular those with potential client or stakeholder impacts.
Handover to Operations	Transfer of open risks impacting operations to Sydney Metro Operations Team or Operations Contractor

7.4. People and Culture

7.4.1. Competencies, Skills and Training

Key measures to embed risk management as a core capability within Sydney Metro include:

- Inclusion of risk management as an induction topic embedding its importance within the organisation;
- Provision of entry level risk management training to provide staff with an overview of Sydney Metro key risk management requirements and processes;
- Development of training needs analysis to address gaps in required competencies and skills;
- Arrangement of in-house and/or third party provider courses for staff involved in specialist risk management activities; and
- Procurement/provision of risk management specialists to ensure necessary competencies, skills, capability and capacity exists to meet project and functional group requirements.

7.4.2. Risk Culture

A healthy risk culture is one where staff at every level appropriately manage risk as a normal part of their day-to-day activities and work to continually improve how the risk function and business lines work together to ensure consistent risk information is shared across the business.

Such a culture supports an open discussion about risks and opportunities, encourages staff to express concerns, and maintains processes to elevate concerns to appropriate levels. This, in turn, encourages a productive working environment, supports proactive and effective management of risks and ultimately delivers improved performance and savings.

The Sydney Metro Risk Culture model is based on well-documented guidance from The Institute of Risk Management (IRM). See Executive Summary Risk Culture: Guidance for Boards for more details.

The model depicted at Figure 9 focuses on eight aspects of risk culture, grouped into four themes, key indicators of the 'health' of a risk culture. The model links with the sociability vs. solidarity analysis through planned action to address deficiencies in the current culture. It considers culture in relation to two key dimensions:

- sociability (people focus – based on how well people get on socially); and
- solidarity (task focus – based on goal orientation and team performance).

In order to implement risk management more effectively, organisations should seek to strengthen both their sociability and solidarity ratings. The risk culture aspects model specifically links the aspects shown in red to greater impact on sociability and the *blue* aspects to improvements in solidarity.

Figure 9: Risk Culture Model

The IRM practitioner toolkit supports a practical implementation of this model:

1. **Evaluate the current culture:** A simple self-assessment questionnaire will measure Sydney Metro's risk culture against eight areas. This assessment is required periodically.
2. **Plan and implement our cultural change:** A gap analysis will provide pointers to areas of strength and weakness and help to identify tangible actions to address areas of concern. Those will have to be agreed and supported by Senior Management and the Board/ARC, and assigned for implementation.
3. **Monitor and adapt:** The model presupposes a continuous improvement approach where a risk culture is moved incrementally and performance tracked periodically.

7.5. Record Keeping

All project specific and functional group risk assessments are required to be recorded in the Sydney Metro RMIS as per the minimum data fields specified in Section 6.1.

Service Provider specific risk assessments such as those pertaining to Project Planning Approval related Environmental Risk Assessments or Project Development Phase Design Risk Assessments must comply with the Sydney Metro Risk Register template.

In addition to the RMIS, the following records are to be retained as evidence of the risk management process include:

- **Risk Identification:** Risk workshop records including purpose, objectives, scope, attendees, date, and time, actions, and outcomes;
- **Risk Analysis and Evaluation:** Records associated with development of risk causation, consequences and evaluation against risk tolerance and acceptance criteria;
- **Risk Aggregation:** Analysis undertaken in relation to risk aggregation;
- **Monitor and Review:** All risk monitor and review activities, meetings and workshops (recorded directly into the RMIS as appropriate or otherwise recorded as meeting minutes);
- **Control Testing (Line 1):** Details of all control testing, recorded in the RMIS as per corresponding data fields;
- **Control Assurance (Line 2):** Details of all control assurance activities, either recorded directly in the RMIS or separately within iCentral;
- **Reporting:** Copies of all risk reports generated as per this Risk Standard or otherwise;
- **Performance:** Copies of all performance evaluation, surveys and reports as per this Risk Standard or otherwise;
- **Training records:** Details of training needs plus any in-house or third party provider risk management training undertaken; and
- **Communication:** Details of key communications in relation to risk management, key risks, training and development.

8. Monitor, Review and Report

Monitoring, reviewing and reporting of key risks is a critical step in the risk management process, ensuring quality and transparency and supporting decision making. Formal, structured monitoring and review arrangements maintain efficacy of identified risks and ensures new, emerging or changed risks are identified and addressed in accordance with applicable risk criteria.

8.1. Monitor and Review Requirements

8.1.1. Periodic Risk Review

Sydney Metro apply progressive monitor and review of risks as shown in Figure 10 below.

Figure 10: Monitor and Review Cycle*

** "selected" means Responsible Manager to determine which of the current B risks require attention via formal Project level/Functional Group level review e.g. based on risk proximity/manageability etc.*

The required scope and recommended participants for each different review type is detailed below at Table 10.

Table 10: Periodic Risk Review Forums

Review Type	Review Activities	Participants
Control Owner Reviews	• Confirm Key Control remains valid. • Where circumstances have changed suggest amendments to Risk Owner.	• SMEs (as required) • Risk Manager (optional)

Review Type	Review Activities	Participants
Risk Owner Reviews	• Ensure risks are clearly described and easily understood. • Ensure risks continue to be relevant and current. • Assess validity of likelihood and severity of consequence ratings and amend, as necessary. • Review and update Control Effectiveness as required. • Review status of planned treatments/Identify additional tasks to further reduce risk(s). • Consider if further information is required to improve risk assessment. • Close out risks, controls and tasks as appropriate. • Identify risks for review by others e.g. Responsible Manager(s). • Validate risks are within tolerance, if outside tolerance respond and escalate as appropriate.	• Risk Owner • Control Owners (optional) • Treatment Owners (optional) • Risk Manager (optional)
Line 1 Risk Team	• Conduct Key Control Testing as per Section 9.1.	• Risk Manager • SMEs (as required)
Responsible Manager Reviews	• Review and confirm A and B rated Risks are appropriate, well defined and include appropriate controls, planned treatments, and ratings. • Review Controls including Control Effectiveness. • Identify/validate changed, new, emerging and closed risks. • Identify risks for inclusion in the Project Executive Review.	• Risk Owner • Risk Manager • Control Owners (optional) • Treatment Owners (optional)
Project Executive Reviews	• Review of selected A (Very High) and B (High) plus other escalated risks including progress on treatments and controls. • Identify new project risks developed through the group discussion. • Agree and have a common understanding of the risks that require focused management attention and effort over the next month. • Agree risks for reporting and escalation to the Sydney Metro Board.	• Project Director • Responsible Managers • Risk Manager • Control/Treatment Owners (optional)

8.1.2. Additional Reviews

In addition to defined periodic reviews, certain events or situations may trigger a requirement to conduct additional reviews of risks and/or controls. Potential triggers to be considered for additional risk reviews include (not exhaustive):

- Occurrence of an incident or release of investigation findings;
- Release of audit or review findings (including observations, recommendations and non-compliances);
- New risks, new requirements, new stakeholders, major changes, information, issues, or changes in external factors;
- Concerns or ideas raised by staff, management and third parties; and
- Identification of external factors that could impact on the organisation or project delivery.

8.2. Reporting

8.2.1. Internal Risk Reporting

Sydney Metro's various risk reporting arrangements are shown below at Figure 11.

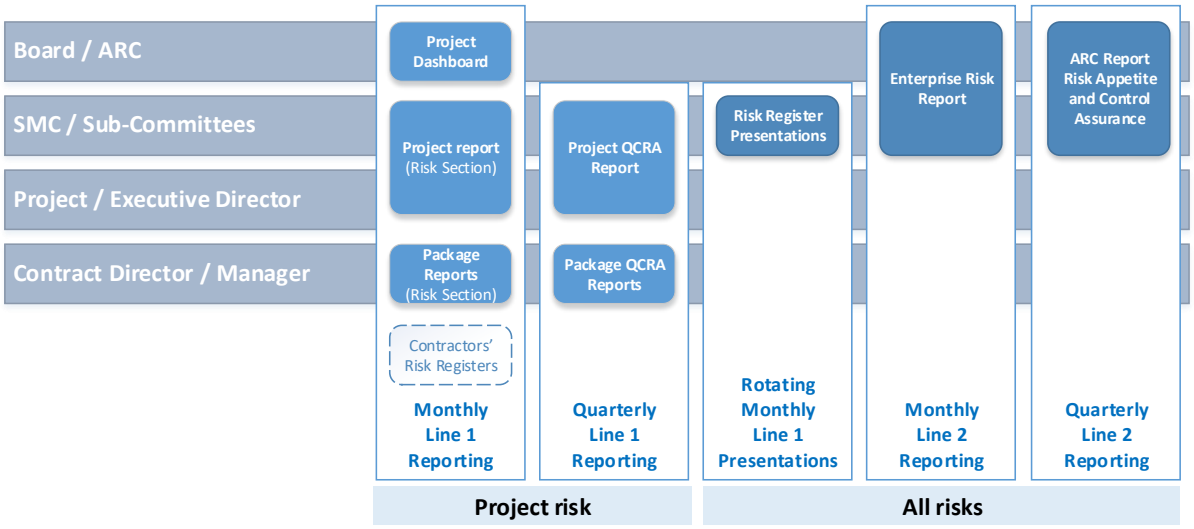


Figure 11: Internal Risk Reporting

Internal risk reporting key requirements inclusive of preparation responsibility, report recipients, frequency and minimum content is detailed below at Table 11.

Table 11: Risk Reporting Key Requirements

Report Title	Prepared by	Recipient	Frequency
	Content		
Enterprise Risk Report	**Enterprise Risk**	**SMC/Board**	**Monthly**
	• Summary level/aggregated key risks. • Summary of Projects and Operations (risk profile, trend and QCRA position). • Risk Management Framework and Culture status update. • Key Risk Management Performance metrics (SMC report only).		
ARC Report	**Enterprise Risk**	**ARC**	**Quarterly**
	• Risks Out of Appetite / Tolerance. • Detailed Risk Appetite Metrics • Status of Control Environment/Key Control testing results. • PLUS other content as required to fulfil the ARC Charter or at ARC request.		
Northwest Operations Monthly Report – Risk Section	**Deputy ED – NW Operations**	**SMC/Board**	**Monthly**
	• Key threats and opportunities c/w ratings and controls. • Risks Out of Appetite/Tolerance. • Key Control test results. • Risk management implementation status.		

Report Title	Prepared by	Recipient	Frequency
	Content		
Project Monthly Report - Risk Section	**Project Director**	**SMC**	**Monthly**
	• Project Directors top risks. • Key risk commentary. • QCRA outputs.		
Package/Contract/ Function SMC Risk Report	**Package/Contract Director or Functional Manager**	**SMC**	**Rotational basis**
	• Projects: As per Project Monthly Report template. • Functions: Responsible Manager's Top Risks.		
Package level Monthly Report – Risk section	**Package/Contract Director**	**Project Director**	**Monthly**
	• As per Project Monthly Report template.		
Project QCRA (post Gate 4)	**Project Director**	**Major Project Sub-Committee**	**Quarterly**
	• As per QCRA Report (Project Delivery Phase) templates.		

8.2.2. External Reporting

External stakeholders to which risk information may be provided include:

- Federal Government;
- NSW Government, including INSW and Treasury;
- Regulators, e.g. ONRSR;
- Consultants, contractors and suppliers; and
- Bidders and tenderers.

Prior to the distribution of any external risk report, consideration shall be given to the sensitivity of the information in the report.

8.2.3. Management Attestation

On an annual basis the Sydney Metro Board is required to complete an Internal Audit and Risk Management Policy attestation to the Transport for NSW Secretary. The attestation requires confirmation Sydney Metro has internal audit and risk management processes in operation which are compliant with the eight core requirements set out in the Internal Audit and Risk Management Policy for the NSW Public Sector.

