



Southwest Metro – Dulwich Hill, Campsie and Punchbowl Station Upgrades Construction Environmental Management Plan

Sydney Metro Integrated Management System (IMS)

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00	13 November 2020	For External Consultation
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Terms and Definitions

Terms	Definitions
AARD	Archaeological Assessment and Research Design report
AS	Australian Standard
ASS	Acid Sulfate Soils
BC Act	Biodiversity Conservation Act 2016 (NSW)
CCS	Community Communication Strategy
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CNVIS	Construction Noise and Vibration Impact Statement
CoA	Conditions of Approval
CoCB	City of Canterbury-Bankstown Council
CSR	Combined Services Route
CSSI	Critical State Significant Infrastructure
CTMP	Construction Traffic Management Plan
CTR	Compliance Tracking Review
Cwth	Commonwealth
dB	Decibels
DECC	NSW Department of Environment and Climate Change
DPI	NSW Department of Primary Industries
DPIE	Department of Planning, Industry and Environment
EAP	Environmental Audit Program
ECM	Environmental Control Map
EESG	NSW Environment, Energy and Science Group (formerly OEH)
EIN	Environmental Improvement Notice
EIS	Environmental Impact Statement
EP&A Act	Environment Planning and Assessment Act 1979 (NSW)
EPA	NSW Environment Protection Authority
EPBC Act	Environment Protection and Conservation Act 1999 (Cwth)
EPL	Environment Protection Licence under the POEO Act
EPO	Environmental Performance Outcome
ER	Environmental Representative
ESCP	Erosion and sediment control plan
EWMS	Environmental Works Method Statement
E&SMS	Environment and Sustainability Management System
HMP	Heritage Management Plan
ICNG	Interim Construction Noise Guideline
IMS	Sydney Metro Integrated Management System
ISO	International Standardization Organisation

Terms	Definitions
IWC	Inner West Council
KPI	Key Performance Indicator
LV	Low Voltage
Minister, the	The Minister of New South Wales (NSW) Planning
NSW	New South Wales
NVMP	Noise and Vibration Management Plan
OCCS	Overarching Community Communication Strategy
OEH	NSW Office of Environment and Heritage (formerly DECC)
OOHW	Out-of-Hour Works
PASS	Potential Acid Sulfate Soils
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
Proponent	The person or organisation identified as the proponent in Schedule 1 of the planning approval. In this case Sydney Metro Authority
REMM	Revised Environmental Mitigation Measure
RMS	NSW Roads and Maritime Services
ROL	Road Occupancy Licence
SCO	Sydney Coordination Office
Planning Secretary	The Secretary of the Department of Planning, Industry and Environment
SM	Sydney Metro
SMP	Sustainability Management Plan
SPIR	Submissions and Preferred Infrastructure Report
SSI	State Significant Infrastructure
SWM	Southwest Metro
SWMP	Soil and Water Management Plan
SWMS	Safe Works Method Statement
TfNSW	Transport for New South Wales
UCM	Utilities Coordination Manager
VAMP	Visual Amenity Management Plan
WFDIP	Workforce Development and Industry Participation Plan

Construction Environmental Management Plan Compliance matrix

The Conditions of Approval (CoA) relevant to this Construction Environmental Management Plan (CEMP) are listed in Table 1. In accordance with CoA C1, the relevant requirements of the Sydney Metro City and Southwest Construction Environmental Management Framework (CEMF) have also been included in Table 1. This table also provides a cross reference to demonstrate where the relevant requirement is addressed in this CEMP, or other management documents.

Table 1 CEMP CoA compliance matrix

Condition Reference	Condition Requirements	Document Reference															
Conditions of Approval SSI-8256																	
C1	A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during Construction.	This document fulfils the requirements of C1. The Compliance Matrix in Appendix A tracks these requirements.															
C2	The CEMP 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.	Section 1.2															
C3	<p>The CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan and be consistent with the CEMF and CEMP referred to in Condition C1:</p> <table border="1"> <thead> <tr> <th>ID</th> <th>Consultation required for CEMP Sub-plans</th> <th>Relevant Government Agencies to be consulted for CEMP Sub-plans</th> </tr> </thead> <tbody> <tr> <td>a)</td> <td>Noise and Vibration</td> <td>Relevant Council(s)</td> </tr> <tr> <td>b)</td> <td>Soil and Water</td> <td>Relevant council(s), DoI, OEHL</td> </tr> <tr> <td>c)</td> <td>Waste and Spoil</td> <td>Relevant council(s)</td> </tr> <tr> <td>d)</td> <td>Heritage</td> <td>Heritage Council (or its delegate) and relevant council(s)</td> </tr> </tbody> </table>	ID	Consultation required for CEMP Sub-plans	Relevant Government Agencies to be consulted for CEMP Sub-plans	a)	Noise and Vibration	Relevant Council(s)	b)	Soil and Water	Relevant council(s), DoI, OEHL	c)	Waste and Spoil	Relevant council(s)	d)	Heritage	Heritage Council (or its delegate) and relevant council(s)	<p>Refer to relevant Sub-plans.</p> <p>Note: in accordance with the Sydney Metro City & Southwest - Sydenham to Bankstown Staging Report a Waste and Spoil Sub-plan is not required. As such, consultation in accordance with C3(c) is not required.</p> <p>Waste and Spoil is addressed within a procedure, refer to Appendix E.</p>
ID	Consultation required for CEMP Sub-plans	Relevant Government Agencies to be consulted for CEMP Sub-plans															
a)	Noise and Vibration	Relevant Council(s)															
b)	Soil and Water	Relevant council(s), DoI, OEHL															
c)	Waste and Spoil	Relevant council(s)															
d)	Heritage	Heritage Council (or its delegate) and relevant council(s)															
C4	The CEMP Sub-plans must be prepared in accordance with the CEMF .	Refer to the Project's Noise and Vibration Management Plan, Soil and Water Management Plan and Heritage Management Plan.															
C5	Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including copies of all correspondence from those agencies, must be provided with the relevant CEMP Sub-Plan	Refer to the Project's Noise and Vibration Management Plan, Soil and Water Management Plan and Heritage Management Plan.															
C6	Any of the CEMP Sub-plans may be submitted along with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before Construction.	Section 1.2															
C7	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary. The	Section 1.2															

Condition Reference	Condition Requirements	Document Reference									
	CEMP and CEMP Sub-plans , as approved by the Planning Secretary, including any minor amendments approved by the ER must be implemented for the duration of Construction. Where Construction of the CSSI is staged, Construction of a stage must not commence until the CEMP and CEMP Sub-plans for that stage have been approved by the Planning Secretary										
C8	<p>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 the CSSI against the predicted performance.</p> <table border="1"> <thead> <tr> <th>ID</th> <th>Consultation required for Construction Monitoring Programs</th> <th>Relevant Government Agencies to be consulted for Construction Monitoring Programs</th> </tr> </thead> <tbody> <tr> <td>a)</td> <td>Noise and Vibration</td> <td>Relevant Council(s)</td> </tr> <tr> <td>b)</td> <td>Water Quality</td> <td>Relevant council(s)</td> </tr> </tbody> </table>	ID	Consultation required for Construction Monitoring Programs	Relevant Government Agencies to be consulted for Construction Monitoring Programs	a)	Noise and Vibration	Relevant Council(s)	b)	Water Quality	Relevant council(s)	Refer to the Project's Noise and Vibration Management Plan and Soil and Water Management Plan.
ID	Consultation required for Construction Monitoring Programs	Relevant Government Agencies to be consulted for Construction Monitoring Programs									
a)	Noise and Vibration	Relevant Council(s)									
b)	Water Quality	Relevant council(s)									
C9	<p>Each Construction Monitoring Program must provide:</p> <ul style="list-style-type: none"> a) details of baseline data available; 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; h) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and i) any consultation to be undertaken in relation to the monitoring programs. 	Refer to the Projects' Noise and Vibration Management Plan and Soil and Water Management Plan.									
C10	The Construction Monitoring Programs must be developed in consultation with relevant government agencies as identified in Condition C8 of this approval and must include reasonable information requested by an agency to be included in a Construction Monitoring Programs during such consultation. Details of all information requested by an agency including copies of all correspondence from those agencies, must be provided with the relevant Construction Monitoring Program.	Refer to the Project's Noise and Vibration Management Plan and Soil and Water Management Plan.									
C11	The Construction Monitoring Programs 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.	Refer to the Project's Noise and Vibration Management Plan and Soil and Water Management Plan.									
C12	Construction must not commence until the Planning Secretary has approved all of the required Construction Monitoring Programs.	Refer to the Project's Noise and Vibration Management Plan and Soil and Water Management Plan.									
C13	The Construction Monitoring Programs, as approved by the Planning Secretary 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, whichever is the greater.	Refer to the Project's Noise and Vibration Management Plan and Soil and Water Management Plan.									
C14	The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.	Refer to the Project's Noise and Vibration Management Plan and Soil and Water Management Plan.									

Condition Reference	Condition Requirements	Document Reference
C15	Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.	Refer to the Project's Noise and Vibration Management Plan and Soil and Water Management Plan.

Table 2 CEMP CEMF compliance matrix

Clause	Requirement	Document Reference
Construction Environmental Management Framework		
3.3 (a)	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
3.3 (b)	Depending on the scope and scale of the works, TfNSW 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.	Section 1.2 Refer to the Sydenham to Bankstown Staging Report
3.3 (c)	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.	Section 2 This Plan
3.3 (d)	As a minimum the CEMP will:	
(i)	Include a contract specific environmental policy;	Section 1.3 and Appendix D
(ii)	Include a description of activities to be undertaken during Construction;	Section 1.1
(iii)	For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed;	Refer to relevant Sub-plan
(iv)	For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	Section 1.4 and relevant Sub-plans
(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 overall project organisation structure;	Section 3.3
(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;	Section 3.3
(vii)	Identify communication requirements, including liaison with stakeholders and the community;	Overarching Sydney Metro Community Communication Strategy

Clause	Requirement	Document Reference
(viii)	Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.9(b)	Section 3.5
(ix)	Management strategies for environmental compliance and review of the performance of environmental controls;	Sections 3.10, 3.16 and 3.17
(x)	Processes and methodologies for surveillance and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	Section 3.9
(xi)	Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	Section 3.8 and 3.10
(xii)	Include procedures for the control of environmental records.	Section 3.15
3.3 (e)	The CEMP and associated Sub-plans will be reviewed by TfNSW and/or an independent environmental representative (see Section 3.11) 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 and Environment (DPIE).	Section 1.2
3.3 (f)	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.	This plan and supporting documents have been written to meet the Sydney Metro project requirements.

Please refer to Appendix A for all other CoA, REMM and CEMF requirements relevant to the development of this Plan.

1. Introduction

Sydney Metro is Australia’s biggest public transport project. The network will deliver 31 metro stations and more than 65km of new metro rail. The Sydney Metro Network will provide opportunities to lead the transformation of Sydney’s urban environment and support transit orientated development connecting Sydney’s Central Business District to vibrant and attractive places across the Greater Sydney Region. The Sydney Metro Network will link Sydney’s three Metropolitan centres and introduce the necessary step change in rail infrastructure to ensure, the NSW Government’s aim of 30-minute cities as defined in Future Transport Strategy 2056.

The Sydney Metro Network has currently two core corridors, the Northwest Corridor and City and Southwest Corridor, with a further six corridors proposed as shown in Figure 1.