9. Assurance

Assurance provides management and the Board with important information regarding the strength of the control environment and Sydney Metro's corresponding ability to manage material risks. Assurance at Sydney Metro is conducted across the Three Lines of Accountability as shown at Figure 12 below and provides valuable information for the continual improvement of risk management.

Figure 12: Assurance and Three Lines of Accountability

9.1. Line 1 Assurance

9.1.1. Control Testing

Given our reliance on controls and the reality that some controls may not always exert the intended or assumed modifying effect, it is imperative controls are tested.

Control testing will be performed in accordance with the following minimum requirements:

- Control testing will be focused on Key Controls, however may include other Controls as appropriate;
- Key Controls must be tested for DE and OE compliance as per Section 6.2.1;
- Testing will be conducted by Line 1, aided by subject matter experts and with control owners and performers in attendance as necessary;
- OE is tested using an appropriate methodology such as re-performance, inspection, observation or inquiry (listed here from strongest to weakest);
- OE testing sample size is appropriate and considers key factors including number of risks to which the control applies, experience of controls performers, previous test results, etc; and

- Testing will be conducted in accordance with a Test Plan (testing will typically be undertaken via a "walk through" with relevant stakeholders however will involve more detailed methodologies as appropriate);
- Results of DE and OE testing and Overall Control Effectiveness rating are achieved using the criteria at Appendix B: Risk Management Process Guidance;
- Where DE is assessed as "Poor" or "Inadequate", the control is required to be re-designed prior to OE testing; and
- Where OE is assessed as "Poor" or "Inadequate", a plan must be developed and implemented to improve OE within a timeframe approved by the Control Owner.

Frequency of Key Control testing will be as per Table 12 below.

Table 12: Frequency of Key Control Testing

Frequency of Application	Frequency of Testing
Daily, Weekly, Monthly	Quarterly
Quarterly	6-Monthly
6-monthly, Annual, One-off*	Annual

Note*: "One-off" Key Controls (i.e. performed once only, not recurring) must be tested with due consideration to the relative importance of DE over OE, noting that testing prior to control implementation cannot test for OE, whereas testing after misses the opportunity to fix any DE issues prior to implementation (which may be an issue for one-off controls more so than recurring controls).

9.1.2. Project Risk Assurance

In addition to the Controls Testing outlined at Section 9.1.1, Sydney Metro projects are required to develop and implement Project Risk Assurance plans which align with and address key threats and opportunities and thereby support the achievement of project objectives.

Project Risk Assurance Plans are required to be documented within the Project Risk Management Plan. Key considerations include:

- Project risk profile analysis which provides insights and information relating to key risk themes including but not limited to common causes, inherently high risks, key controls, highly likely risks, areas of considerable/abnormal uncertainty and low probability/high consequence risks;
- What overarching assurance activities will be arranged by the project team, when they will be conducted, who will conduct them and how the assurance activities will address the identified key risk themes; and
- How the assurance activities will be managed so as to avoid overloading project resources or resulting in duplicated effort e.g. with our obligations relating to the INSW Infrastructure Investor Assurance Framework.

9.1.3. Functional Group Risk Assurance

Similar to Project Risk Assurance, Functional Groups are also required to undertake analysis of corresponding risk profiles with the aim of identifying key risk themes for which risk assurance activities will be developed and implemented.

Functional Groups Risk Assurance Plans shall include details of the specific assurance activities to be undertaken, when they will be conducted, who will conduct them and how the assurance activities will address the identified key risk themes.

9.2. Line 2 Assurance (Enterprise Risk)

Enterprise Risk perform a range of risk assurance activities including:

- **Key Controls:** Risk-based review (i.e. with reference to High/Very High Inherent Risks, Key Controls and Control Effectiveness) of Key Controls to confirm design efficacy and operating effectiveness. Where plans are required to enhance DE and/or OE, these will be subsequently monitored and reported on by Line 2 as part of Board and management reporting.
- **Key Risks:** On a periodic basis the Line 2 Risk and Compliance team will challenge and review selected project and business risks to provide assurance to the SMC, Board and ARC. Risks will be selected for challenge and review with reference to Control Testing results, Risk Rating (Inherent and/or Current), at the request of SMC, Board or ARC, or at random.
- **Risk Ratings:** Evaluation of Line 1 risk ratings to confirm they are correct and the controls are reducing the risk to the assessed level.
- **Quantitative Risk Assessments:** Challenge and review of Line 1 QSRA and QCRA results and provision of perspectives across different projects. Also responsible for confirming procedural compliance.

Enterprise Risk will develop an annual plan for Assurance in consultation with all stakeholders to ensure alignment with business and project objectives and key risks as appropriate.

9.3. Line 3 Assurance (Internal Audit)

As per draft **TPP15-03 "Internal Audit and Risk Management Policy for the NSW Public Sector"** (Section 1.1.6), Internal Audit is responsible for providing assurance to the Chief Executive and the Audit & Risk Committee (ARC) on the effectiveness of the risk management framework including the design and operational effectiveness of internal controls.

Internal Audit will fulfil their obligations predominantly by conducting audits in accordance with SM-17-00017068 Audit and Assurance Standard and the Annual Internal Audit Plan.

9.4. INSW Investor Assurance

The INSW Infrastructure Investor Assurance Framework provides independent advice to Sydney Metro (and direct reporting to NSW Cabinet and the Minister for Infrastructure) that proactively contributes to the delivery of the Sydney Metro infrastructure projects to time, budget and in accordance with government objectives.

Sydney Metro projects participate in the INSW Infrastructure Investor Assurance Framework as follows:

- Monitoring conducted by Infrastructure NSW;
- Reporting regularly on projects;
- Gateway, Health Check and Deep Dive Reviews conducted by independent practitioners; and
- Sharing of insights and building capability in the delivery of infrastructure projects.
- Projects' requirements in relation to INSW activities include:
- Responding to queries and feedback in relation to package risks, project risks and overall package/project risk profile;
- Considering suggestions in relation to risk controls and possible treatment strategies;
- Considering suggestions in relation to improving risk management generally; and
- Assessing new or emerging risks as raised by INSW.

10. Continual Improvement

Sydney Metro is committed to continual improvement in risk management through a range of measures including regular performance reviews, culture surveys, risk maturity planning and applying lessons learned.

10.1. Performance Review

Sydney Metro risk management performance reviews will be conducted annually by Enterprise Risk with the aim of evaluating the:

- completeness and currency of project and functional group risk assessments;
- Sydney Metro RMF to ensure risk management is effective and continues to support organisational performance with contemporary best practice;
- performance of Enterprise and Project Risk functions and associated resources; and
- progress of risk management implementation against the plan over the preceding 12 months.

10.1.1. Risk Culture Survey

Sydney Metro risk culture surveys will be conducted periodically by Enterprise Risk with the aim of evaluating the status of risk culture against the Board endorsed Risk Culture Model.

10.2. Lessons Learned

Lessons learned is the knowledge gained from the process of developing and delivering a project, initiative or activity. The goal with lessons learned being to repeat the positives and to avoid the negatives. Lessons can be learned in-house however better still is to learn from other entities or projects who have gone before and hence have valuable knowledge.

Lessons learned are managed within SM-20-00085178 Lessons management framework. Project specific arrangements for lessons learned are to be documented in either the Project Risk Management Plan or the Project Management Plan.

Key opportunities to capture lessons learned are detailed at Table 13 below.

Table 13: Opportunities to capture Lessons Learned

Identification	Application
At the conclusion of a contract, phase or project.	At project initiation, project development, during tender evaluation or prior to a new phase commencement.
Following a risk event or incident.	During the risk analysis/treatment.
Following a recent project success or failure (any type).	Prior to repeating a previously completed task or activity.
After changes are implemented.	During change management planning.
Analysis of trends, data and reporting.	As applicable.
Exit interviews/New starter meetings.	As applicable.

10.3. Risk Maturity

Risk management maturity will be measured annually using the NSW Treasury Risk Maturity Assessment Tool. Targets for growth in Risk Maturity will inform Implementation Planning as outlined at Section 7.

10.4. Business Incidents

Business incidents occur due to inadequate or failed internal processes, personnel or systems. On occasion, controls placed to prevent the risks from eventuating are not as effective as intended and may lead to undesired consequences. Through an incident management process, Sydney Metro can identify, resolve and learn from events which can have a negative impact on organisational objectives.

Reportable business incidents impact or may impact effective and efficient operation of Sydney Metro or expose Sydney Metro to financial or reputational damage. A **Business Incident** is defined as an event which has occurred, a circumstance which could have (near-

miss), or did lead to unintended and/or unnecessary harm, complaint, loss or damage. Near-misses are treated as incidents.

Sydney Metro captures business incidents as part of continual improvement. Business Incident types and reporting criteria are detailed below at Table 14.

Table 14: Business Incident Types and Reporting Criteria

Incident Type	Reportable Incident Criteria	Identification method
Deficiency in effectiveness of a key control	Where Design or Operating Effectiveness is assessed as Poor or Inadequate	Self-evident. Control Testing. Internal Audit activities.
Project risk event	Materialised project risk events *due to control failure* with impact rated C4.	Self-evident/Measurable consequence using Appendix C.
Functional risk event	Materialised functional risk events with impact rated C4.	Self-evident/Measurable consequence using Appendix C.
Non-compliance with internal policy or external obligation	Any non-compliance of an internal policy or an external obligation with the impact of the non-compliance rated to be C5 and above.	Control Testing. Assurance activities. Internal Audit activities.

Assessment of reportable incidents must consider whether aggregation of similar or related instances collectively represent a more severe weakness than the individual issues taken in isolation. Where this is the case, these should be combined into a single record with higher severity.

Business incidents do not include:

- WHS incidents;
- Environmental incidents;
- Fraud and Corruption incidents;
- IT-related system and software related issues and incidents;
- People related matters (e.g. bullying, harassment, grievances);
- Internal and external audit findings, and
- Project issues.

The above incidents and issues will be managed within corresponding processes.

Business incidents are to be captured and managed within SM-20-00085178 Lessons management framework.

11. Related documents and references

Related documents and references
• SM-17-00000181 Sydney Metro Risk Management Policy • SM-20-00089224 Sydney Metro Risk Appetite • SM-17-00017068 Audit and Assurance Standard • SM-20-00085178 Lessons management framework • SM-19-00089372 Contingency management procedure • SM-17-00000203 Sydney Metro glossary

12. Superseded documents

Superseded documents
There are no documents superseded as a result of this document.

13. Document history

Version	Date of approval	Notes
1.0	29 February 2012	New document.
2.0	6 September 2013	Reviewed and updated.
3.0	11 August 2016	Reviewed and updated.
4.0	26 July 2018	Reviewed and updated for Sydney Metro operating agency.
5.0	28 September 2020	Full update.