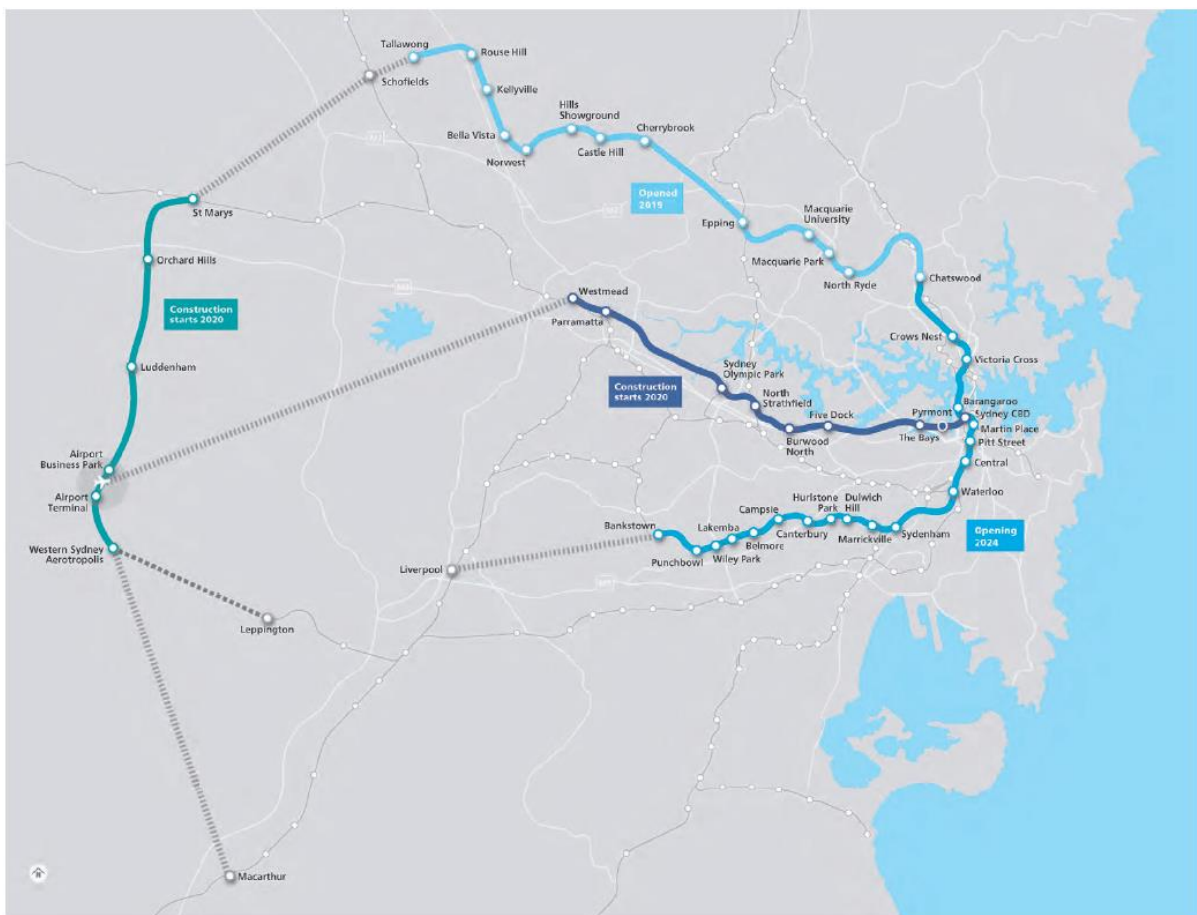


Figure 1 Sydney Metro route map

The Sydney Metro City & Southwest project includes a new 30km metro line extending metro rail from the end of the Metro North West Line at Chatswood, under Sydney Harbour, through new Central Business District stations and southwest to Bankstown. It is due to open in 2024 with the ultimate capacity to run a metro train every two minutes each way through the centre of Sydney.

Sydney Metro City & Southwest comprises two core components – the Chatswood to Sydenham project, and the Sydenham to Bankstown upgrade. This document refers to the Sydenham to Bankstown upgrade (herein referred to as the Southwest Metro (SWM) Project).

The SWM Project was declared to be State Significant Infrastructure (SSI) and Critical State Significant Infrastructure (CSSI) by a Ministerial order on 10 December 2015 under Section 5.12 (4) and 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (previously referred to as sections 115U(4) and 115V prior to amendment of the EP&A Act). An Environmental Impact Statement (EIS) (GHD/AECOM September 2017) was prepared and placed on public exhibition from 13 September 2017 to 8 November 2017. A Submissions and Preferred Infrastructure Report (SPIR) (GHD/AECOM June 2018) was prepared in response to the submissions received during the EIS exhibition period. The SPIR was placed on public exhibition from 20 June 2018 to 18 July 2018. A Submissions Report was then prepared by Sydney Metro (September 2018) in response to submissions received during the SPIR exhibition period. The project was approved by the Minister for Planning on 12 December 2018 (Planning Approval number SSI-8256).

A modification report for the SWM Project was prepared by Sydney Metro (May 2020) and placed on public exhibition from 21 May 2020 to 4 June 2020. A Submissions Report was prepared by Sydney Metro (September 2020) in response to the submissions received during the modification report exhibition period. The SWM Project Modification was determined by the Minister for Planning on 22 October 2020.

1.1. Scope of works

This document refers to the Southwest Metro – Dulwich Hill, Campsie and Punchbowl Station Upgrades (the Project). Below is a description of the Construction scope for the Project:

Dulwich Hill Station

- Construction of new covered station concourse bridge from Bedford Crescent and Light Rail entry to Ewart Lane with connection to platforms;
- Refurbishment and reuse of overhead booking office;
- Refurbishment and reuse existing platform building;
- Provision of new safety rail to Wardell Road bridge adjacent to booking office;
- Construction of new landscaped public plaza incorporating lighting, seating and access to station entries;
- Construction of new platform building;
- Construction of new shared path linking Wardell Road and Ewart Lane;
- Construction of new stairs to Ewart Lane car park;
- Provision of accessible access to the pedestrian crossing at Wardell Road;
- Provision of new bicycle parking hoops;
- Construction of new service building and associated infrastructure;
- Platform works, including raising platform and provision of platform drainage. Installation of 1500mm deep tile zone, temporary tactiles and yellow safety line;
- Platform works also includes provision for platform edge screens (PES), platform screen doors (PSD) and mechanical gap fillers (MGF) (to be installed by others);
- Provision of new pedestrian lighting between Bedford Crescent and Keith Lane;
- Provision of new shelter and seat for kiss and ride on Bedford Crescent;
- Landscaping to the south of the station;

- Dudley Street bus interchange area works;
- Provision of new vertical protection screens to both sides of existing Wardell Road bridge;
- Provision of 2 new lifts and associated infrastructure, landings and canopies to lift entries;
- Installation of new security and segregation fencing;
- Construction of new Combined Services Route (CSR); and
- Services relocations / enabling works.

Campsie Station

- Refurbishment and reuse of heritage platform buildings;
- Construction of secured bike locker;
- Construction of new canopy over the concourse;
- Platform works, including raising platform and provision of platform drainage. Installation of 1500mm deep tile zone, temporary tactiles and yellow safety line;
- Platform works also includes provision for PES, PSD and MGF (to be installed by others);
- Replace open fencing on Beamish Street and renew existing planters;
- Installation of 16 x bike racks off North Parade in existing car park;
- Construction of new services building and associated infrastructure;
- Replacement of planter beds to corners of Beamish Street;
- Construction of new kiss and ride on South Parade;
- Installation of new security and segregation fencing;
- Construction of new CSR; and
- Services relocations / enabling works.

Punchbowl Station

- Repurpose and refurbishment of station rooms in Platform buildings 1 and 2;
- Provision of three new lifts and associated infrastructure, landings and canopies to lift entries and platform;
- Installation of new canopy over existing stair at Northern entry;
- Installation of new roof above the concourse bridge, Southern entry and platform stairs.
- Removal of hooped top fencing to station concourse overbridge and platform stairs and replaced with compliant glass screens and stair balustrades;
- Installation of new handrails;
- Removal of existing southern stairs, installation of new concrete slab at concourse level and new stairs further south;

- Platform works, including raising platform and provide platform drainage. Installation of 1500mm deep tile zone, temporary tactiles and yellow safety line. Provision of egress ramps off platform as required by fire life safety strategy;
- Platform works also includes provision for PES, PSD and MGF to be installed by others;
- Installation of new bike parking hoops off The Boulevarde and adjacent to the Northern entry;
- Installation of bollards to the edge of the carpark and extension to new paving to lift landing and edge of carpark;
- Landscaping to western end of Southern entry behind the retail properties;
- Mass planting to existing garden beds adjacent to Northern entry and replace timber logs;
- Upgrade to existing pedestrian pathway under Punchbowl Road, including handrail and fencing;
- Upgrade to existing lighting;
- Paint finish to wall and soffit and provision for CCTV;
- Landscaping and new lighting to Northern entry;
- Provision for pop-up retail in the park adjacent the Northern entry.
- Provision of kiss and ride on The Boulevarde;
- Construction of new service building, associated infrastructure and landscaping;
- Installation of new security fencing;
- Construction of retaining walls;
- Construction of new CSR; and
- Services relocations / enabling works.