Appendix A: Risk Breakdown Structure

Enterprise RBS

Category	Area of Risk (not exhaustive)
1. Health & Safety	• Office worker related safety and security • Non-office related risks e.g. visiting site, stakeholder engagement, vehicles etc. • Mental health and well-being
2. Environment	• Environmental and Sustainability • Corridor & Planning
3. Operations	• Northwest Operations and Maintenance • Communication & Community Engagement • Transport Network Integration • Temporary Transport Plan(s)
4. Stakeholder(s)	• Internal and External Stakeholders • Strategy, Communication and Engagement • Perceptions, Interests and Influences • Third Party Agreements
5. Compliance & Legal	• Statutory and Regulatory • Sydney Metro Mandatory Requirements • Legal/Contractual Compliance
6. Resource Management	• Capability, Capacity and Culture • Organisational Structure and Governance • Service Provider Procurement/Management • Office Space and Locations • Succession Planning • Technology and Physical Assets
7. Delivery Management	• Project Management • Customer & Service Planning • Project Development • Engineering & Design • Place Making and Property
8. Finance	• Treasury, Funding and Budgets • Expenditure and Cashflow • Contingency Management • Insurance
9. External	• Political • Economic • Social • Technological • Legal • Environmental

Project RBS

RBS Level 1	RBS Level 2	Examples/Notes
1. Technical/ Design/ Engineering	1.1 Scope definition	Inadequacy of scope definition in design
	1.2 Technical Criteria/Specification	Incorrect technical criteria or specifications used in design
	1.3 Constructability	Designs which are difficult/expensive/not possible to construct
	1.4 Technical interfaces	Design interfaces with other structures or systems
	1.5 Reliability, Availability, Maintainability	Designing to be reliable, available and maintainable
	1.6 Safety & Security in Design	Safety and security adequacy in the design
2. Delivery Management	2.1 Approvals	Planning approvals, environmental approvals etc. required for project
	2.2 Schedule/Program	Productivity, staging, sequencing, critical path, constraints on project
	2.3 Project resourcing	Personnel capability, capacity, culture, churn, succession
	2.4 Health, Safety & Security	Health and Safety, Rail Safety and Security throughout delivery and operations
	2.5 Environment	Natural and cultural heritage, threatened species, noise, dust, vibration
	2.6 Assurance/Compliance	Compliance with Standards and specifications or contract requirements
	2.7 Governance/Management Systems	Appropriateness and effectiveness of review structure and systems to enable this
	2.8 Cost	Direct/indirect cost assumptions, rates, methodology, escalation, contingency
	2.9 Scope	Clarity, allocation, interface etc.
3. Construction	3.1 Scope creep	Preferential engineering by project staff or stakeholders
	3.2 Quality	Standard/compliance of finished work and documentation to verify
	3.3 Physical Interface/Handover	Sydney Metro contracts that physically interface (e.g. due to scope and/or schedule)
	3.4 Site handover/access	Handover of site, condition of site, management of vacant sites, access/egress
	3.5 Site conditions	Existing assets, contamination, valuable finds, latent conditions, flooding
	3.6 Services/Utilities	Public and private utilities/services known and unknown (above and below ground)
	3.7 Sydney Trains	Interfaces with Sydney Trains network, operations and site boundaries

RBS Level 1	RBS Level 2	Examples/Notes
	3.8 Interfacing Projects	Interfaces with any other projects either adjacent or nearby
4. Commercial	4.1 Contractual terms & Conditions	Terms & conditions, payments, insurance, indemnities etc.
	4.2 Procurement	Internal and external procurement, supply chain, probity,
	4.3 Suppliers/vendor performance	Performance of suppliers and vendors
	4.4 Change control	Ineffective/inefficient management of changes
	4.5 Disputes/claims	Potential or actual claims and associated uncertainties
	4.6 Insurance	Coverage, exclusions, claims management including from our contractors and suppliers
5. External	5.1 Legislation/Regulatory	Complying with the law and regulations
	5.2 Financial/Economic	Exchange rates, Interest rates, Funding, Cash flow
	5.3 Inclement weather	Rain, Heat, Wind, Dust
	5.4 Stakeholder(s)/Community	Community interest, perception, engagement and complaints, Political etc.
	5.5 Force Majeure	Extreme weather events, war, natural disasters
	5.6 Market conditions	Market conditions effecting procurement, delivery and quality
	5.7 Industrial relations	Union activity, workforce restrictions
6. Property	6.1 Acquisition delays	Delays to acquiring property having a knock on effect on delivery
	6.2 Vacant possession	Does the property have vacant possession - Freehold/Leasehold
	6.3 Property assessment	Property damage, contamination or issues
	6.4 Property legal issues	Substratum
7. Operations and maintenance	7.1 Asset condition	Maintenance of assets, asset registers and evaluation
	7.2 Operations management	Cost, reliability, patronage, headways, contract management KPIs
	7.3 Customer satisfaction/experience	On time, cleanliness, quality of experience, reliability
	7.4 Transport integration	Integration with other transport modes
	7.5 Transport planning	Planning for integration of transport modes
	7.6 Temporary transport planning	Temporary replacement services

Appendix B: Risk Management Process Guidance

Introduction

This Appendix provides a detailed explanation of the core risk management process as outlined in Section 6.1.

The purpose of this Appendix is to provide a step by step guide for any person conducting a risk assessment for or on behalf of Sydney Metro.

Although the guidance in this Appendix is general in nature and is applicable to a broad range of risk assessments it is recommended individuals or teams embarking on a risk assessment for the first time make contact with the Enterprise Risk team or your dedicated Risk Manager.

Parts of a Risk

The key to successfully managing risks is to understand all risks have at their core, the same component parts, as follows:

Figure 13: Risk components

The Bowtie diagram below provides an illustration of the key components and their relationships, including the types of controls and when they are best applied to avoid or reduce the risk.

Figure 14: Bowtie model

Key Risk Management Processes

Key processes for risk management and their relationships are depicted below at Figure 15.

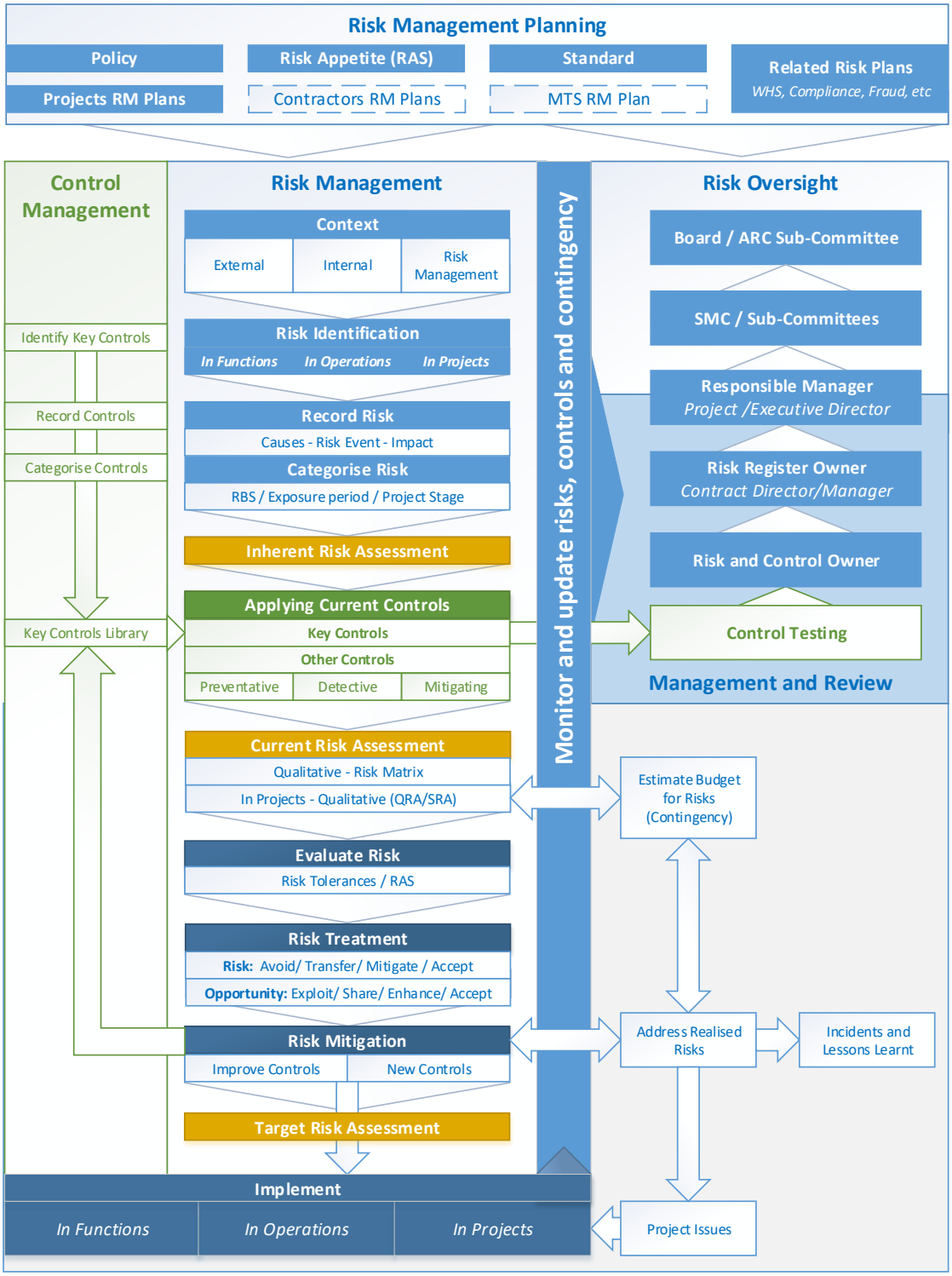


Figure 15: Risk Management Process

Core Process – Step 1: Establish Context

Establishing the context allows us to clarify our objectives, understand the internal and external factors which may influence risk and set the scope for the rest of the risk management process.

Establishing the context is an essential part of the process and enables stakeholders to be readily identified and involved in the process including those who may be impacted by risks or risk mitigations.

To establish the context, the following points require consideration:

Table 15: Establishing Context

	Examples at Sydney Metro
The external environment	• Political, economic, social, technological, legislative, environmental (PESTLE) effect on objectives • External Stakeholders (relationships, perceptions and values) • Broad trends and drivers that affect Sydney Metro.
The internal environment	• Applicable objectives (strategic, business, project, package, phase, activity, etc) • Sydney Metro's governance and structure • Resources, such as people, systems, processes and capital • Culture, capabilities, contractual relationships and obligations • Internal stakeholders (relationships, perceptions, requirements).
Risk management context	• Purpose of the risk assessment itself • Scope, inclusion and exclusions for the risk assessment • Risk assessment methodology, tools and techniques • The stakeholders providing risk management and subject matter expertise • Relevant Risk Management Plans, guidance and processes • Risk appetite and tolerance criteria.

Core Process – Step 2: Risk Identification

The purpose of risk identification is to capture and articulate in plain English, risks which could affect the achievement of objectives. Therefore, the aim of this step is to develop a set of well-defined, easily understood risks.

A rigorous risk identification process ensures risks are not overlooked, as a risk not identified will not be included in further analysis and will therefore not be properly mitigated or controlled.

Risk identification is typically an iterative process. New risks can arise for a range of reasons and existing risks can change in nature depending on various internal or external factors. As such, it is necessary to regularly conduct risk identification throughout the project life-cycle and as organisational business or external environment changes.

Depending on the scope and situation, risk identification can be achieved through a broad range of techniques, including:

- Brainstorming;
- Risk workshops;

- Pre-mortems;
- Interviews;
- Lessons Learned;
- Checklists (e.g. RBS);
- Assumption Analysis;
- Other tools and techniques as agreed or facilitated with the risk team.

Irrespective of the risk identification applied technique it is imperative the right people are involved. Management, stakeholders and subject matter experts bring experience and expertise hence are all able to offer valuable contributions, either in raising risks or providing alternative views and perspectives necessary to ensure comprehensive risk identification.

The scope of risk identification typically includes:

- All significant risk sources that may potentially affect the achievement of objectives need to be identified and considered;
- All risks are clearly defined and there are no unintended gaps or overlaps;
- Include all risks – even those that cannot be controlled;
- Both risks and opportunities are considered;
- The causes and impacts of each risk are examined, agreed and recorded;
- Knock on impacts of particular consequences including cascading and cumulative effects;
- Assumptions are identified, assessed and challenged; and
- Risks are assigned.

Risk Ownership

Each risk must be described at the level at which it will be managed (i.e. at contract, project or Sydney Metro) and with sufficient detail so as to be easily understood. Each risk must be assigned to a single risk owner with clear responsibility for managing the risk.

It is not uncommon for a risk to apply across a number of project or business areas. Where this is the case, the risk ownership can be assigned at the management level where it can be more appropriately managed by a single risk owner.

Where uncertainty exists about risk ownership, consult the Enterprise Risk or Project Risk team as applicable.

Description of Risks

A risk should be well defined, clear and concise. It should be able to stand on its own to provide clarity on what must be managed.

A well described risk will be succinct, free of jargon, clear and unambiguous. Risk needs to be expressed as an event reflecting what we are trying to stop from happening.

The table below lists some guiding words useful in risk descriptions:

Table 16: Useful guiding words for risk descriptions

Something missing	Something wrong	Wanted or Unwanted
• Insufficient • Lack of/Under • Reduction in • Unable/Inability	• Inaccurate • Inappropriate • Incorrect • Ineffective	• Excessive/Overrun • Increase to • Irrelevant • Opportunity

Options for risk descriptions:

- As a result of (risk source/cause), (the event) may occur, which would lead to (effect on objective/s).
- There is a risk of/that (risk source/cause) which may result in (the event) affecting (impact on objective/s).
- Failure to (risk source/cause) cause/result in (the event) which negatively impacts (the objectives affected).

Example: Lack of site investigation data (Root Cause), leads to underestimation of contaminated materials volume to be taken offsite (Risk Event), driving increased costs and impacts on project delivery and time (Consequences).

Avoid the following when describing risks:

- A broad statement – Not informative, difficult to manage, e.g. cyber risk
- A cause – It contributes to a risk occurring, rather than the risk itself
- An incident or an issue – Incidents are risks that have materialised
- A consequence – Cannot be managed effectively, e.g. reputation
- A “type” of risk – WHS or Information Technology
- Reversing/negating the objectives you are looking to achieve.

Categorising the Risk

All risks are to be categorised by:

- **Type of risk:** Project or Enterprise
- Main cause or risk area utilising **Sydney Metro Risk Breakdown Structure (RBS)**, as documented in Section 5.2.1
- **Type of impact:** Threat or Opportunity
- **Other** as identified in the RMIS.

Project risks require additional data as follows:

- **Project Stage:** The stage(s) in a project life-cycle where the risk event is most likely to occur;
- **Estimated Exposure:** Start and End Dates for the exposure window;

- **Parent/Child Relationships (Aggregation):** Identification of risk linkages between summary level risks (parent) and sub-risks (child) e.g. for integration risks; and
- **QRA:** Identification of risks to be considered within QCRA and/or QSRA processes. Risks check as "QRA" require further categorisation as Inherent or Contingent:
    - *Inherent risks:* The uncertainty associated with key assumptions in the base estimate, typically associated with rates and quantities for plant, equipment, materials, subcontractors, preliminaries (e.g. staff, offices, consumables) etc. For QRA purposes inherent risks are assigned a probability of 100%.
    - *Contingent risks:* Unplanned risks or risk events that are not certain to occur (i.e. less than 100% probability) but if they do, would have an impact on the project schedule and/or outturn cost (positive or negative). Contingent risks require assessment of probability of occurrence for cost impact and/or schedule impact, noting these may be different depending on the nature of the risk. Additionally, frequency of occurrence may also require consideration i.e. how many times the risk might occur within the event window.

Linking related risks

If relevant, the risk has to be linked to relevant risks to reflect cascading or cumulative effect of related risks.

Core Process – Step 3: Risk Analysis

Risk analysis provides an understanding of the level and nature of the risks identified through the risk identification process. This involves taking into account the causes and sources of risk, their negative and positive consequences and the likelihood of those consequences occurring.

The primary approaches to risk analysis are:

- **All risks at Sydney Metro are subject to Qualitative risk analysis** in accordance with SM-19-00028213 Sydney Metro Risk Matrix. This approach is described in following sections.
- **All project risks with cost and/or scheduling impacts are also subject to quantitative risk analysis (QRA).**

QRA is a way of estimating the financial or schedule risk profile associated with a given set of risks. Outputs of the QRA are used to inform risk contingency budgets and project delivery forecasts. QRA is also used to aid decision-making regarding matters associated with change, project delivery options or strategies. Sydney Metro's approach to QRA is documented in separate QCRA and QSRA procedures.

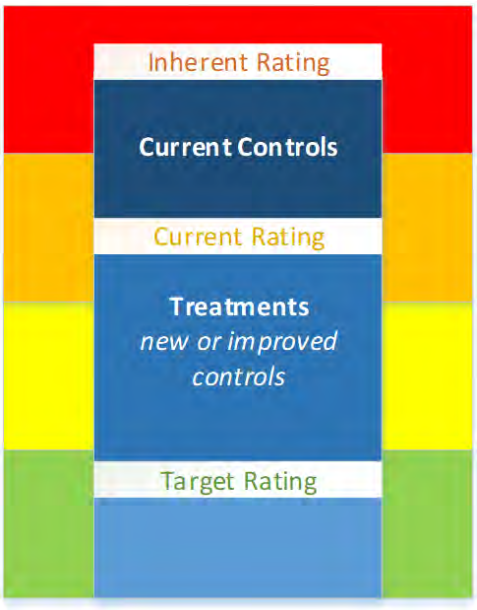
Determining the Level of Risk

To determine the risk level an assessment of the likelihood of the risk occurring and the consequences if the risk event occurs is required. By combining the likelihood and consequence in SM-19-00028213 Sydney Metro Risk Matrix, the Risk Level can be derived.

Sydney Metro make an assessment of Risk Level at the following points:

- **Inherent (i.e. without controls):** The level of risk assuming no controls exist to prevent the event from happening or the worst case scenario when all controls fails.
- **Current (with current controls):** The level of risk taking into consideration existing controls and their effectiveness to prevent the event from occurring or mitigate the impact. The difference between the Inherent and Current risk ratings reflects the effectiveness of existing controls. It also informs the actual level of risk and the need for further treatment.
- **Target (with current and planned controls):** The level of residual risk following implementation of planned treatments or additional controls. The Target rating reflects the expected effectiveness of the additional treatments once implemented.

Table 17: Risk Ratings Levels



Assessing Likelihood: Likelihood is typically an estimation, based upon information available and past experience. Different likelihood scales are available to allow an appropriate application.

- **How probable (likely)** it is for the risk event to be realised. This is typically applicable for one off events e.g. works for an activity, project, task, or
- **How often (frequent)** it is for the risk event to be realised. This is applicable for repeated events e.g. process failure, crisis event.

Table 18: Likelihood Ratings

LIKELIHOOD	PROBABILITY One off event how likely?	FREQUENCY Repeated event how often?
Almost certain	Expected to occur frequently during time of activity or project. Greater than a 90% chance of occurring.	10 times or more every year
Very Likely	Expected to occur occasionally during time of activity or project. A 75-90% chance of occurring.	1-10 times every year

LIKELIHOOD	PROBABILITY One off event how likely?	FREQUENCY Repeated event how often?
Likely	More likely to occur than not occur during time of activity or project A 50-75% chance of occurring.	Once each year
Unlikely	More likely not to occur than occur during time of activity or project. A 25-50% chance of occurring.	Once every 1 to 10 years
Very Unlikely	Not expected to occur during the time of activity or project. A 10-25% chance of occurring.	Once every 10 to 100 years
Almost Unprecedented	Not expected to ever occur during time of activity or project. Less than 10% chance of occurring.	Less than once every 100 years

Note:

- The likelihood measure applies to the risk event, not a single consequence.
- In some cases, the risk event can be a slow deterioration, rather than a distinct single event.

Assessing Consequence(s): Consequence is the impact of an event on an objective. Assessment of potential consequences is taken from the perspective the risk has occurred. Where multiple consequences can arise, the highest rated consequence is required to be used for the overall Risk Level.

Sydney Metro uses the following consequence categories to measure potential impacts across three risk domains: enterprise/functional (risk), project (risk), and opportunities (see Table 19 below). Consequences can be applied as appropriate from each category (e.g. project risk can have 'people' consequence).

Table 19: Consequence Categories

Enterprise	Project	Opportunities
1. Health and Safety 2. Environment 3. Disruption to Service 4. Customer Experience and Satisfaction 5. Reputation and Public Perception 6. Regulatory or Legal Breach 7. Management Effort 8. People 9. Revenue/OPEX Loss/Overrun	1. Benefit Realisation of Initiative or Project 2. Project Delays/Milestones 3. CAPEX Loss/Overrun	1. Management Effort 2. Benefit Realisation 3. Project Delays/Milestones 4. Financial

For project risks which have cost or time implications follow the QCRA procedure to record additional details for QRA. Project risks with cost or time implications and the likelihood estimate of above 75% or Likely level should be considered to be added to forecast.

Applying Current Controls

Effective management of risk requires development and implementation of an appropriate control environment.

Controls are defined as measures that reduce risk, either by reducing the likelihood of the risk occurring and/or reducing the consequences when it does occur (for opportunities, controls typically enhance the likelihood and/or impact).

Control Identification: When identifying controls, it is essential to consider all types of controls, Preventive, Detective and Mitigating. However, only Preventative controls have any material impact on risk reduction and, therefore, should be prioritised.

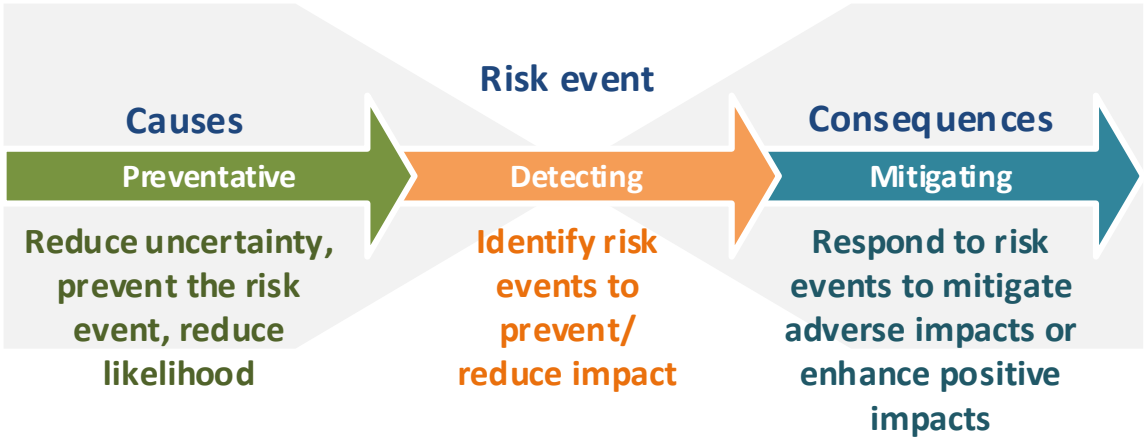


Figure 16: Control identification

Controls are recorded and implemented in a prioritised manner as follows:

- Add **Key Controls** first. Key Controls are either project specific or enterprise related and are designated as such due to the material effect they have on risk(s). These are agreed controls recorded in the Control Library.
- Document any **Compensating Controls** considered necessary and material to appropriately control or manage the risk.
- **Do not record** minor controls.

Controls can be recurring activities or one-off actions.

When documenting controls, consider recording:

- **What** the specific action, task or process to prevent, detect or mitigate a risk).
- **Who** is responsible for implementing or performing the control.
- **When** or **how** often the control is performed.

Sample Control Statement examples:

- Site Investigation works to be conducted by XYZ prior to finalisation of design and construction contract award;
- Exception report reviewed and endorsed monthly by Contract Director; and
- Scope requirements and changes approval by Project Director.

Assessment of Control Design and Operating Effectiveness: Control effectiveness considers whether the controls are designed appropriately (design effectiveness) and if so, whether they are operating as designed (operational effectiveness). Control self-assessment of Design Effectiveness and Operating Effectiveness is required to be separately assessed using the criteria below.

The lower of the DE and OE rating drives the overall control rating.

Table 20: Control Effectiveness Ratings

Control Design Effectiveness	Control Rating	Control Operating Effectiveness
Control design does not meet the Control Objective.	**Poor**	Control is not applied or applied incorrectly.
The Control design partially meets the Control Objective.	**Inadequate**	Control is sometimes operational but regularly not applied when or as intended.
The Control design mostly meets the Control Objective.	**Adequate**	Control is largely operational but on occasion is not applied when or as intended.
The control design fully meets the Control Objective.	**Strong**	Control is operational all of the time and in accordance with the design intent.