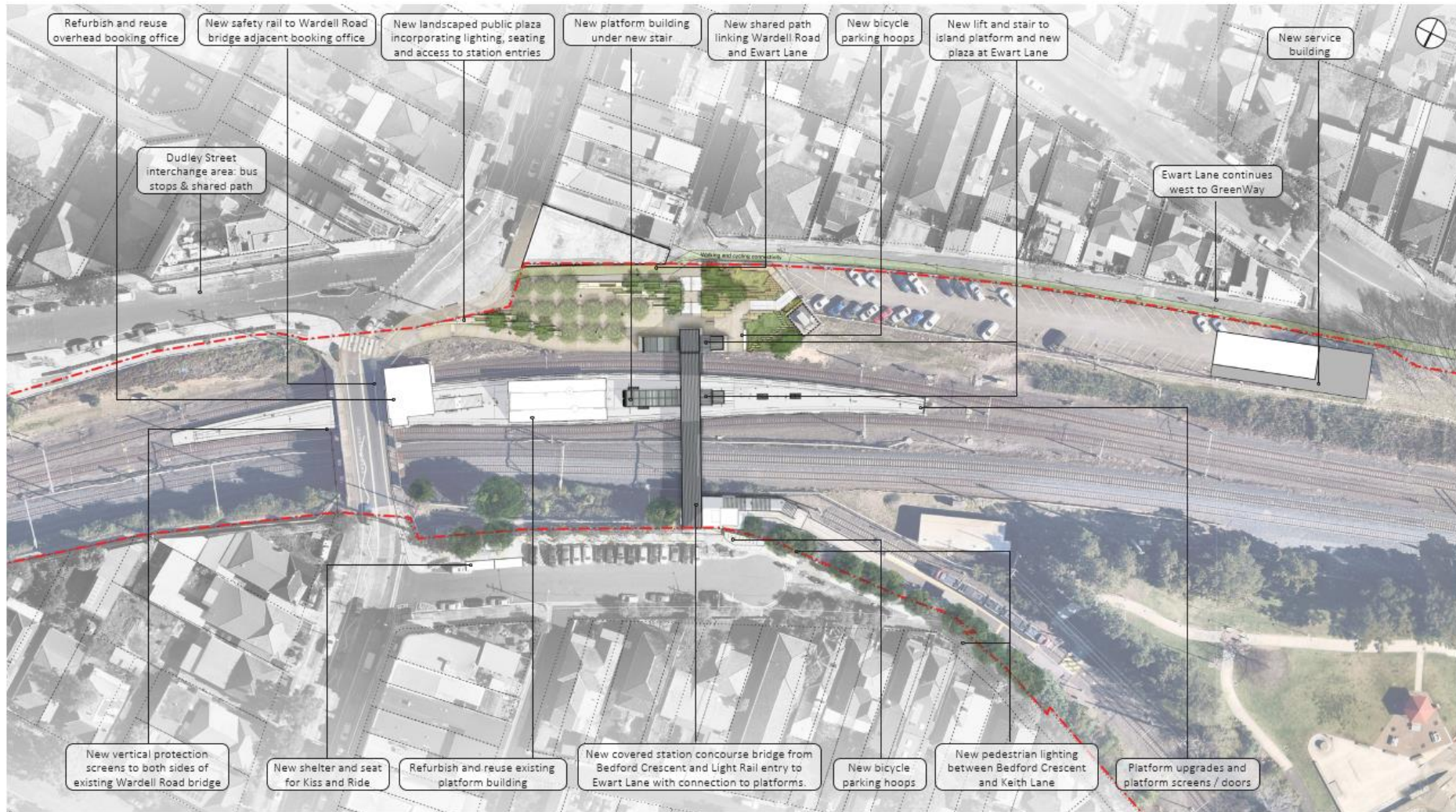


Figure 2 Sydney Metro Dulwich Hill Station upgrades

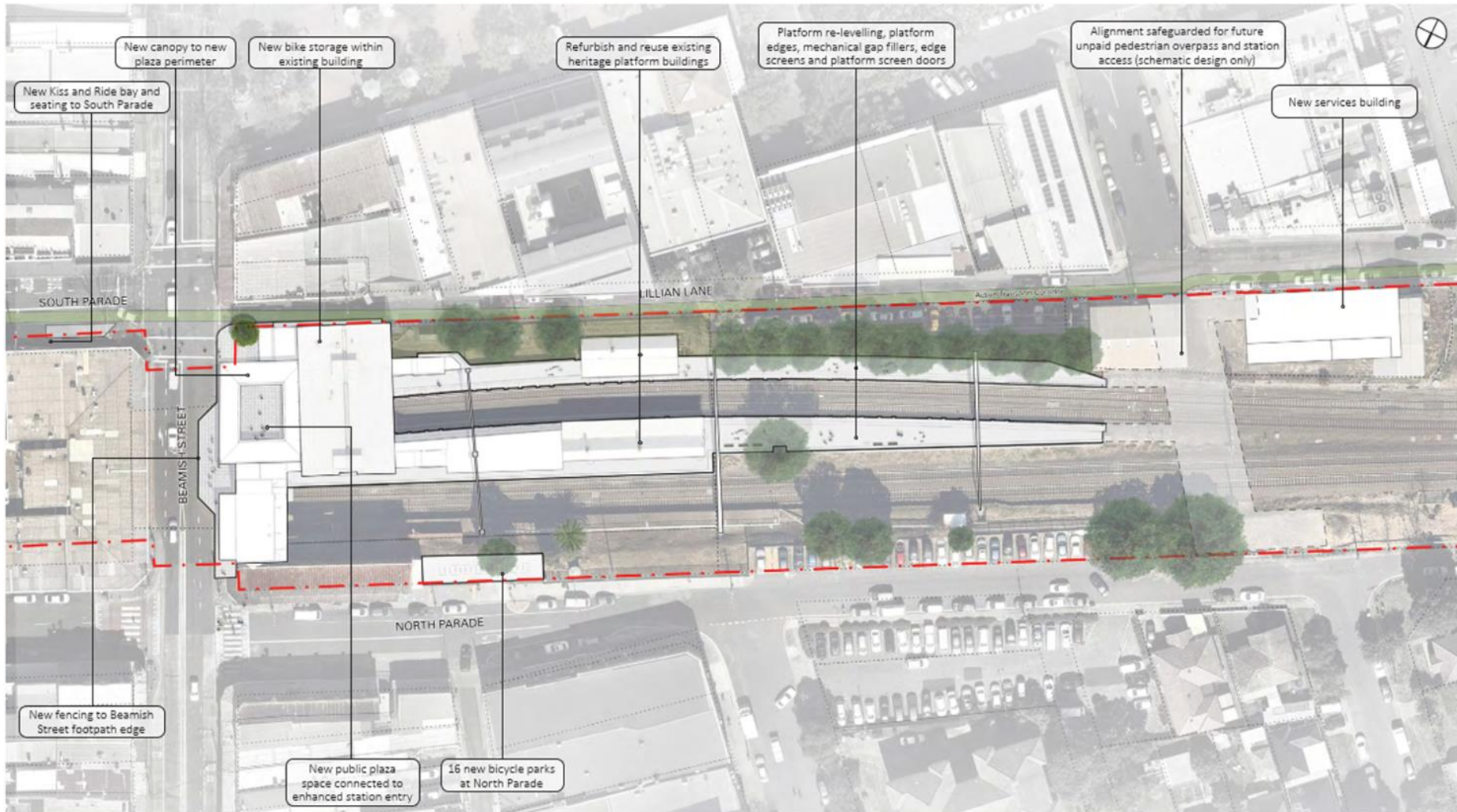


Figure 3 Sydney Metro Campsie Station upgrades

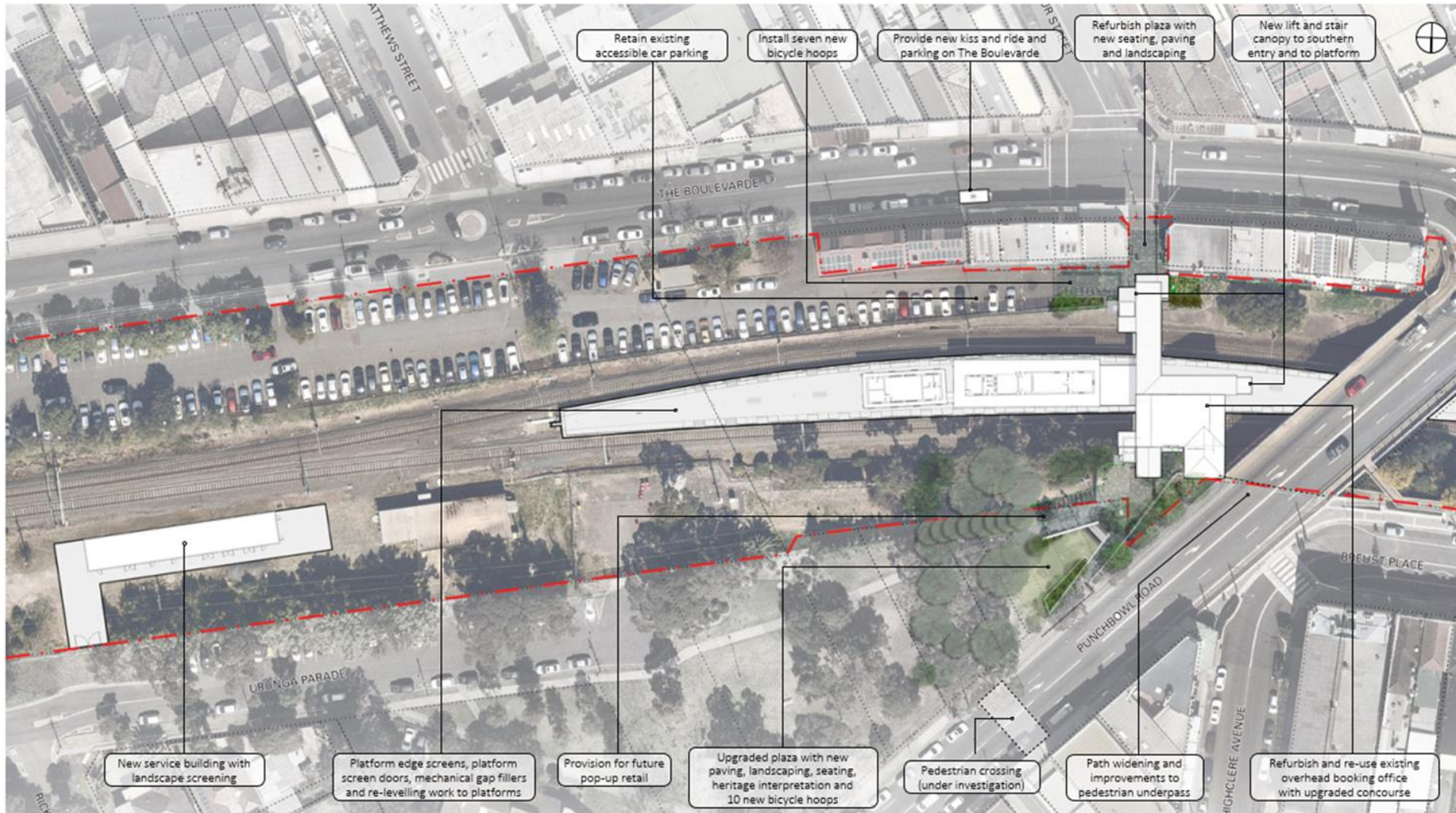


Figure 4 Sydney Metro Punchbowl Station upgrades

Temporary Construction facilities to facilitate Construction of the Project would be located at the locations outlined in Table 3. Refer to Figure 2.1 within Appendix B of the SPIR for indicative layouts of these facilities. Figure 2.4 within Appendix B of the SPIR also provides further detail of work site W7.

Table 3 Temporary Construction facilities

SPIR reference	Location	Existing use
C2	Ewart Lane, Dulwich Hill	Rail corridor, parking
W3	Bedford Crescent, Dulwich Hill	Rail corridor and Council car park
W7	Close Street, Canterbury	Former Canterbury Bowling and Community Club
C7	North Parade/Wilfred Avenue, Campsie	Rail corridor, road reserve with parking
C8	Lilian Street, Campsie	Rail corridor, parking
C18	Urunga Parade Punchbowl	Rail corridor
C19	Urunga Parade, Punchbowl	Rail corridor, road reserve
C20	The Boulevard, Punchbowl	Parking and corridor
C21	Breust Place, Punchbowl	Rail corridor

When establishing a construction facility, the Principal Contractor will consider the requirements of the CEMF, CoA and REMM in developing the layout of the site. Including, but not limited to:

- The location of noise intensive works and 24 hour activities in relation to noise sensitive receivers;
- The location of site access and egress points in relation to noise and light sensitive receivers, especially for sites proposed to be utilised 24 hours per day;
- The use of site buildings to shield noisy activities from receivers;
- The use of noise barriers and / or acoustic sheds where feasible and reasonable for sites proposed to be regularly used outside of daytime hours;
- Aim to minimise the requirement for reversing, especially of heavy vehicles.

1.2. Purpose of this CEMP

This Construction Environmental Management Plan (CEMP) outlines how the Principal Contractor will meet the environmental outcomes for the design and Construction of the Project. This will be achieved through the development and application of the Principal Contractor’s contract-specific Environmental Management System (EMS) and this Plan. Sydney Metro is delivering the Project on behalf of the NSW Government.

In accordance with the Sydney Metro City & Southwest - Sydenham to Bankstown Staging Report, the Principal Contractor will implement the environmental management requirements of the CEMF in line with the DCP column in Table 5 of the Staging Report.

Figure 5 outlines the applicability of the CEMF to the Project (and is extracted from Table 5 of the Staging Report).

CEMF Environmental Management Category	DCP
Waste / Spoil / Recycling *	CEMP-P
Groundwater	CEMP
Traffic	CoA E47 CTMP
Noise & Vibration	CEMP sub-plan
Heritage	CEMP sub-plan
Flora & Fauna / Biodiversity	CEMP-P
Visual Amenity	CEMP sub-plan
Carbon & Energy	SMP
Materials	SMP sub-plan
Soil & Water	CEMP sub-plan
Air Quality	CEMP-P
Workforce Development	WFDIP Plan

CEMP-P: CEMP procedure

CTMP: Construction Traffic Management Plan (standalone document)

SMP: Sustainability Management Plan (standalone document)

WFDIP: Workforce Development and Industry Participation Plan (standalone document)

Figure 5 CEMF Applicability to the Project

The following CEMP sub plan, which will be prepared separately to this document, will form part of the CEMP but is not required to be submitted to DPIE:

- Visual Amenity Management Plan (as referred to under Section 3.4 of the CEMF).

The following stand-alone plan will also be prepared and submitted to DPIE for information and to TfNSW for information following engagement with the Sydney Coordination Office (SCO) (as per CoA E47):

- Construction Traffic Management Plan (as referred to in CoA E47 and Section 3.4 of the CEMF).

The following plans are Sub-plans to the Sustainability Management Plan. Refer to the Sustainability Management Plan for further details.

- Carbon and Energy Management Plan; and
- Materials Management Plan.

Management of the following aspects during Construction have been incorporated into the CEMP as procedures (refer to Appendix E for CEMP procedures):

- Biodiversity;
- Groundwater;
- Air Quality; and
- Waste and Spoil.

The CEMP has been developed in accordance with the:

- Framework of AS/NZS ISO 14001:2015 EMS;
- New South Wales Environmental Management Systems Guidelines (Edition 3); and
- Sydney Metro's Construction Environmental Management Framework v3.

Implementation of the CEMP will:

- Identify the environmental obligations and the hazards and risks associated with the works (indicative risks are included in Appendix C);
- Help prevent unauthorised environmental harm;
- Ensure the Principal Contractor complies with the Minister for Planning's Project Planning Approval SSI-8256;
- Ensure the Principal Contractor obtains and complies with relevant licences and approvals, including an Environment Protection Licence (EPL) if required;
- Comply with all relevant environmental legislation;
- Minimise negative impacts on the community that relate to the environmental impacts of the works; and
- Identify and implement feasible opportunities to reduce the environmental impact of the works that are beyond contractual and compliance requirements.

In accordance with CoA C2 and C6 this CEMP will be endorsed by the Environmental Representative (ER) before being submitted to the Planning Secretary of the DPIE along with, or prior to, the submission of the Sub-plans no later than one (1) month before commencement of Construction.

In accordance with CoA C7, Construction will not commence until the CEMP and relevant Sub-plans listed in CoA C3 of the Project Planning Approval have been approved by the Planning Secretary of DPIE.

1.3. Environment and sustainability policy statement

Sydney Metro's Environment and Sustainability Policy is included in Appendix D. The policy reflects a commitment in the delivery of the project to:

- Align with, and support, Transport for NSW (TfNSW) Environment & Sustainability Policy;
- Optimise sustainability outcomes, transport service quality, and cost effectiveness;

- Develop effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity conservation;
- Be environmentally responsible, by avoiding pollution, enhancing the natural environment and reducing the project ecological footprint, while complying with all applicable environmental laws, regulations and statutory obligations; and
- Be socially responsible by delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships.

Once a Principal Contractor has been engaged for the Project, this CEMP will be revised to contain and reflect the Principal Contractor's contract specific environmental policy, in accordance with Section 3.3(d)(i) of the CEMF.

1.4. Objectives and targets

The key objective of this Plan is to set in place a management approach for the Project which addresses all relevant environmental and planning requirements. Key environmental performance outcomes, commitments and mitigation measures for the Project have been sourced from the project's EIS and the CEMF and are summarised in Table 4.

Additional environmental targets for the works are:

- Compliance with the Minister for Planning's Project Planning Approval SSI-8256;
- Compliance with all permits and licences; and
- Continual improvement through collaboration with Sydney Metro, regulatory agencies and other key stakeholders.

Table 4 Objectives and targets

Objective	Target	Management measure
<p>Biodiversity</p> <p>The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity. Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project Construction and operation.</p>	<p>The project is designed to minimise impacts on biodiversity. Where practicable, the design minimises the need to clear vegetation.</p> <p>Potential impacts on biodiversity are managed in accordance with relevant legislation, including the EP&A Act, <i>Biodiversity Conservation Act 2016</i> (BC Act) and <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act). The biodiversity outcome is consistent with the Framework for Biodiversity Assessment (OEH, 2014a).</p>	<p>Compliance Monitoring and Reporting Program</p>
<p>Flooding and hydrology</p> <p>The project minimises adverse impacts on existing flooding characteristics. Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure. Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised. The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources.</p>	<p>Construction is undertaken in a manner that minimises the potential for adverse flooding impacts, through staging of works and the implementation of mitigation measures.</p> <p>Construction compounds and work sites are laid out such that flows are not significantly impeded.</p> <p>The project maintains or reduces flood levels within and adjacent to the rail corridor.</p> <p>The project avoids long term impacts to surface water.</p> <p>Opportunities to reuse water resources are considered during the design process.</p> <p>The use of water during Construction is minimised.</p>	<p>Management of soil and surface water will be undertaken throughout the delivery of the Project in accordance with the SWMP.</p>
<p>Heritage</p> <p>The design, Construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.</p> <p>The design, Construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.</p>	<p>The design is sympathetic to the historic significance of existing stations and the heritage significance of surrounding listed heritage items, and where practicable, avoids and minimises impacts to heritage.</p> <p>The design and mitigation strategies are reviewed by the Sydney Metro Design Review Panel.</p> <p>Impacts on heritage are managed in accordance with relevant legislation, including the EP&A Act, the Heritage Act 1977, and relevant guidelines.</p> <p>The potential impacts identified are mitigated by the mitigation measures provided.</p>	<p>Management of heritage will be undertaken throughout delivery of the project in accordance with the HMP.</p>
<p>Noise and vibration – amenity</p> <p>Construction noise and vibration (including airborne noise, groundborne noise and</p>	<p>The project will minimise impacts to the local community by:</p>	<p>Management of noise and vibration impacts will be undertaken</p>

Objective	Target	Management measure
<p>blasting) are effectively managed to minimise adverse impacts on acoustic amenity.</p> <p>Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the project are effectively managed to protect the amenity and well-being of the community.</p>	<p>controlling noise and vibration at the source</p> <p>controlling noise and vibration on the source to receiver transmission path</p> <p>controlling noise and vibration at the receiver</p> <p>implementing practicable and reasonable measures to minimise the noise and vibration impacts of Construction activities on local sensitive receivers.</p>	<p>throughout delivery of the project in accordance with the NVMP.</p>
<p>Noise and vibration – structural</p> <p>Construction noise and vibration (including airborne noise, groundborne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings, items including Aboriginal places and environmental heritage, and nearby road infrastructure.</p> <p>Increases in noise emissions and vibration affecting environmental heritage as defined in the Heritage Act 1977 during operation of the project are effectively managed.</p>	<p>The project minimises impacts to structures by:</p> <p>controlling vibration at the source</p> <p>controlling vibration on the source to receiver transmission path</p> <p>implementing practicable and reasonable measures to minimise vibration impacts of Construction activities on structures.</p>	<p>Management of noise and vibration impacts will be undertaken throughout delivery of the project in accordance with the NVMP.</p>
<p>Socioeconomic, land use and property</p> <p>The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities.</p> <p>The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure.</p>	<p>The project minimises impacts to the local community, community infrastructure, and businesses.</p> <p>Impacts to existing land use and properties are minimised.</p> <p>The project is appropriately integrated with adjoining land uses, and access to private properties is maintained.</p>	<p>Management will be undertaken in accordance with the REMMs and CoA's.</p>
<p>Soils</p> <p>The environmental values of land, including soils, subsoils and landforms, are protected.</p> <p>Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.</p>	<p>Site-specific soil characteristics are taken into consideration during detailed design and Construction.</p> <p>Any contamination is managed in accordance with relevant regulatory requirements.</p> <p>Any soil waste is assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).</p>	<p>Management of soil and surface water will be undertaken throughout the delivery of the Project in accordance with the SWMP.</p>
<p>Sustainability</p> <p>The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources.</p> <p>Conservation of natural resources is maximised.</p>	<p>Sustainability considerations are integrated throughout design, Construction, and operation.</p> <p>The project would be carried out in accordance with the Sydney Metro City & Southwest Sustainability Policy.</p>	<p>Refer to Sydney Metro Sustainability Management Plan and Principal Contractor's Sustainability Management Plan.</p>
<p>Traffic, transport and access</p>	<p>Impacts to traffic and transport are minimised.</p>	<p>Management will be undertaken in</p>

Objective	Target	Management measure
<p>Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts.</p> <p>The safety of transport system customers is maintained.</p> <p>Impacts on network capacity and the level of service are effectively managed.</p> <p>Works are compatible with existing infrastructure and future transport corridors.</p>	<p>Motorist, pedestrian and cyclist safety will be maintained or improved.</p> <p>Safe access to properties is maintained.</p>	<p>accordance with the CTMP, REMMs and CoA's.</p>
<p>Place making and urban design</p> <p>The project capitalises on opportunities to improve place, character and quality of the surrounding build and natural environment (including adjoining public spaces).</p> <p>The project contributes to the accessibility and connectivity of communities.</p>	<p>The project is designed to have regard to the surrounding landscape and visual environment and to minimise the potential for visual impacts.</p> <p>The project is visually integrated with its surroundings.</p> <p>The stations provide a sense of place, and contribute positively to the surrounding urban environment.</p> <p>The design takes into account future planning for the Sydenham to Bankstown Corridor Urban Renewal Strategy.</p> <p>Vegetation providing screening to the rail corridor is retained where practicable.</p>	<p>Management will be undertaken in accordance with the REMMs and CoA's.</p>
<p>Water – quality</p> <p>The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if applicable).</p>	<p>Impacts to water quality during Construction and operation are minimised.</p> <p>Erosion and sediment controls during Construction are implemented in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008a).</p> <p>The project would protect or contribute to achieving the Water Quality Objectives, during Construction and operation.</p> <p>Construction water quality discharge would comply with the requirements of the Water Quality Monitoring Program.</p>	<p>Management of soil and surface water will be undertaken throughout the delivery of the Project in accordance with the SWMP.</p>
<p>Utilities</p> <p>The project is designed, constructed and operated to minimise impacts to utilities and provision of such to the public.</p>	<p>Impacts to utilities during Construction are minimised. The design takes into account the input of utility providers and owners.</p>	<p>Management will be undertaken in accordance with the REMMs and CoA's as well as the Utilities Management Strategy.</p>

2. Legal and approval requirements

2.1. Environmental planning approval process background

As discussed in Section 1, in September 2017 an EIS for the SWM Project was placed on public exhibition for a period of 56 days (eight weeks). A SPIR for the SWM Project was prepared and placed on public exhibition in June 2018 for a period of 28 days (four weeks). A Submissions Report for the SWM project was prepared and publicly released in September 2018. The SWM Project was approved on 12 December 2018 (SSI 8256). A Project Modification was prepared in May 2020 and the Project Modification MOD-1 was approved on 22 October 2020.

Under Section 5.23 of the EP&A Act the following authorisations are not required for approved State Significant Infrastructure (SSI) (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply):

- A permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*;
- An approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*;
- An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*;
- A bush fire safety authority under section 100B of the *Rural Fires Act 1997*; and
- A 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 of the *Water Management Act 2000*.