An assessment of control effectiveness for individual controls identifies improvements and informs the overall control effectiveness.

Risk Owners should be able to make a subjective assessment as to the overall control effectiveness at the risk level which represents the extent to which the controls, taken collectively, modify the risk. This assessment informs a gradual risk reduction from Inherent (with no controls in place) to Current risk rating (taking into account the effectiveness of existing controls).

Core Process – Step 4: Risk Evaluation

Risk evaluation determines if the risk is tolerable when considered against SM-20-00089224 Sydney Metro Risk Appetite criteria and thus informs the corresponding response, reporting and monitoring requirements, as well as the relative priority. This is achieved by comparing the Current risk rating with Appendix D: Risk Tolerance and Response Criteria.

Sydney Metro's risk appetite balances the fact resources are always limited and some level of risk helps to achieve its objectives. It also articulates areas where Sydney Metro has no or limited appetite. Due to this, it is important to be mindful of how much risk Sydney Metro is comfortable with being exposed to.

Core Process – Step 5: Risk Treatment

Risk treatment is the process to modify risk and can involve avoiding, transferring, mitigating and accepting the risk.

Risk treatment is an iterative process where risk treatments (or combinations of treatments) are assessed to determine if together they are sufficient to bring the Current risk levels to a

tolerable level. If not, then new risk treatments are generated and assessed until a satisfactory level of residual risk is achieved.

Risk treatment involves selecting and implementing one of the below options.

Table 21: Risk and Opportunity Responses

Strategy	Risk Response	Opportunity Response
Eliminate uncertainty, by not undertaking the activity	**Avoid**	**Exploit**
Allocate ownership, by sharing with another party or parties through contracts, insurance or risk financing	**Transfer**	**Share**
Modify exposure, changing the likelihood and/or consequence through modifying controls	**Mitigate**	**Enhance**
Include in baseline, retaining by informed decision	**Accept**	**Ignore**

Selection of the Risk Treatment Activity(s)

The objective is not to eliminate all risk, but to ensure risks are managed to an acceptable level. Therefore, any risk treatment strategy should provide for, or consider as a minimum:

- Ability to actually control the risks.
- Value for money, practicable and commensurate with the level of the risk
- Which controls would be the most effective, such improving existing and/or preventative controls directly relate to cause
- The potential for the introduction of new risks
- Compliance with laws and regulations.

For effective management decisions to be made, cost benefit analysis as a minimum should consider:

- The loss to be expected if no action is taken
- The expected benefit from implementing the treatment
- A comparison of the cost/benefit of taking no action versus implementing the treatment or an alternative solution
- Links between other risks and controls.

Risk Treatment Plan

The risk treatment plan is a list of approved strategies which will treat risks to within acceptable tolerance levels.

Risk owners are responsible for ensuring risk treatment plans are documented and maintained in the RMIS.

Where risk treatments have long lead times, consideration needs to be given to interim or temporary measures.

As a minimum, components of a treatment plan include:

- Proposed action, purpose and expected results
- Resource requirements including associated costs
- Nomination of risk treatment owner/s
- Timing, due dates for risk treatment actions.

The combined risk reduction of treatment actions is to be recorded as a Target risk rating.

Implementation of Risk Treatments

The risk owner is responsible for coordinating activities to ensure risk treatments are implemented. While the risk owner may not be directly responsible for individual risk treatments, they remain accountable for overseeing the completion or application of risk treatments within the expected timeframe.

Review of Risk Treatment Plans

Risk treatment plans need to be reviewed on an ongoing basis commensurate with the level of risk, the treatments required and changes to the internal and external environment.

Formal review should be conducted as defined in the Sydney Metro Risk Tolerance and Responses table in Appendix D.

Core Process – Step 6: Monitoring, Review and Reporting

Monitoring, Review and Reporting requirements are documented in Section 8 of the Standard.

Core Process – Step 7: Risk Occurrence

In the event a risk occurs the following processes are required to be initiated:

- **Issues Management:** Risk occurrence typically leads directly into issues management. Issues, like risks, require prioritisation, action plans, owners and timeframes to ensure consequences are mitigated and the issue is closed out as quickly and efficiently as possible. Issues are to be managed in accordance with the **Project Plan/Issues Management Procedure**;
- **Contingency Management/Forecast Adjustment:** Irrespective of whether the new issue was previously been identified as a risk, it will be necessary to account for any cost impacts within the cost forecast (as applicable). Additionally, any associated adjustments to contingency are to be processed in accordance with SM-19-00089372 Contingency management procedure. Finally, where there is significant uncertainty regarding cost impact, this uncertainty is required to be considered within any QCRAs undertaken; and
- **Lessons Learned:** When a material risk (threat or opportunity) occurs and management determine other parts or projects within Sydney Metro may benefit from the associated knowledge and experience gained, the risk/issue is to be added as a “Lesson Learned” in accordance with SM-20-00085178 Lessons management framework.

Appendix C: Sydney Metro Risk Matrix

Sydney Metro Consequence Criteria are presented in three categories: Enterprise, Project and Opportunity.

	ENTERPRISE CONSEQUENCES					
	C6	C5	C4	C3	C2	C1
Health and Safety	Illness, first aid or injury not requiring medical treatment.	Illness or minor injuries requiring medical treatment.	Single recoverable lost time injury or illness, alternate/restricted duties injury, or short-term occupational illness.	1-10 major injuries requiring hospitalisation and numerous days lost, or medium-term occupational illness.	Single fatality and/or 10-20 major injuries/permanent disabilities/chronic diseases.	Multiple fatalities and/or >20 major injuries/permanent disabilities/chronic diseases.
Environment	No appreciable changes to environment and/or highly localised event.	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries.	Short-term and/or well-contained environmental effects. Minor remedial actions probably required.	Impacts external ecosystem and considerable remediation is required.	Long-term environmental impairment in neighbouring or valued ecosystems. Extensive remediation required.	Irreversible large-scale environmental impact with loss of valued ecosystems.
Disruption to Service	Short duration disruptions.	Minor customer disruptions (Customer volume and time impacted).	Disruptions impacting customers with customers stranded on trains or stations between 15 to 60mins.	Major disruptions affecting services with customers stranded on trains or stations for over 60mins	Line closure, asset failure or substantial disruptions affecting more than one service period (on/off peak), with network wide transport impacts	Line closure, asset failure, or substantial disruptions affecting several service periods (on/off peak), with significant network wide transport impacts
Customer Experience and Satisfaction	Isolated written complaints.	A stream of written complaints for more than 3 months.	A stream of written complaints for more than a year.	A substantial and sustained uplift in the rate of customer complaints (per 100,000 boardings).	A deluge of customer complaints for up to 6 months with normal background rates for the mode or service increasing by a factor of 3 or more.	A prolonged deluge of customer complaints for more than 6 months, with some normal background rates for the mode or service increasing by a factor of 10 or more.
Reputation and Public Perception	Negative article in local media. No discernible reaction/apprehension. Goodwill, confidence and trust retained.	Unease – Series of negative articles in local/state media. Confidence remains with some minor loss of goodwill or trust. Recoverable with little effort or cost. Some continuing scrutiny/attention.	Disappointment – Extended negative local/state media coverage. Confidence and trust dented but are quickly recoverable at modest cost within existing budget and resources.	Concern – Short-term negative state/national media coverage. Confidence and trust are diminished but are recoverable with time, staff effort and additional funding.	Displeasure – Extended negative state/national media coverage. Confidence and trust are damaged but recoverable at considerable cost, time and staff effort.	Outrage – Material change in the public perception of the organisation. Confidence and trust are severely damaged, possibly irreparably, and full recovery both questionable and costly.
Regulatory or Legal Breach	Low-level non-compliance with legal and/or regulatory requirement or duty by individuals or TfNSW.	Minor non-compliance with legal and/or regulatory requirement or duty. Investigation and/or report to authority.	Moderate non-compliance. Subject to comment and monitoring from applicable regulator. Small fine and no disruption to services.	Systemic non-compliance/Major breach resulting in enforcement action and/or prohibition notices. Substantial fine and no disruption to services.	Substantial breach resulting in prosecution, fines and/or litigation. Licence or accreditation restricted or conditional affecting ability to operate.	Prosecution leading to imprisonment of TfNSW executive. Loss of operating licence.
Management Effort	An event, the impact of which can be absorbed as part of normal activity.	An event, the impact of which can be absorbed but some additional management effort is required.	An event, the impact of which can be absorbed but much broader management effort is required.	Major event which can be absorbed, but substantial management effort is required.	Severe event which requires extensive management effort but can be survived.	Catastrophic event with the clear potential to lead to the collapse of the organisation.
People	Minimal employee impact, small number of people affected. No absenteeism of key staff.	Localised employees/discipline impacted. Isolated incidence of absenteeism.	Large number of employees (<50%) and/or morale impacted. Increased absenteeism and employees looking to leave.	Majority of employees (>50%) and/or morale materially impacted. Widespread absenteeism. Key employees are looking to leave.	Majority of employees impacted (>75%). Employee morale is reduced to low. High-turnover rate. Majority of key employees are looking to leave.	All employees impacted (100%). Insufficient workforce. Employee brand significantly impaired.
Revenue/OPEX Loss/Overrun	< $10K	$10K - $100K	$100K - $1m	$1m - $5m	$5m - $25m	>$25m

	PROJECT CONSEQUENCES					
	C6	C5	C4	C3	C2	C1
Benefit Realisation of Initiative or Project	Insignificant decrease in the benefits realised; No public implications.	Partial impairment in the benefits realised but still economically sound; No public implications.	Minor decrease in benefits realised; No public implications	Major decrease in benefits realised; With public implications	Significant decrease in benefits realised; With public implications	Failure to realise benefits of the initiative which adversely affects the enterprise-wide operations of TfNSW
Project Delays/ Milestones	A slight delay impact (<2 Days) that can be easily recovered.	A minor delay impact (<1 week) that can be recovered.	A moderate delay impact (<2 weeks) that can be recovered with minor re-scheduling, contingency and resources.	A major delay impact (<1 month) that can be difficult to recover; or publicly announced portion/milestone missed or final completion date missed with demonstrable mitigating external circumstances.	Significant delay impacts (<3 months), need to re-schedule project; or publicly announced portion/milestone missed or final completion date missed on critical path project.	A catastrophic impact delay (>6months). Need to significantly re-schedule the project; or publicly announced portion/ milestone significantly missed or final completion date significantly missed on critical path project.
CAPEX Loss/ Overrun	< $100k	$100k - $1m	$1m - $10m	$10m - $50m	$50m - $100m	> $100m

	OPPORTUNITY CONSEQUENCES					
	C6	C5	C4	C3	C2	C1
Management Effort	Insignificant reduction of effort within a single team/deliverable.	Minor reduction of effort within a single team/deliverable.	Moderate reduction of effort within a single team/deliverable or minor impact across multiple packages.	Major reduction of effort within a single team/deliverable or moderate impact across multiple packages/project.	Substantial reduction of effort felt at a Sydney Metro level.	Substantial reduction of effort recognised by Sydney Metro.
Benefit Realisation	Forecasting slight increase in benefit delivery.	Forecasting a minor increase in benefit delivery.	Forecasting a moderate increase in benefits.	Forecasting major increase in benefit delivery.	Forecasting significant increase in benefit delivery.	Forecasting very significant increase in benefit delivery.
Project Delays/ Milestones	Schedule acceleration on a non-critical task	Schedule acceleration on a critical task.	Schedule acceleration of critical task/milestone	Schedule acceleration of major milestone/ planed final completion	Acceleration of major milestone and notable change to planned completion.	Forecasting very significant increase in project completion.
Financial	Revenue/OPEX < $10K CAPEX < $100k	Revenue/OPEX $10K - $100K CAPEX $100k - $1m	Revenue/OPEX $100K - $1m CAPEX $1m - $10m	Revenue/OPEX $1m - $5m CAPEX $10m - $50m	Revenue/OPEX $5m - $25M CAPEX $50m - $100m	Revenue/OPEX >$25m CAPEX > $100m

Sydney Metro Likelihood Criteria and Risk Matrix

Probability	One off event How likely?	Frequency	Repeated How often?	Likelihood		Consequence					
						C6	C5	C4	C3	C2	C1
	Expected to occur frequently during time of activity or project. Greater than a 90% chance of occurring.		10 times or more every year	**Almost certain**	**L1**	20	22	29	32	34	36
	Expected to occur occasionally during time of activity or project. A 75-90% chance of occurring.		1-10 times every year	**Very Likely**	**L2**	14	18	23	28	31	35
	More likely to occur than not occur during time of activity or project A 50-75% chance of occurring.		Once each year	**Likely**	**L3**	9	12	16	24	27	33
	More likely not to occur than occur during time of activity or project. A 25-50% chance of occurring.		Once every 1 to 10 years	**Unlikely**	**L4**	6	7	11	17	25	30
	Not expected to occur during the time of activity or project. A 10-25% chance of occurring.		Once every 10 to 100 years	**Very Unlikely**	**L5**	3	4	8	13	19	26
	Not expected to ever occur during time of activity or project. Less than 10% chance of occurring.		Less than once every 100 years	**Almost Unprecedented**	**L6**	1	2	5	10	15	21

Appendix D: Risk Tolerance and Response Criteria

All risks (threats and opportunities) must be classified according to SM-19-00028213 Sydney Metro Risk Matrix and prioritised for further attention using the Sydney Metro tolerance and response table below.