In addition, Division 8 of Part 6 of the *Heritage Act 1977* does not apply to prevent or interfere with the carrying out of approved SSI and the following directions, orders or notices cannot be made or given so as to prevent or interfere with the carrying out of approved critical SSI:

- An interim protection order (within the meaning of the *National Parks and Wildlife Act 1974*);
- An order under Division 1 (Stop work orders) of Part 6A of the *National Parks and Wildlife Act 1974*, or Division 7 (Stop work orders) of Part 7A of the *Fisheries Management Act 1994*;
- A remediation direction under Division 3 (Remediation directions) of Part 6A of the *National Parks and Wildlife Act 1974*;
- an order or direction under Part 11 (Regulatory compliance mechanisms) of the *Biodiversity Conservation Act 2016*;
- An environment protection notice under Chapter 4 of the *Protection of the Environment Operations Act 1997*; and
- An order under section 124 of the *Local Government Act 1993*.

The abovementioned potential aspects and impacts are deemed to be addressed under the Project Planning Approval.

2.2. Approval and licencing requirements

The key legislative and approval requirements for the works are outlined in Table 5. Further detail is provided in Appendix B.

Table 5 Approval / licence requirements

Regulatory authority	Approval / licence required for this Project
Department of Planning, Industry and Environment (DPIE)	Project Planning Approval granted under Division 5.2 of the <i>EP&A Act</i> (no. SSI-8256) Approval of reports, studies and plans as required by the Project Planning Approval.
Commonwealth Department of Environment	The <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) prescribes the Commonwealth’s role in environmental assessment, biodiversity conservation and the management of protected areas. Under the EPBC Act, matters of national environmental significance include world and national heritage properties and listed biodiversity impacts. The EIS concludes that the Project would not have a significant impact in relation to these matters. As such the Project is not a Controlled Action and does not require assessment and approval under the EPBC Act.
TfNSW and other road authorities	In accordance with the <i>Roads Act 1993</i> , the Principal Contractor will obtain the consent of the appropriate roads authority to erect a structure, carry out work in, on or over a public road, or dig up or disturb the surface of a public road. If the applicant is a public authority, the roads authority must consult with the applicant before deciding whether or not to grant consent or concurrence. As required, road occupancy permits will be sought in accordance with the Construction Traffic Management Plans.
Sydney Water	In accordance with the <i>Sydney Water Act 1994</i> , the Principal Contractor will obtain prior approval to connect to the sewer, or discharging to sewer if required under a Trade Waste Agreement.

2.3. Relevant legislation

Legislation and other requirements relevant to the Project are outlined in Appendix B.

2.4. Additional environmental assessment

Changes to the project may require an assessment to determine consistency with the Project Approval and Environmental Documents. This assessment would be carried out in accordance with the Sydney Metro Planning Approval Consistency Assessment Procedure (SM ES-PW314).

The assessment will include:

- A description of the existing surrounding environment;
- Details of the ancillary works and Construction activities required to be carried out including the hours of works;
- An assessment of the environmental impacts of the works, including, but not necessarily limited to traffic, noise and vibration, air quality, soil and water, ecology and heritage;
- Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts; and
- Identification of the timing for completion of the Construction works, and how the sites would be reinstated (including any necessary rehabilitation).

Consistency Assessments would require approval from the Sydney Metro Director of Environment, Sustainability and Planning. Consistency Assessments would be made available on the Principal Contractor’s website and provided to the ER for information.

2.5. Standards and codes

The project will be constructed in accordance with relevant standards and codes.

Access to the latest Australian standards is available through iGATE.

The environmental publications, standards, codes of practice and guidelines included in Table 6 are relevant to the Project and are referenced throughout this Plan. Other aspect specific guidelines are discussed in the relevant CEMP Sub-plans and other project management plans.

Table 6 Applicable standards and codes

Standard / Guideline	Relevant authority
ISO 14001 Environmental Management Systems – Requirements with Guidelines for use	International Organisation for Standardization
AS/ NZS 1940: 2017 – The Storage and Handling of Flammable and Combustible Liquids	Standards Australia
AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting	Standards Australia
Australian Dangerous Goods Code	National Transport Commission
Environment Protection Manual for Authorised Officers: Bunding and Spill Management technical bulletin (EPA, 1997)	NSW EPA
Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009)	NSW EPA
ISO 14001 Environmental Management Systems – Requirements with Guidelines for use	International Organisation for Standardization
Managing Urban Stormwater: Soil and Construction (Landcom, 2008)	Landcom
Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2008)	NSW EPA

2.6. Environment Protection Licence

At this stage, Sydney Metro’s Principal Contractor has not sought an Environment Protection Licence (EPL) from NSW EPA.

If Sydney Metro’s Principal Contractor applies for an EPL for the Project, then this CEMP will be updated to incorporate the EPL’s requirements.

For elements of the Project’s scope, the Sydney Trains’ EPL 12208 may apply. Refer to Appendix A of this Project’s CEMP Sub-plans for relevant requirements from EPL 12208.

2.7. Project Environment and Sustainability Management System

At the time of drafting this CEMP, a Principal Contractor has not been engaged by Sydney Metro to carry out the Construction of this Project.

Once a Principal Contractor has been engaged for this Project, the CEMP will require revision by the Principal Contractor to integrate and outline the relationship between the CEMP and the Principal Contractors Environment and Sustainability Management System (E&SMS).

3. Environmental management plan

3.1. Preparation and availability of the CEMP

3.1.1. Preparation

Consistent with the requirements of CoA C1, this CEMP has been prepared in accordance with the approval documents and the Sydney Metro Construction Environmental Management Framework (CEMF).

The CEMP incorporates all relevant requirements of the EIS documentation, CoA, SPIR, Submissions Report, Modification Report as well as all relevant licences, permits and approvals for the Project including Sydney Metro's Environment and Sustainability Policy. The Sydney Metro Environment and Sustainability Policy has been attached to this CEMP (Appendix D).

For further detail regarding CEMP preparation refer to Section 1.2 of this CEMP. The CEMP will be submitted to the Planning Secretary prior to commencement of Construction as outlined in CoA C2.

3.1.2. Availability

This CEMP will be available to all personnel and subcontractors via the Principal Contractor's Project document control management system. It is the responsibility of the Principal Contractor to ensure all personnel and subcontractors have access to the Project's CEMP. An electronic version of the CEMP will be made available on the project website, in accordance with CoA B14.

Subject to confidentiality, all documents subject to CoA B14, including this CEMP will be made publicly available. In accordance with CoA B14, copies of the following documents will be published prior to works commencing and maintained on the Project website:

- a) Information on the current implementation status of the CSSI
- b) The telephone number, postal address and email address required under Condition B6
- c) A copy of the documents listed in Conditions A1 and A2 of the approval and any documentation relating to any modifications made to the CSSI or the terms of this approval
- d) A copy of the approval in its original form, a current consolidated copy of the approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval
- e) A copy of an EPL required and obtained in relation to the CSSI
- f) A current copy of each document required under the terms of the approval, which must be published before the commencement of any relevant activity to which they relate or before their implementation, as the case may be
- g) A copy of the compliance reports required under Conditions A29 and A32 of the approval.

Where a CoA requires a document to be prepared prior to commencement of any work or Construction, a current copy of the relevant document will also be published on the Project website before the activity is undertaken.

Confidential information, which may include the location of threatened species, Aboriginal objects or places and personnel contact details, will be removed from all documents provided or made available to the public. The Project's Environment Policy will be displayed on the Project website, at the site office/s, and communicated to staff and other interested parties via inductions and ongoing awareness programs.

This document is uncontrolled when printed. One controlled hard copy of the CEMP and supporting documentation will be maintained by the Principal Contractor's Quality Manager at the Project office. Copies of this CEMP will be distributed via the Project document management system to:

- The Principal Contractor's Project Director;
- The Principal Contractor's Construction Director;
- The Principal Contractor's Environmental Manager;
- The Principal Contractor's Public Liaison Manager;
- Sydney Metro; and
- The ER.

3.2. Planning

3.2.1. Compliance tracking

In accordance with CoA A29, a Compliance Monitoring and Reporting Program must be prepared in order to monitor compliance with the terms of the project approval. Compliance reporting on the project will be undertaken in accordance with the requirements of the *City and Southwest – Sydenham to Bankstown Compliance Monitoring and Reporting Program Report* (Sydney Metro, 2019).

It is the responsibility of Sydney Metro to undertake the Compliance Tracking Program in accordance with the *City and Southwest – Sydenham to Bankstown Compliance Monitoring and Reporting Program Report* with input from the Principal Contractor as required. A compliance matrix has been established for the project, incorporating CoA, REMM, licence conditions, permits and other approvals relevant to the Project to track issues and ensure compliance issues are addressed and closed out. Refer to Section 3.9.4 for further detail regarding the implementation of compliance tracking and reporting during Construction, in accordance with the *City and Southwest – Sydenham to Bankstown Compliance Monitoring and Reporting Program Report*.

3.2.2. Environmental objectives and targets

Refer to Section 1.4.

3.2.3. Environmental Work Method Statement and Environmental Control Maps

Environmental Works Method Statements (EWMS) will be prepared for relevant Construction activities. Relevant Construction activities include those that pose a high risk to the environment, as determined by the Principal Contractor. They will incorporate relevant

mitigation measures and controls, including those from relevant management Sub-plans and key procedures to be used concurrently with the EWMS. EWMS will be specifically prepared to communicate requirements, actions, processes and controls to Construction personnel using plans, diagrams and simple written instructions.

EWMS will be prepared progressively prior to and throughout Construction, in consultation with the relevant site management personnel. This will ensure that all issues are addressed, methods and activities are practical and all personnel are aware of their commitments and responsibilities.

The EWMS will include at least the following elements:

- Description of the work activity, including any plant and equipment to be used;
- Outline of the sequence of tasks for the activity, including interfaces with other Construction activities;
- Identification of any environmental and/or socially sensitive areas, sites or places;
- Identification of potential environmental risks/impacts due to the work activity;
- Mitigation measures to reduce the identified environmental risk, including assigned responsibilities to site management personnel; and
- Process for assessing the performance of the implemented mitigation measures.

All Construction personnel and subcontractors undertaking a task governed by an EWMS must participate in training on the EWMS, and acknowledge that they have read and understood their obligations by signing an attendance record prior to commencing work.

Regular monitoring, inspections and auditing of compliance with the EWMS will be undertaken by project management and environmental personnel to ensure its effectiveness and that all controls are being followed and that any non-conformances are recorded and corrective actions implemented (refer to Section 3.10). Any improvements or changes identified in such reviews will be incorporated into subsequent revisions of the EWMS.

Environmental control maps (ECMs) are to be used in project inductions, work site set-up, as information in tender documents to subcontractors (where applicable) and in support of ancillary environmental approvals. ECMs will be prepared prior to Construction commencing.

The ECMs would be 'live' documents and updated to reflect the relevant works stage as works progress. The ECMs will be endorsed by the Principal Contractor's Environment Manager (or delegate). The ECMs will be endorsed before being utilised.

The project ECMs shall include but not be limited to:

- Environmental procedures, environmental approvals, or licences that are applicable;
- The worksite layout and boundary, significant structures, entry/exit points and internal roads;
- Consideration of minimising light spillage to surrounding properties, in accordance with CoA E54;
- Location of environmentally sensitive areas and sensitive receivers; and
- Environmental control measures.

The ECMs would be in addition to any erosion and sediment control plans.

3.3. Resources, responsibilities and authority

Sydney Metro (the Proponent) will engage a Principal Contractor to undertake the Dulwich Hill, Campsie and Punchbowl Station Upgrades Project. In accordance with the contract for the Project, the Principal Contractor must perform certain roles and meet certain requirements under the Planning Approval. This includes consultation with key regulatory stakeholders, such as the NSW EPA, Natural Resources Access Regulator (NRAR) (formerly Department of Industry), Environment, Energy and Science Group (EESG) (formerly OEH), Heritage NSW (formerly OEH) and relevant Councils, where required. DPIE is the approval authority for a number of items required under the Planning Approval, including the CEMP and CEMP Sub-plans.

Sydney Metro have engaged, and received DPIE approval, for an Independent ER for the Project. The Independent ER will perform the duties described within Table 7 Roles and responsibilities as per the requirements of CoA A26. Sydney Metro have also engaged an Independent Certifier to assess and certify project compliance. The role includes certification against environmental compliance.

Key responsibilities are indicated in Table 7. Note that this is not an exhaustive list of all site personnel and responsibilities. References to other roles and activities may be referred to throughout the CEMP and Sub-plans. Reporting lines are shown in the Organisation Chart in Figure 6.

Table 7 Roles and responsibilities

Position	Key Responsibilities and Authorities
<p>Project Director (Project Leader)</p>	<ul style="list-style-type: none"> • Reports to senior management within the Principal Contractor’s organisation • Ensure that internal audits of the system are conducted • Review audit corrective actions and take action as necessary to ensure timely close out of issues • Authorise expenditure on environmental issues within limits of authority • Resolve major issues which cannot be resolved by the Project Manager • Must complete corporate and project induction covering environmental responsibilities and the Principal Contractor’s environmental management system. • Ensure that project responsibilities and authorities are defined and communicated • Provide adequate resources to meet environmental objectives • Approve and implement the CEMP • Ensure that the CEMP is effectively implemented and maintained • Appoint/nominate and provide support for the Environmental Manager • Report to senior management on the performance of the system and environmental breaches • Take action to resolve environmental non-conformances, non-compliances and incidents • Ensure suppliers and subcontractors comply with requirements • Report environmental incidents to the client / local authorities as required • Liaise directly with the Independent Environment Representative as required and where appropriate to facilitate any environmental management requirements, including those identified within the Planning Approvals.
<p>Project Manager (Construction Manager)</p>	<ul style="list-style-type: none"> • Reports to the Project Director • Support the Project Director in environmental matters as required • Oversight of environmental requirements for design and Construction

	<ul style="list-style-type: none"> • Must complete corporate and project induction covering environmental responsibilities and Principal Contractor’s environmental management system. • Supervise all site Construction activities and personnel by ensuring that they meet environmental and other requirements • Organise and manage site plant, labour and temporary materials • Ensure that site environmental controls are properly maintained and provide support for the Environmental Manager • Report all environmental incidents • Take action to resolve non-conformances, non-compliances and incidents • Must complete corporate and project induction covering environmental responsibilities and Principal Contractor’s environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.
<p>Procurement Personnel</p>	<ul style="list-style-type: none"> • Reports to the Project Director • Carefully select suppliers and subcontractors based upon their ability to meet stated requirements • Ensure that purchase orders and agreements include environmental requirements as necessary • Where practical, select materials which are “environmentally friendly” • Must complete corporate and project induction covering environmental responsibilities and Principal Contractor’s environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.
<p>Project Environmental Manager</p>	<ul style="list-style-type: none"> • Reports to the Project Director • Ensure that the CEMP is effectively established, implemented and maintained at the project level • Ensure relevant licences, approvals and permits are obtained • Ensure compliance with all relevant statutes, regulations, rules, procedures, standards and policies • Carry out six monthly reviews of the CEMP and Sub-plans • Liaise with the ER and/or Superintendent on environmental issues, including the written notification of non-conformances (incidents, emergencies or deviations from the CEMP) and non-compliances • Ensure that all personnel on site receive appropriate environmental induction and training and are aware of their environmental responsibilities under the CEMP, relevant legislation and the contract • Report to the Project Director on the performance of the system and improvement opportunities • Provide support to the project team to enable them to meet their environmental commitments • Ensure that environmental records and files are collected and maintained • Regular compliance checking as required by this CEMP • Ensure that non-conformances, non-compliances and environmental incidents are recorded and written reports provided to the Client’s Representative within 48-hours. Liaise with the required stakeholders to confirm the nature of the corrective action required and comply with the timeframe within which corrective actions must occur. • Ensure that environmental controls, materials and equipment are maintained • Conduct six monthly review of the CEMP • Develop and deliver environmental training materials in consultation with the Project Training Coordinator • Liaise directly with the Independent Environment Representative as required and where appropriate to facilitate any environmental management requirements,

	<p>including those identified within the Planning Approvals. The Project Environmental Manager will be the primary contractor contact for the Independent Environmental Representative</p> <ul style="list-style-type: none"> • Must have tertiary qualifications in environmental engineering / science along with relevant experience working in environmental management roles in Australia. Infrastructure Sustainability Accredited Professional preferred • Must complete corporate and project induction covering environmental responsibilities and Principal Contractor’s environmental management system • Minimum skill levels: • Minimum 10 years’ experience post qualification, with extensive experience in the preparation and implementation of environmental management systems and plans • Tertiary qualification in environmental science or engineering discipline or equivalent • Recent relevant experience in environmental management on major infrastructure projects.
<p>Project Environmental Coordinator</p>	<ul style="list-style-type: none"> • Support the Environmental Manager in matters relating to environmental management • Must have tertiary qualifications in environmental engineering / science along with relevant experience working in environmental management roles in Australia. Infrastructure Sustainability Accredited Professional preferred • Must complete corporate and project induction covering environmental responsibilities and Principal Contractor’s environmental management system • Liaise directly with the Independent Environment Representative as required and where appropriate to facilitate any environmental management requirements, including those identified within the Planning Approvals.
<p>Communication and Stakeholder Relations Manager</p>	<ul style="list-style-type: none"> • Leadership and management of the Communications, Stakeholder and Community Relations Team • Build and maintain effective working relationship with Sydney Metro’s representative and Stakeholder and Community Liaison team • Develops and oversees the implementation of the CCS and subplans • Responsible for a stakeholder and community relations induction and training program for all personnel involved in the performance of the project • Approves the Communications, Stakeholder and Community Relations team roles, role descriptions and responsibilities • Liaising with the Community Complaints Mediator, where required • Ensures the Community Communications Strategy and key activities are integrated into the project schedule • Attends the Sydney Metro led Communications Management Control Group and reports on activities, strategies and issues • Attends the monthly Project Management Review Group meeting to discuss project status and issues • Issues and crisis management • Manages media issues and acts as media spokesperson for the Principal Contractor (subject to media protocols) • Responsible for the Communications and Stakeholder Management KPI as well as the Communications and Stakeholder management component of the Quality of Information and Relationship with the Principal’s representative KPI • Required to be on call 24 hours based on the team rotation • Liaise directly with the Independent Environment Representative as required and where appropriate to facilitate any environmental management requirements, including those identified within the Planning Approvals.
<p>Community Place Manager</p>	<ul style="list-style-type: none"> • Build and maintain effective working relationship with community, businesses, and stakeholders

	<ul style="list-style-type: none"> • Support the successful delivery of the project’s Community Communication’s Strategy and requirements • Implementation of the Community Communications Strategy and any relevant Sub-plans • Liaising with the Community Complaints Mediator, where required • Establish effective working relationships with local stakeholder to support the effective delivery of the project • Required to be on call 24 hours based on the team rotation to respond to enquiries and complaints. • Review, approve and oversee the development and distribution of all notification, newsletter, social media, photography, and other communication material. • Maintain the Consultation Manager database and generate reports as required. • Drives Communications and Stakeholder Management KPIs as well as the Communications and Stakeholder management component of the Quality of Information and Relationship with the Principal’s representative KPI.
Project Training Coordinator	<ul style="list-style-type: none"> • Develop a Training Needs Analysis to identify relevant environmental training for all contractor (and subcontractor, where appropriate) personnel • Develop environmental training materials in consultation with the Project Environmental Manager • Organise external environmental training courses/material, where required • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.
Site Foreman (Site Superintendents)	<ul style="list-style-type: none"> • Construction delivery in relation to environmental management and compliance in conjunction with the Project Environmental Manager • Authority to direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts
Subcontractors	<ul style="list-style-type: none"> • Comply with all legal, contractual requirements and this CEMP • Comply with site environmental requirements • Comply with management / supervisory directions • Participate in induction and training as directed • Report all incidents • Environmental qualifications as required by contract • Must complete project induction covering environmental responsibilities and the Principal Contractor’s environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.
All Personnel	<ul style="list-style-type: none"> • Comply with the relevant Acts, Regulations and Standards • Comply with the Company’s environmental policy and procedures • Promptly report to management on any non-conformances, non-compliances environmental incidents and/or breaches of the system • Undergo induction and training in environmental awareness as directed by management • Report all incidents • Act in an environmentally responsible manner • Must complete corporate and project induction covering environmental responsibilities and Principal Contractor’s environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.
Independent Environment Representative	<ul style="list-style-type: none"> • Receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI;

	<ul style="list-style-type: none"> • Consider and inform the Planning Secretary on matters specified in the terms of this approval; • 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; • Review documents identified in Conditions C1, C3 and C8 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: <ul style="list-style-type: none"> ○ make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary), or ○ make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary for information or are not required to be submitted to the Planning Secretary); • Regularly monitor the implementation of the documents listed in Conditions C1, C3 and C8 to ensure implementation is being carried out in accordance with the document and the terms of this approval; • As may be requested by the Planning Secretary, help plan, attend or undertake 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 A34 of this approval; • As may be requested by the Planning Secretary, assist the Department in the resolution of community complaints; • Assess the impacts of minor ancillary facilities as required by Condition A19 of this approval; • Consider any minor amendments to be made to the documents listed in Conditions C1, C3 and C8 and any document that requires the approval of the Planning Secretary that comprise updating or are of an administrative or minor nature and are consistent with the terms of this approval and the documents listed in Conditions C1, C3 and C8 or other documents approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; and • Prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report detailing the ER's actions and decisions on matters for which the ER was responsible in the preceding month. The Environmental Representative Monthly Report must be submitted within seven (7) days following the end of each month for the duration of the ER's engagement for the CSSI. • Must complete project induction covering Principal Contractor's environmental management system.
<p>Independent Certifier</p>	<ul style="list-style-type: none"> • Assess and certify the Project for compliance, including environmental requirements.
<p>Utilities Coordination Manager</p>	<ul style="list-style-type: none"> • The management and coordination of all utility work associated with the delivery of the Project, to ensure respite is provided to the community, in accordance with CoA E22; • Establishing a Utilities Project Team with nominated representatives from utility service providers that may be impacted by the CSSI; • Coordination of meetings with utility service providers as requested by Sydney Metro's Contractors; • Involvement with reviews of CSSI designs and Construction methodologies to assist with identifying potentially impacted utility assets; • Assist with coordination of design and Construction methodology reviews by utility service providers to identify necessary utility works; • Communicate with the Utilities Project Team, Sydney Metro, and Sydney Metro's Contractors' delivery teams to understand the proposed program of works to