Risk rating	Risk Tolerance and Management response	Reporting to	Monitoring by	Review frequency
A – Very High	**Outside tolerance and should be avoided** An alternative solution must be found and all necessary steps must be taken to reduce the risk below this level without delay. The activity must not be undertaken without the explicit approval of the Board.	The Executive and the Board as soon as reasonably practicable	The Executive team and the Board.	Monthly
B – High	**Outside tolerance and can only be tolerated with effective controls or if reached SFAIRP for health and safety risks** The explicit approval is required from the Executive or Project Directors who is to verify all reasonably practicable controls have been implemented and determine whether the risk is within tolerance.	The relevant Executive or Project Director at the next risk review.	Relevant Executive or Project Director	Monthly
C – Medium	**Tolerable if it is not reasonably practicable to reduce the risk further or reached SFAIRP for health and safety risks** Additional treatment measures should be sought if significant benefit can be demonstrated and/or there is an additional treatment measure which is recognised as good practice.	The relevant Line Manager	Relevant Line Manager	Quarterly
D – Low	**Acceptable** Where the risk has health and safety consequences control measures should be effective, reliable and subject to appropriate monitoring.	By exception only	Risk Owner	Six monthly

Appendix E: Contractor Risk Management Minimum Requirements

This Appendix sets out the minimum requirements risk management process, risk management plans and risk reporting for Contractors engaged by Sydney Metro. These requirements are to be reflected in tender and contract documents. It is recommended this Risk Management Standard is also attached in full to tender and contract documentation.

Table 22: Contractor Minimum Requirements for Risk Management Process

Area	Contractor Minimum Requirements
Compliance	• All risks must be managed according to a process consistent with the requirements of **AS/NZS ISO 31000 (Risk management – Principles and guidelines**). • Risk management will comply with all relevant statutory and regulatory obligations.
Competency	• All staff involved will be provided with the necessary training to ensure they can effectively apply risk management. • A suitably experienced, competent person must lead the risk identification and analysis process.
Risk identification	• Risk identification processes must be designed to expose and document all foreseeable risks which could impact achievement of the objectives. • Threats and opportunities must be considered.
Risk Owner	• All risks will be assigned to an owner with responsibility for managing the risk including implementation and management of all associated controls and treatment actions.
Categorisation	• All risks will be categorised according to the Risk Breakdown Structure (RBS) as per Appendix A: Risk Breakdown Structure.
Risk Assessment/Risk Ratings	• Inherent, current and (where relevant) target risk ratings must be determined using Appendix C: Sydney Metro Risk Matrix. • Quantitative risk assessment methods will be used wherever the additional effort is warranted (e.g. to evaluate the effect of identified risks on financial and program or milestone-related objectives).
Controls and Risk Response	• Existing Controls and Planned treatments will be identified and implemented to reduce the risk as low as reasonably practicable and in line Appendix D: Risk Tolerance and Response Criteria. • Existing Controls and Planned treatments will be assigned to owners and will include implementation due dates and frequency of review.
Monitor and Review	• All risks must be regularly monitored, reviewed and updated to reflect current status and understanding of the risk in line with Appendix D: Risk Tolerance and Response Criteria.
Risk Assurance/ Continual improvement	• Assurance and continual improvement activities and initiatives will be conducted to ensure risk management is effective and to address areas of non-compliance.
Documentation and Records Management	• All records created associated with risk management are to be retained within an appropriate record management system.

Area	Contractor Minimum Requirements
Risk Register	• All risks must be entered into an official project risk register to support associated management, escalation and reporting requirements. • The Risk register must retain information on all closed risks in order to provide an audit trail and to assist in learning for future risk analyses. Links to other relevant documentation to evidence outcomes must be recorded where required. • Risk Register field minimum requirements risk are as follows: o Unique Identification Number o Project, Phase, Area, Sub-area o Risk Title o Risk Description o Category (RBS) o Owner o Causes o Consequences o Inherent Risk Rating o Existing Controls (including control type preventative, detective, mitigating)/Completed Treatments o Overall Control Effectiveness (as per Sydney Metro Control Effectiveness Criteria) o Current Risk Rating o Planned Treatments (Controls/Tasks), including Due Dates, Status and Owner o Target Risk Rating o Risk Status (draft, open, impacted, transferred, closed) o Date Reviewed o Review Comments.
Meetings	• The Contractor must attend risk management meetings with the Principal's Representative on a monthly basis or as otherwise directed by the Principal's' Representative. Meetings will be held to review Risk Reports and Risk Register, develop risk controls and to decide upon specific controls or actions where appropriate.

Contractor Minimum Requirements for Risk Management Plan

The Risk Management Plan (RMP) shall:

- Detail the methods, systems and procedures whereby the Contractor will comply with risk management requirements of the Deed, including the Contractor Minimum Requirements for Risk Management as set out in **Appendix E** of the Sydney Metro Risk Management Standard.
- Support compliance with **AS/NZS ISO 31000 (Risk management – Principles and guidelines**);
- Detail the Contractor's Risk Management Framework (i.e. risk specific policies, procedures, tools and templates) and approach to project risk management including but not limited to risk culture, governance, resourcing, risk identification, assessment, treatment, management, escalation and reporting of threats, opportunities and issues;

- Detail the Contractor's project organisational structure complete with all risk management related roles and the associated responsibilities, accountabilities, skills and competencies;
- Detail the Contractor's proposed risk management information system to be used for recording and reporting risk information;
- Detail how the Contractor will embed risk management within its supply chain (subcontractors, service providers, suppliers), stakeholder groups and third parties;
- Detail how Contractor decision making processes and risk management are integrated and aligned;
- Detail the Contractor's project specific risk management training and development plan;
- Detail the Contractor's risk management assurance plan and processes (i.e. compliance, audit etc.) to ensure the effectiveness of risk management;
- Detail how risk management and specific areas of project management (e.g. work health and safety, safety-in-design, environment, operational, commercial, stakeholder, etc.) will be aligned and integrated into the corresponding Project Plans in accordance with the Deed; and
- Detail when the RMP will be reviewed and updated (minimum annually) to address any material changes (e.g. changes associated with design, schedule, methodology, stakeholders, resourcing, governance, external factors, etc) and progress of the Contractor's Activities.

Contractor Minimum Requirements for Risk Reporting

The risk management section of the monthly progress report shall, as a minimum, include the following:

- The Contractor's progress and performance against the requirements of the Risk Management Plan details of all risk management meetings held and the status of planned risk management implementation activities;
- All Contractor A and B rated risks (based on "Current Residual Rating" and risk rating criteria as per Appendix C: Sydney Metro Risk Matrix from the Sydney Metro Risk Management Standard);
- Description of all opportunities and implementation strategies planned and underway
- Details of all contractor owned risks that could adversely impact Sydney Metro's objectives and/or stakeholders, including but not limited to:
    - Work Health & Safety (including that of the public/community);
    - Environment/Heritage asset preservation and protection;
    - Schedule delays to Completion and/or key milestones nominated in the Deed;
    - Interfaces, e.g. with preceding and follow on contractors, third parties, stakeholders, etc;
    - Public and private utility provider assets and associated services;

- Flooding and site drainage;
- Noise and vibration;
- Traffic and transport management;
- Stakeholder and community matters; and
- Approvals.

- Details of all changes in the Contractor's risk profile and risk register as compared to the previous month including:
  - confirmed new risks and potential emerging risks;
  - risks that have increased or decreased in risk exposure/rating;
  - risks that have occurred and how the impact is being managed;
  - risks that have been closed (for any reason).
- Details of any support needed from the Principal in mitigating risk or realising opportunities.

Note: All risk reporting will be in accordance with **Risk Register Minimum Requirements**.

APPENDIX J - SM Water Discharge and Reuse Procedure (SM-17-00000098)

Water Discharge & Reuse Procedure

SM-17-00000098

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Manager, Environment
System Owner:	Executive Director, Safety, Sustainability & Environment
Status:	FINAL
Version:	3.0
Date of issue:	27 March 2019
Review date:	27 March 2020

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1. Purpose & Scope

The purpose of this Procedure is to provide guidance to site personnel for managing, discharging and reusing excess water on Sydney Metro construction sites. This Procedure includes references to relevant industry guidelines but is not intended to replace them, nor does it override the relevant legislative and regulatory requirements.

Principle Contractors may be required to develop their own procedure that is consistent with this document via clause 3.1(f) of the Construction Environmental Management Framework (CEMF).

2. Accountabilities

The Executive Director, Safety, Sustainability & Environment is accountable for this Procedure. Accountability includes authorising the document, monitoring its effectiveness and performing a formal document review.

Direct Reports to the Chief Executive are accountable for ensuring the requirements of this document are implemented within their area of responsibility.

The Direct Reports to the Chief Executive who are accountable for specific projects/programs are accountable for ensuring associated contractors comply with the requirements of this document.

3. Definitions

All terminology in this Procedure is taken to mean the generally accepted or dictionary definition. Terms and jargon specific to this Procedure are defined within the Sydney Metro Glossary, or are listed below.

	Definitions
The Blue Book	*Managing Urban Stormwater: Soils & Construction* 2004, Landcom.
CEMP	*Construction Environmental management plan*
Environment Manager	Contractor Environment Manager.
EPA	NSW Environment Protection Authority
EPL	Environment protection licence issues in accordance with the POEO Act by the EPA
pH	The measure of the acidity or alkalinity of a solution.
POEO Act	Protection of the Environment Operations Act 1997.
NATA	National Association of Testing Authorities, Australia
NTUs	Nephelometric turbidity units
TSS	Total Suspended Solids.
Waters	(as defined in the POEO Act) means the whole or any part of: a) any river, stream, lake, lagoon, swamp, wetlands, unconfined surface water, natural or artificial watercourse, dam or tidal waters (including the sea), or b) any water stored in artificial works, any water in water mains, water pipes or water channels, or any underground or artesian water.