	<p>coordinate intercepting, interconnecting and interrelated works and manage priorities as they may arise;</p> <ul style="list-style-type: none"> • Observation of utility works; and • Manage escalation of utility work-related issues within Sydney Metro and the utility service providers as required. • In conjunction with the Contractors, co-ordinate utility providers and relevant council(s) to identify opportunities for maintenance, replacement or augmentation of utilities that cross the rail corridor and facilitate and co-ordinate requests by the utility providers and relevant council(s) to undertake the Work during rail shutdowns • Collaborate with the communications team and as required, the Community Complaints Mediator, to ensure utility works are appropriately notified and any complaints are resolved.
<p>It is noted that;</p> <ul style="list-style-type: none"> • “Subcontractors” and “All personnel” are categorised as “Operational Personnel”. All other roles as listed above are categorised as “Management”. Refer to Section 3.5 for training requirements for each category. • Work must not commence until an ER has been approved by the Planning Secretary and engaged by the Proponent. • The Planning Secretary’s approval of an ER must be sought no later than one (1) month before the commencement of Work. • The proposed ER must be a suitably qualified and experienced person who was not involved in the preparation of the EIS, SPIR or Submissions Report and is independent from the design and Construction personnel for the CSSI and those involved in the delivery of it. <p>It is the responsibility of Sydney Metro to engage an appropriate ER and seek approval from DPIE.</p>	

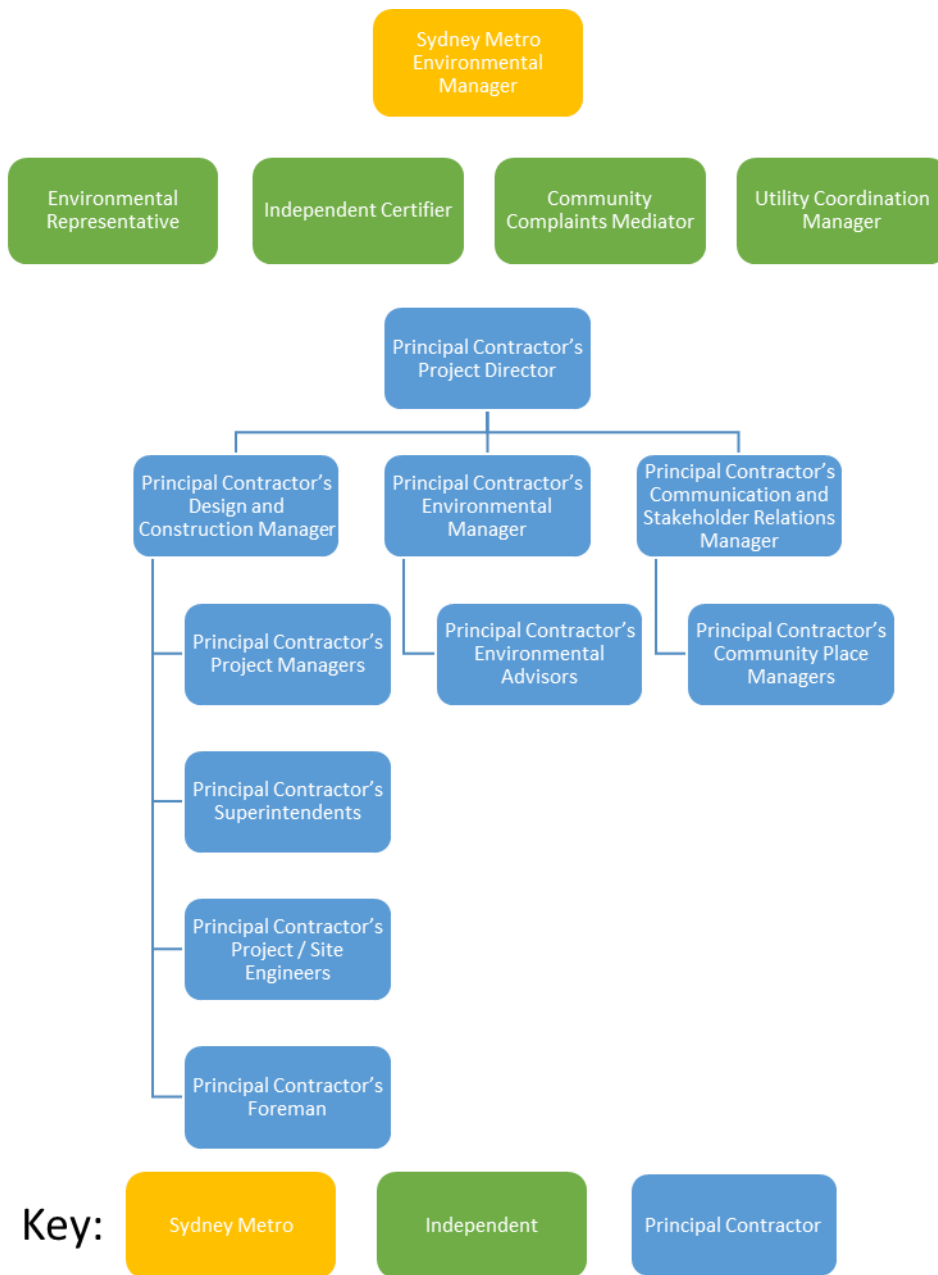


Figure 6 Organisation chart

3.4. Selection and management of subcontractors

Environmental requirements and responsibilities are to be specified to subcontractors in the contract documentation. All subcontractors engaged by the Principal Contractor will be required to work under the Principal Contractor’s E&SMS.

The supply of goods and/or services by suppliers and subcontractors will be managed in accordance with the following:

- During the tender phase, supply chain partners will be evaluated by the Principal Contractor for their ability to meet the project’s environmental obligations. Environmental issues will be taken into account when selecting subcontractors and suppliers and as provided in the project’s Procurement Management Plan;

- Supply, subcontract and consultancy agreements must address the relevant environmental compliance obligations;
- Agreements will outline the contractual requirements to be delivered by the supply chain through their scope of works;
- Suppliers of chemicals and hazardous substances will be required to submit SDS's with delivery or prior to chemicals arriving at site;
- Supply chain partners are to be required to nominate relevant environmental risks and proposed mitigation measures associated with their scope of work within their project specific documentation. As a minimum subcontractors Safe Work Method Statements must address the environmental risks associated with their site activities; and
- The environmental performance of subcontractors will be monitored by the Principal Contractor during site inspections and in accordance with the obligations in their agreements and contracts.

3.5. Competence, training and awareness

3.5.1. Environmental induction

All personnel (including subcontractors) are required to attend a compulsory site induction that includes an environmental component before commencing work on site. This is to ensure all personnel involved in the Project are aware of the requirements of the CEMP, EPL (if required) and to ensure the implementation of the REMMs. This will aid in the prevention of any breaches of the CoA resulting from the actions of all persons invited onto any site, including contractors, subcontractors and visitors.

Short-term visitors undertaking inspections or entering site (such as regulators) will be required to undertake a visitor's induction and be accompanied by inducted personnel at all times. Temporary visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times.

In accordance with the CEMF, the environmental component of the induction would include as a minimum:

- Training purpose, objectives and key issues;
- Contractor's environmental policy and key performance indicators;
- Due diligence, duty of care and responsibilities;
- Relevant conditions of any environmental licence and/or the relevant conditions of approval;
- Site specific issues and controls including those described in the environmental procedures;
- Reporting procedure for environmental hazards and incidents; and
- Communication protocols.

A record of all environment inductions will be maintained and kept on site. The Principal Contractor's Environmental Manager may authorise amendments to the induction at any time. Possible reasons for changes to the induction may be Project modifications, legislative changes or amendments to this CEMP or related documentation.

Legible environmental records of all environmental inductions will be kept in an Induction Register.

3.5.2. Toolbox talks, training and awareness

Toolbox talks will be used as a method of raising awareness and educating personnel on issues related to all aspects of Construction including project or site wide updates, any key or recurring environmental issues. The toolbox talks will be used to ensure environmental awareness continues throughout Construction and include details of EWMS for relevant personnel. Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works. Toolbox talk attendance is mandatory and attendees of toolbox talks are required to sign an attendance form and the records maintained.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. All employees (including subcontractors) may receive induction/training in the following (but not limited to):

- Environmental Policy;
- Site environmental objectives and targets;
- Understanding individual authorities and responsibilities;
- Basic understanding of their legal obligations;
- Site environmental rules;
- Emergency procedure and response (e.g. Spill clean-up);
- Relevant project specific and standard noise and vibration mitigation measures;
- Permissible hours of work;
- Any limitations on high noise generating activities;
- Location of nearest sensitive receivers; and
- Relevant licence and approval conditions.

To promote environmental awareness amongst the Construction team, environmental alerts will be issued as required and distributed amongst the Principal Contractor's Project / Site Engineers and Supervisors which will be discussed during the daily pre-start meeting or during toolbox talks. In addition, the ECMs will be displayed in crib sheds and site offices to promote awareness of the environmental constraints. Erosion and Sediment Control Plans (ESCPs) will be distributed to the Principal Contractor's Site Foreman to provide detail on erosion and sediment controls on the Project.

Environmental awareness may also be promoted to Construction personnel through the development and distribution of awareness notes. These will typically take the form of a poster, booklet, or similar and will be distributed to the Principal Contractor's Engineers, Leading Hands, Site Foreman and others with a responsibility for managing specific work locations or activities. This documentation may be used to inform the broader workforce through either daily pre-start meetings (see Section 3.5.3) or provision in worker crib sheds / break facilities.

In accordance with the CEMF, Sydney Metro's Principal Contractor will conduct a Training Needs Analysis which identifies the competency requirements of staff that hold environmental roles and responsibilities as outlined in Table 7. This CEMP will be revised to include a summary of the Principal Contractor's Training Needs Analysis.

A Training Register is to be maintained on the Principal Contractor's information management system.

3.5.3. Daily pre-start meetings

The daily pre-start meeting is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

The Principal Contractor's Site Foreman will conduct a daily pre-start meeting with the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. Daily pre-start meetings will be succinct in nature and generally take approximately 10-15 minutes.

The environmental component of pre-starts will be determined by the Principal Contractor's relevant Site Foreman and environmental personnel, and will include any environmental issues that could potentially be impacted by, or impact on, the day's activities as required. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

3.6. Working hours

Working hours for the Project are set by the CoA E19 to E26. Standard Construction hours as approved in the CoA E19 are as follows:

- Monday to Friday: 7:00 am to 6:00 pm;
- Saturday: 8:00 am to 6:00 pm; and
- At no times on Sundays or Public Holidays.

CoA E20 permits work outside of the hours specified in CoA E19, in the following circumstances:

- a) For the delivery of materials required by the NSW Police Force or other authority for safety reasons;
- b) 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;
- c) Where different Construction hours are permitted or required under an EPL in force in respect of the CSSI;
- d) Work approved under an Out-of-Hours Work Protocol for Work not subject to an EPL as required by Condition E25;
- e) Construction that causes LAeq(15 minute) noise levels:
 - i. no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and
 - ii. no more than the 'Noise affected' noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and

- iii. continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), and
 - iv. intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006).
- f) Where a negotiated agreement has been reached with a substantial majority of sensitive receivers who are within the vicinity of and may be potential affected by the particular Construction, and the noise management levels and/or limit for ground-borne noise and vibration (human comfort) cannot be achieved. All agreements must be in writing and a copy forwarded to the Planning Secretary at least one (1) week before the commencement of activities.

In accordance with CoA E24, except as permitted by an EPL, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver will only be undertaken:

- Between the hours of 8:00 am and 6:00 pm Monday to Friday;
- Between the hours of 8:00 am and 1:00 pm Saturday; and
- In continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block. 'Continuous' includes any period during which there is less than one hour respite between recommencing any of the work that are the subject of the CoA.