Water pollution or Pollution of waters	As defined in the POEO Act water pollution or pollution of waters means: a) placing in or on, or otherwise introducing into or onto, waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, so that the physical, chemical or biological condition of the waters is changed, or b) placing in or on, or otherwise introducing into or onto, the waters (whether through an act or omission) any refuse, litter, debris or other matter, whether solid or liquid or gaseous, so that the change in the condition of the waters or the refuse, litter, debris or other matter, either alone or together with any other refuse, litter, debris or matter present in the waters makes, or is likely to make, the waters unclean, noxious, poisonous or impure, detrimental to the health, safety, welfare or property of persons, undrinkable for farm animals, poisonous or harmful to aquatic life, animals, birds or fish in or around the waters or unsuitable for use in irrigation, or obstructs or interferes with, or is likely to obstruct or interfere with persons in the exercise or enjoyment of any right in relation to the waters, or c) placing in or on, or otherwise introducing into or onto, the waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, that is of a prescribed nature, description or class or that does not comply with any standard prescribed in respect of that matter, and, without affecting the generality of the foregoing, includes: d) placing any matter (whether solid, liquid or gaseous) in a position where: i. it falls, descends, is washed, is blown or percolates, or ii. it is likely to fall, descend, be washed, be blown or percolate, into in to any waters, onto the dry bed of any waters, or into any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted, or e) placing any such matter on the dry bed of any waters, or in any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted, if the matter would, had it been placed in any waters, have polluted or have been likely to pollute those waters.

4. Water Discharge and Reuse Procedure

4.1. Water Management

During construction there is the potential for sediment laden water to be generated on construction sites. In particular in areas where there is no ground cover, where earthworks have been carried out and in low lying points on the site. It is essential that this sediment laden water is contained and managed on site through suitable erosion and sediment controls and only discharged once it has been treated and tested to ensure there is no harm caused to surrounding waterways and ecosystems.

4.2. Legislative Requirements

The Protection of the Environment Operations Act 1997 (POEO Act) is the key piece of environmental legislation in NSW administered by the Environment Protection Authority (EPA). Offences under this Act are classified into three tiers, with Tier 1 offences being the most serious – attracting up to $5 million in the case of a corporation and $1 million for an individual and seven years imprisonment for wilful or negligent harm to the environment.

Table 1: POEO classification of offences

Classification of offence	Description
Tier 1	These offences are the offences under Part 5.2 of the POEO Act 1997 and. include the wilful or negligent disposal of waste causing or likely to cause harm to the environment (section 115), wilfully or negligently causing a substance to leak, spill or otherwise escape in a manner that harms or is likely to harm the environment (section 116), and the wilful or negligent emission of an ozone-depleting substance in breach of the Ozone Protection Regulations in a manner that harms or is likely to harm the environment (section 117).
Tier 2	Tier 2 offences are all other offences under this Act or the regulations. This includes carrying out a scheduled activity without an environment protection licence (EPL) (section 49(2)), failing to comply with a condition of an EPL (section 64(1), pollution of waters (section 120) and failing to notify a pollution incident (section 152). The maximum penalties for the Tier 2 offence of failing to notify a pollution incident are $2 million in the case of a corporation and $500,000 in the case of an individual. The maximum penalties for Tier 2 offences other than failure to notify pollution incidents are $1 million in the case of a corporation and $250,000 in the case of an individual. Further daily penalties apply to continuing offences.
Tier 3	Tier 3 offences are tier 2 offences that may be dealt with under Part 8.2 by way of penalty notice

Under section 120 of this Act, any unlicensed water pollution event, no matter how minor, is illegal It is a defence against prosecution under section 120 of the POEO Act if the pollution was regulated by an Environment Protection Licence (EPL) and the conditions of that EPL relating to pollution of waters were not contravened. In the absence of any specific EPL provision, however, to avoid causing pollution and breaches of Section 120, any water discharged from site must be of the same quality, or better, than the quality of the receiving waters at the time of discharge.

Offences attracting special executive liability are dealt with under Section 169 of the POEO Act. Section 169 specifically states that if a corporation wilfully or negligently causes any substance to leak, spill or otherwise escape (whether or not from a container) in a manner that harms or is likely to harm the environment or pollutes any waters each person who is a director of the corporation or who is concerned in the management of the corporation is taken to have contravened the same provision, unless the person satisfies the court that the person, if in such a position, used all Due Diligence to prevent the contravention by the corporation.

4.3. Water Management and Discharge

It is essential that the quality of the receiving waters is established through background monitoring and sampling, prior to any discharge from site, so that the potential impact of discharge water can be determined. Monitoring of the receiving waters must be undertaken prior to any land disturbance works (to establish a baseline) as well as during construction.

It is also essential that water management standards, and particularly erosion and sediment controls, are implemented to control and treat water. Landcom's Managing Urban Stormwater: Soils & Construction 2004 (The Blue Book) is considered a best practice guideline for erosion and sediment control on construction sites in NSW. If implemented, The Blue Book will help mitigate the impacts of land disturbance activities on soils, landforms and receiving waters and minimise the potential for water pollution events to occur.

The Water quality criteria and testing and treatment techniques in this procedure are based on The Blue Book. However, compliance with The Blue Book does not, of itself, provide any defence to an alleged breach of section 120 of the POEO Act. Examples of situations where compliance with The Blue Book could still lead to a breach of section 120 are as follows:

- Water discharged with TSS below 50mg/L may still cause pollution and breach section 120, if the receiving waters have a TSS less than 50mg/L at the time the discharge occurs.
- Appropriate erosion and sediment controls are in place, but a rainfall event occurs beyond the design capacity of those controls.
- Should a water pollution incident occur, being able to demonstrate due diligence in the implementation of environmental controls, and particularly erosion and sediment controls, may provide a defence against prosecution. Due diligence may be recognised if the proponent is able to demonstrate that erosion & sediment controls have been implemented in accordance with the requirements of The Blue Book. The Contractor must satisfy itself that appropriate management controls have been developed, implemented, maintained and documented to establish a due diligence defence.

All water discharges must be documented using the Water Discharge or Reuse Approval Form or site-specific equivalent. Discharge is not permitted until the Contractor Environment Manager or nominated representative has signed the discharge form. Note that in some cases the Sydney Metro Manager Environment or the Environmental Representative may be required to sign off the discharge form.

This procedure is not used for discharging water where the activity is covered by an EPL. The licence holder will have their own procedure covering the process for discharging water that addresses any site specific environmental conditions.

4.4. Requirements for Discharge to Waters

Water to be discharged must be tested and, if required, treated to ensure that it meets water quality criteria and that pollution of the receiving waters does not occur. Results of testing and details of any treatment undertaken must be noted on Water Discharge or Reuse Approval Form.

Note that an EPL may authorise discharge of water from specific locations or premises, and establish criteria that differ from those given in this Procedure. In such circumstances the EPL, and any conditions and criteria of that EPL, take precedence over this Procedure. Before water can be discharged to any receiving waters (whether on or off site), it must as a minimum meet the following criteria.

Table 2: Criteria for Discharge to Waters

Parameter	Criterion	Method	Time prior to discharge
Oil and grease	No visible	Visual inspection	< 1 hour
pH	6.5-8.5	Probe/meter [1]	< 1 hour
Total Suspended Solids (TSS)	< 50mg/L [2]	Meter/grab sample [3]	< 1 hour/< 24 hours

If the criteria above are not met, the water will have to be treated and retested prior to discharge (see Water Management and Discharge). If all criteria above are met then the water may be authorised for discharge by the Manager Environment (refer to Calibration).

Table 3: Salinity and TSS

1. Salinity	Salinity is determined by measuring the electrical conductivity (EC) of the water, using a meter. Setting an acceptable criteria range for salinity of discharge water is dependent on the salinity of the receiving waters and must be determined and applied on a site-specific basis following background water quality monitoring. Measuring discharge waters for salinity shall only be undertaken if required by: • the Conditions of Approval; • an EPL; or • the particular conditions of the site (soil or geology) or the receiving waters.
2. Correlating Total Suspended Solid (TSS) with Turbidity	• Consideration may be given to establishing a site-specific relationship between total suspended solids concentration (TSS) and turbidity, measured in nephelometric turbidity units (NTU). This allows the TSS to be inferred from an NTU reading. The benefit of using NTU is that it can be quickly measured on site with a hand-held meter, whereas water quality meters that measure TSS are expensive and the results from samples sent for laboratory analysis will not be available immediately. However, the relationship between TSS and NTU is highly dependent on soil type and site activities (i.e. earthmoving, extractive works, rock cutting or grinding) and NTU is affected by factors other than suspended solids, such as colour (e.g. tannins may alter the NTU reading). • As such, a correlation curve (i.e. across a range of readings) must be determined between TSS and NTU that is specific to the site and cannot be applied to other sites. The correlation must be determined via laboratory analysis, by a NATA-accredited laboratory. Thorough records of the site-specific correlation must be kept, and any recommendations and/or limitations should be documented as part of the CEMP (For further information and guidance on correlating TSS with NTU refer to Appendix E of *The Blue Book*.).

[1] Litmus paper and pool testing kits are not to be used.
[2] As discussed in Section 4, a more stringent TSS criterion may need to be adopted in certain situations.
[3] Samples must be analysed at a NATA accredited laboratory.

4.5. Calibration

The goal of calibration is to minimise any measurement uncertainty by ensuring the accuracy of testing equipment which may drift over time. To be confident in the results being measured there is an ongoing need to service and maintain the calibration of equipment for reliable, accurate and repeatable measurements.

Due to the variety of water quality instruments available, it is not practical to provide instrument specific advice on storage, calibration and maintenance in this procedure. Before taking an instrument into the field, the operator should be familiar with the contents of the operating manual for that specific instrument, and ensure that it is stored, calibrated, maintained and used as per manufacturer's instructions. Detailed records of calibration and maintenance must be kept.

4.5.1. Treating Water Prior to Discharge

In order to meet EPA guidelines, TSS, pH levels and oil and grease must meet the required levels listed in table 4 below. Further water treatment may be required for other impurities not listed which may exist due to soil contamination or other factors. Based on the volume of water output and levels of contamination, methods used to treat water can vary in complexity and should be risk assessed and implemented by a competent person.

Best practice methods for water treatment of stormwater for construction sites can be found in Managing Urban Stormwater Soils and Construction Volume 1 (the Blue Book). The method for water treatment selected by the contractor must be documented in a procedure which includes any relevant Safety Data Sheets and safe handling and storage requirements for the substances used. All hazardous substances and contaminants must be subject to a health risk assessment. For further details please refer to the Principal Contractor Health and Safety Standard for occupational health and hygiene requirements.

Table 4: Treating water to discharge

1. Oil and grease	• Examine surface of water immediately prior to discharge for evidence of oil and grease (e.g. sheen, discolouration).
2. pH Levels	• If pH is outside the range 6.5-8.5 the water will need to be neutralised. • Re-test the water pH following treatment – repeat as necessary, until the acceptable pH 6.5 – 8.5 range is reached.

3. Total Suspended Solids (TSS)	• If TSS are greater than 50mg/L, the sediments need to settle to the bottom or be removed. This can be achieved via the following methods:
	  ○ Natural settlement – this could take a long time or not occur at all (e.g. with dispersible clay soils). dependent on soil type and other characteristics, (refer to *The Blue Book*, Chapter 3 for further information).
	  ○ Flocculation – chemical treatment with a flocculant (e.g. gypsum). If the flocculant is being applied manually, an even application over the surface of the water is essential. If an automated dosing basin is used other flocculants such as Polyaluminium Chloride (PAC) and alum (aluminium sulphate) might also be suitable for use in this system. Only environmentally safe flocculants are to be used, based on the Environment Manager's review of Safety Data Sheet (SDS) information.
	  ○ Filtration – pumping or gravity feeding the water through a filter medium (e.g. geofabric) to another storage area (e.g. container or sediment basin) to remove sediment. The filter medium should be disposed of to a suitable facility.
	• Re-testing of water is required once treatment has been undertaken to ensure criterion for TSS is met.

Following treatment and retesting to ensure compliance with the criteria the water may be authorised for discharge by the Environment Manager (see section 4.5).

4.6. Requirements for Discharge to Land

The objective of discharging water to land (within the site boundary) is to allow the water to infiltrate into the ground, thus avoiding direct discharge to, or pollution of, waters. Any suspended solids in the water are deposited either on the surface or retained in underlying soil layers, so the TSS criterion does not apply. However, to avoid impacts to vegetation or soil contamination pH testing and a visual inspection for oil or grease must be undertaken (refer to Criteria for Discharge to Waters for criteria and testing methods).

4.6.1. Determining a Suitable Discharge Location

Consideration must be given to the following factors when determining a suitable offsite location:

(a) Direction of groundwater flow – recharging groundwater that will subsequently flow either back onto site, into excavations or low lying areas should be avoided. This information should be available in the contamination site investigation reports and groundwater monitoring data if undertaken as part of planning approval.

(b) Erosion – the receiving area must have complete groundcover (e.g. grass) and established vegetation to minimise the risk of erosion. Guidance on best practice for reducing the risk of erosion can be found in Managing Urban Stormwater available here: https://www.environment.nsw.gov.au/resources/water/BlueBookVol1.pdf.

(c) Flora and fauna – water must not be discharged to areas where there is potential to have an adverse effect on any flora or fauna species. Information on ecological surveys for flora and fauna can be found in the Environmental Impact Statement and the Fauna and Flora Management Plan.

(d) Flooding – the receiving area must have the infiltration capacity to receive the volume of water to be discharged, without causing flooding or significantly increasing the risk of flooding should subsequent rainfall occur. This information can be found in the Flood Modelling undertaken for the Environmental Impact Statement.

4.6.2. Criteria for Discharge to Land

Discharge to land within the site boundary shall only occur if:

(a) There is no visible oil or grease (otherwise treat in accordance with Treating Water Prior to Discharge).

(b) The pH levels are between 6.5 and 8.5 (otherwise treat in accordance with Treating Water Prior to Discharge).

(c) No surface runoff will be generated from the discharge and there is no potential for discharged water to reach any watercourse (within or outside the site).

(d) No erosion is caused from the discharge and appropriate erosion and sediment control are installed in accordance with *The Blue Book*.

(e) All discharge water can be wholly contained within the site boundary.

If all criteria above are met then the water may be authorised for discharge to land by the Environment Manager – go to Reuse on Site.

4.7. Reuse on Site

Water may be reused on site, for example, for dust suppression, to assist with compaction or for watering landscape/bush regeneration areas. As with discharges to land, the TSS criterion does not apply as water will not be discharged to any watercourse. However, pH testing and a visual inspection for oil or grease must be undertaken (refer to Criteria for Discharge to Waters see section 4.4.1.1for criteria and testing methods).

4.7.1. Criteria for Reuse on Site

Reuse on site shall only occur if:

(a) There is no visible oil or grease (otherwise treat in accordance with Treating Water Prior to Discharge.

(b) The pH levels are between 6.5 and 8.5 (otherwise treat in accordance with Treating Water Prior to Discharge).

(c) No erosion is caused from the discharge.

(d) Any runoff generated by the reuse is controlled entirely within the site boundary and appropriate sediment controls are installed and maintained in accordance with *The Blue Book*.

If all criteria above are met then the water may be authorised for reuse by the Environment Manager – go to Reuse on Site.

4.8. Discharging Water

Once water has been tested and meets all the criteria for discharge to either waters or land, or for reuse on site, the Nominated Representative must authorise the discharge by signing the Water Discharge or Reuse Approval Form. If required, the Sydney Metro Manager Environment or the Environmental Representative may also sign off the form prior to commencing the discharge.

Discharge can use a siphon system or a pump, with a priority on delivering low energy flows to downstream drainage lines, watercourses or land. The flow from the outlet must be directed onto a non-erodible surface or material and, for discharges to waters, sufficient energy must be dissipated before the flow enters the natural watercourse to ensure no erosion shall occur.

The pump inlet must be placed so that it will not disturb or take in any sediment or sediment laden water. The discharge must be monitored throughout to ensure that the water being syphoned or pumped:

- Complies with the discharge criteria.
- Does not come into contact with any soil or exposed surfaces before discharging.

- Does not mix with any sediment laden/untested water at either the inlet or outlet.

Water must never be discharged or reused onsite in a manner that exceeds the capacity of sediment controls and/or generates runoff with the potential to discharge from site.

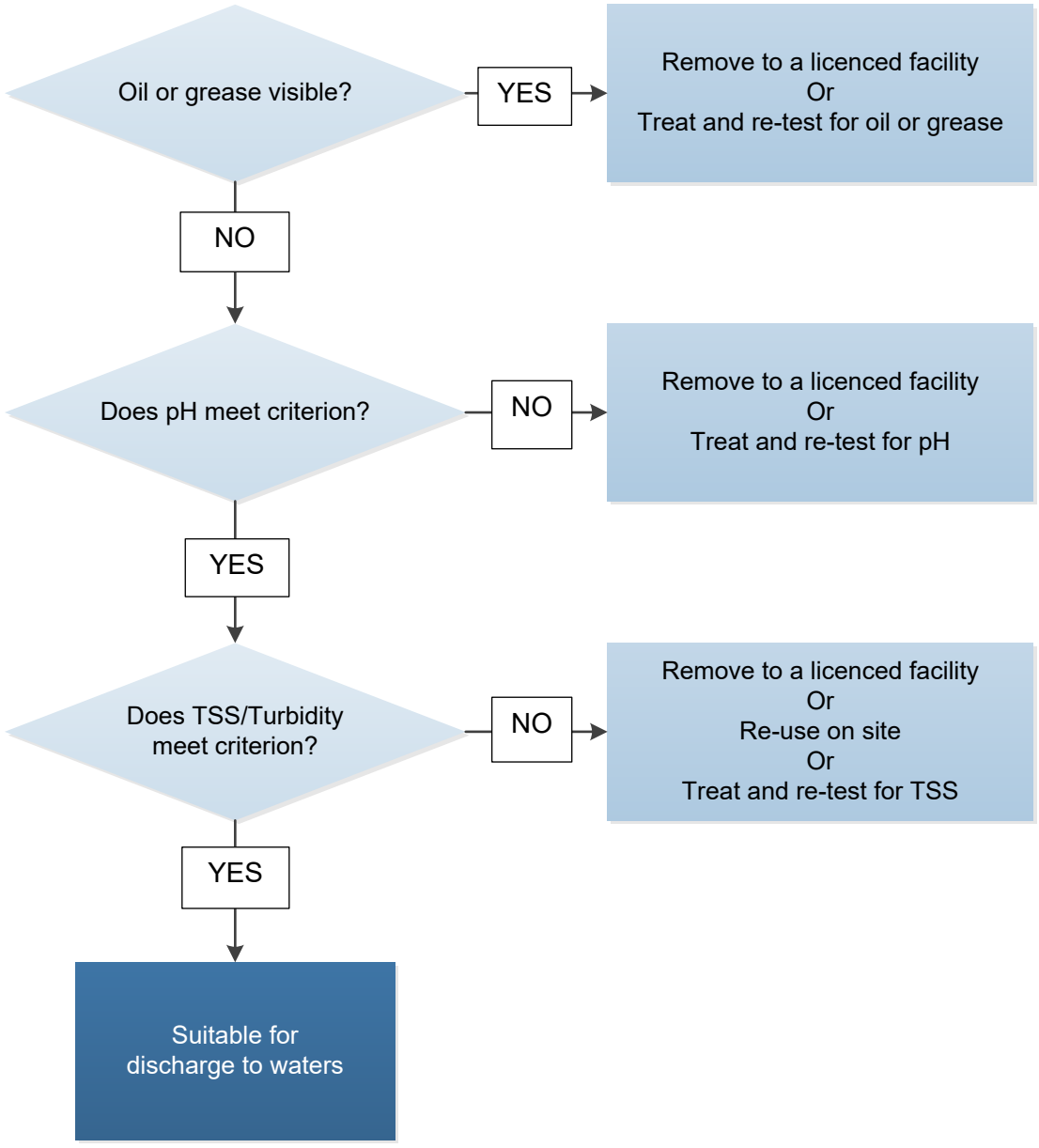

Figure 1: Process for testing water to determine options for removal, reuse, treatment or discharge

4.8.1. Monitoring and Maintenance

All sediment controls or areas that store water must be inspected to assess their integrity and capacity, as a minimum at the following times:

- Weekly during dry weather;
- Prior to forecast rainfall events; and
- During rainfall events (as often as possible), within 24 hours or as soon as possible following a rainfall event when the site is unattended (e.g. on weekends).

During any offsite or onsite discharge, regular monitoring must occur to ensure compliance with the requirements specified in this Procedure.

All rain event data shall be recorded for the site, including rainfall quantities from each rain event. Rainfall data should be gathered from the nearest monitoring station to the project.

4.8.2. Record Keeping

Records of all water discharges must be documented using the Water Discharge or Reuse Approval Form or site-specific equivalent. Records of all monitoring and maintenance measures must also be kept, on the site-specific environmental inspection checklist and other relevant document(s) (e.g. Site Foreman's diary).

5. Related documents and references

Related Documents and References
• Sydney Metro Environment and Sustainability Policy • Construction Environmental Management Framework • Water Discharge or Reuse Approval Form • Due Diligence Standard (TBC)

6. Superseded documents

Superseded Documents
There are no documents superseded as a result of this document.

7. Document history

Version	Date of approval	Notes
1.0	31 March 2015	New document.
2.0	7 July 2016	IMS Review.
3.0	27 March 2019	IMS Review.

APPENDIX K ENVIRONMENTAL REPRESENTATIVE ENDORSEMENT

HBI Healthy Buildings International Pty Ltd
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[redacted]

12 November 2021

REF: CEMP REV 3.0

Dear [redacted]

RE: Construction Environmental Management Plan (CEMP Rev 3.0)

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, Construction Environmental Management Plan (CEMP Rev 3.0 dated 10 November 2021).

It is noted that:

- The CEMP has been developed in accordance with the Phasing Report as submitted to DPIE for information. We also note subsequent comment and nomination of the ER to allow for ER endorsement under C2.
- Previous versions of the document have been reviewed and updated following comments from the ER.
- We understand 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.

As the approved Environmental Representative for the Metro West and as required by Conditions A30(d) and C3, on the basis of the above comments the Construction Environmental Management Plan (CEMP Revision 0.0) is endorsed.

Yours sincerely

Jo Robertson
Environmental Representative – Sydney Metro West
CC: John Ieroklis, Matthew Marrinan, Michael Woolley, Greg Brynes, Ben Armstrong; Todd Solomon

HBI Healthy Buildings International Pty Ltd
A.C.N. 003 270 693 A.B.N. 39 003 270 693

[redacted]

[redacted]

24 December 2021

REF: CEMP REV6

Dear [redacted]

RE: Sydney Metro Parramatta, Clyde and Westmead Enabling works: Construction Environmental Management Plan (CEMP Rev6)

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 Construction Environmental Management Plan (CEMP Rev 6 dated 22 December 2021).

It is noted that:

- The CEMP has been developed in accordance with the Phasing Report as submitted to DPIE for information. We also note subsequent comment and nomination of the ER to allow for ER endorsement under C2.
- An initial version of the CEMP was approved by the ER on 12 November 2021. This revision of the CEMP includes the addition of sub surface archaeological investigations at Parramatta and Clyde work sites and is known as Phase C2.
- DPIE has nominated the ER to endorse the CEMP under Condition C2 in a letter dated 24 September 2021.
- 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).

As the approved Environmental Representative for the Metro West and as required by Conditions A30(d) and C3, on the basis of the above comments the Construction Environmental Management Plan (CEMP Revision 6) is endorsed.

The requirements of the original endorsement remain relevant i.e. Delta (and or Sydney Metro) 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

[redacted]

Environmental Representative – Sydney Metro West

CC: [redacted]