There is no definition in the CoA SSI 8256 for “Highly Noise Intensive Works” as mentioned in CoA E24. Sydney Metro has adopted the following definition for “Highly Noise Intensive Works”, based upon definitions within CoA issued by DPIE for other SSI projects. For the purpose of this Project, Highly Noise Intensive Works are Construction activities which are defined as annoying under the ICNG, these include:

- Use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work;
- Grinding metal, concrete or masonry;
- Rock drilling
- Line drilling;
- Vibratory rolling;
- Rail tamping and regulating;
- Bitumen milling or profiling;
- Jackhammering, rock hammering or rock breaking; and
- Impact piling.

Any other works outside of standard Construction hours would be permitted providing they meet the requirements of CoA E20, an EPL (if applicable) or if they are undertaken as per the City and Southwest Out-of-Hours Work Protocol/Strategy (OOHW) as per CoA E25..

3.7. Communication

3.7.1. Internal communication

Clear lines of communication throughout all levels and functions (e.g. management, staff and subcontracted service providers), are key to minimising environmental impacts and achieving continual improvements in environmental performance.

The Principal Contractor's environmental team will meet regularly to discuss any issues with environmental management on site, any amendments to plans that might be required or any new / changes to Construction activities. Regular meetings may also be scheduled with the ER, Sydney Metro environmental personnel. The purpose of these meetings would be to communicate ongoing environmental performance and to identify any issues to be addressed.

In addition, Construction environmental team members will participate, as required, in toolbox talks, daily pre-start meetings or activity specific pre-start meetings to communicate environmental performance, management or issues with the wider Construction team. This forum will provide an opportunity for the environment team members to advise on any upcoming sensitive environmental matters for future work areas and to receive feedback from on-site personnel.

Further internal communications regarding environmental issues and aspects will be through awareness training as described in Section 3.5.

3.7.2. Liaison with government authorities or other relevant stakeholders

The Principal Contractor's Environmental Manager will be the authorised contact person for communications with the relevant stakeholders i.e. Sydney Metro, the ER, DPIE and the EPA (if required) on environmental matters. Liaison will include reporting on the ongoing environmental performance, any key environmental matters on the Project to these stakeholders. Relevant government agencies will be consulted throughout Construction as required.

Where changes are made to the CEMP or Sub-plans following consultation, updates will be recorded in the relevant version control section(s).

Incident notification will be undertaken in accordance with the requirements of CoA A36 and A37 (refer to Section 3.10.3).

Liaison with government authorities and relevant stakeholder would be undertaken as per Section 8 of the Sydney Metro Overarching Community Communication Strategy (OCCS).

3.7.3. Community liaison and/or notification

Sydney Metro has prepared an OCCS in accordance with CoA B2 to provide an approach to stakeholder and community communications. This plan identified opportunities and key communication tools needed to provide information and consult with the community and stakeholders during Construction of the Project. Section 8 of the OCCS outlines how community liaison and/or notification would be undertaken.

The OCCS also includes the process for notifying external stakeholders of new, changed or upcoming Construction works, including works outside of normal working hours. The OCCS has been submitted to DPIE for approval prior to the commencement of works in accordance with CoA B3.

In accordance with Section 1 of the OCCS, the contract-specific communication team is responsible for developing a contract-specific Community Communication Strategy (CCS) for the Project.

3.7.4. Complaints management

Sydney Metro's OCCS details the Complaints Management System, which includes a Complaints Register, which has been developed for the Project, in accordance with the requirements of AS 4269: Complaints Handling and CoA B5, B6, B7, B8 and B9.

As required by CoA B8(a)(b)(c) the Complaints Register must record the:

- a) Number of complaints received
- b) Number of people affected in relation to a complaint
- c) Means by which the complaint was addressed and whether resolution was reached, with or without mediation.

The Complaints Register will be provided to the ER on a daily basis, in accordance with CoA A27(a). Please refer to the OCCS for more information about complaints management. Sydney Metro's OCCS also outlines how the Project will interface with the Community Complaints Mediator, as required, in accordance with CoA B10 to B13.

3.8. Emergency and incident response

3.8.1. General emergency and incident response

The EPA must be notified immediately of all pollution incidents that cause or threaten material harm to the environment. The Principal Contractor will enact the Emergency Response Plan if an incident causes, or has the potential to cause material harm.

As per the Planning Approval's definition, material harm "*is harm that:*

- *involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or*
- *results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such 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)."*

If an incident presents an immediate threat to human health or property, 000 is to be called in accordance with the procedures outlined in the Construction Health and Safety Management Plan.

The EPA Environment Line is to be contacted on 131555.

The notification will need to include information on:

- The time, date, nature, duration and location of the incident;
- The location of the place where pollution is occurring or is likely to occur;
- The nature, the estimated quantity or volume and the concentration of any pollutants involved;
- The circumstances in which the incident occurred (including the cause of the incident, if known);

- The 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.

In addition to notifying the EPA of pollution incidents other authorities as outlined below must also be notified immediately, where relevant:

- Sydney Metro;
- The ER;
- DPIE;
- The NSW Ministry of Health (via the local Public Health Unit – 02 9391 9000);
- The SafeWork NSW (13 10 50);
- Inner West Council (where the incident has occurred within this LGA) – (02 9707 9000);
- City of Canterbury Bankstown (where the incident has occurred within this LGA) – (02 9392 5000); and
- Fire and Rescue NSW on 000.

Regardless of the actual or potential impact, these authorities must be notified under the amended legislation for all notifiable pollution incidents. Further information in relation to the incident must be provided immediately if it becomes available after the initial notification. Records of contact with and details of the information provided to external authorities must be maintained in the project records.

Incident notification will be undertaken in accordance with the requirements of CoA A36 and A37 and the Sydney Metro Incident and Non-compliance Reporting Procedure (refer to Section 3.10.3 and Appendix F).

3.9. Monitoring, inspections and auditing

3.9.1. Environmental inspections

Ongoing inspection of environmental mitigation measures will be undertaken by the Principal Contractor's Site Foreman. Weekly site environmental inspections will be undertaken by the Principal Contractor's Environmental Manager to assess the ongoing effectiveness and suitability of the Project's environmental controls. The site environmental inspections will cover the following:

- High risk activities and processes;
- Work in environmentally sensitive areas; and
- Site preparedness for adverse weather conditions, including adequacy of environmental controls and availability of emergency equipment.

Copies of all environmental inspection reports prepared by Project environmental staff will be kept with the Project records and closed out within the agreed timeframes. These timeframes will be dependent on the nature of the required corrective action and the environmental risk associated with the outstanding action as determined by the Principal Contractor Environmental Coordinator or Environmental Manager. The outcomes of inspections will be captured on Environmental Inspection Checklists.

In general, the corrective action will concentrate on the environmental management system and its associated processes rather than on the perceived deficiencies of individual workers.

If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded in an environmental action list. Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority. The environmental action list will then be issued to the relevant Principal Contractor Site Foreman for actioning. Actions will be assigned an implementation priority by the Principal Contractor Environmental Coordinator based on environmental risk. Actions are closed out by the Principal Contractor Site Foreman and evidence of close out (usually a photograph) is to be supplied back to the Environmental Coordinator.

When an observation is raised of a significant nature, and where deemed necessary by the Principal Contractor Environmental Manager, an Environmental Improvement Notice (EIN) may be issued to either the Engineering Supervisor or the subcontractor supervisor in charge of the work activity and/or an individual. The engineer or individual receiving the improvement notice will be required to respond to the agreed corrective action as outlined on the notice. The timeframe to respond would be determined by the Principal Contractor Environmental Manager and documented in the EIN. Examples of observations deemed to be of a significant nature would include, but are not limited to, those that require immediate action due to potential environmental risk or recurring issues.

The completed EIN must be reviewed and followed-up to ensure they are promptly completed. Repetitive observations that have significant hazards should be reviewed to check that a system failure is not occurring. The Principal Contractor Environmental Coordinator will confirm close out of the EIN and report this to the Principal Contractor Environmental Manager.

Regular site inspections will be completed by the Environmental Representative (ER) and Sydney Metro representatives. These will be conducted at a frequency to be agreed by all parties. However, at minimum they will have a monthly frequency.

3.9.2. Environmental monitoring

Environmental monitoring will be undertaken to validate the impacts predicted for the Project, to measure the effectiveness of environmental controls and implementation of this CEMP, and to address approval requirements. The monitoring requirements for required aspects are included in the relevant environmental management Sub-plans and summarised in Table 8.

Table 8 Summary of Construction phase environmental monitoring required by the Project approval

CoA / EMM	Description	Relevant Sub-plan or CEMP Chapter	Reporting Requirements
C8(a)	Noise and Vibration Monitoring Program	NVMP – Section 8	Submitted to the Planning Secretary and relevant regulatory authorities for information at a frequency as specified in the monitoring program.
C8(b)	Water Quality Monitoring Program	SWMP – Section 6	Submitted to the Planning Secretary and relevant regulatory authorities for information at a frequency as specified in the monitoring program.

3.9.3. Auditing

Sydney Metro’s *City and Southwest Compliance Monitoring/Tracking and Reporting Program Report* (Sydney Metro 2019) has been prepared to satisfy the obligations of CoA A33-A35. In

accordance with the *City and Southwest Compliance Monitoring/Tracking and Reporting Program Report*, two levels of environmental auditing will be undertaken on the Project:

- Internal auditing coordinated by the Principal Contractor; and
- Via the independent Environmental Audit Program (EAP).

In addition to these, the Project may be audited by the Secretary upon the Secretary's request. In this event, the ER will facilitate the audit on behalf of the Secretary in accordance with CoA A26(f).

Audits will include works undertaken by subcontractors. Internal and external environmental audits will be undertaken and prepared in accordance with the terms of the project approval and AS/NZS ISO 19011:2014.

The ER will ensure that environmental auditing is undertaken in accordance with this CEMP and the Project's environmental management system, in accordance with CoA A26.

Internal audits undertaken in accordance Section 4.4.3.1 of the *City and Southwest Compliance Monitoring/Tracking and Reporting Program Report* will be carried out on a six-monthly basis. Independent Environmental Auditing will be conducted at a frequency set out in the EAP.

3.9.4. Construction phase compliance tracking

In accordance with CoA A29 to A32, Sydney Metro has developed the *City and Southwest Compliance Monitoring/Tracking and Reporting Program Report*. Compliance reporting on the Project will be undertaken in accordance with the requirements of this document throughout the Construction phase of the Project.

In accordance with the *City and Southwest Compliance Monitoring/Tracking and Reporting Program Report*, Sydney Metro's Principal Contractor will undertake quarterly reviews of the compliance requirements contractually allocated to them by Sydney Metro. These reviews are a collaborative exercise undertaken between the Principal Contractor, Sydney Metro and the ER. The Compliance Tracking Review process is as follows:

- Upon the award of each major contract, Sydney Metro will issue a Compliance Tracking Register (CTR) template containing a list of all the compliance requirements contractually allocated to the Principal Contractor. The Principal Contractor is required to complete the template and return to Sydney Metro no later than two weeks prior to the anticipated commencement of Construction activities.

The Principal Contractor is to complete the template by demonstrating how compliance against each requirement has been addressed from the date of contract award to the date the CTR is due to be returned to Sydney Metro (including references to evidential documentation). This completed CTR will be used by Sydney Metro to prepare any documentation required to prepare/update the applicable Pre-Construction Compliance Report

- Following the commencement of Construction, the Principal Contractor is to complete a new CTR to cover all activities from the commencement of Construction until the end of the existing or subsequent calendar quarter (as determined by Sydney Metro). The Principal Contractor must issue the completed CTR to the ER within five working days following the end of the reporting period. The ER will review the CTR and where necessary, provide comments and/or requests for evidence to the Principal Contractor. The ER will provide the Planning Approvals Compliance

Report only after all comments have been addressed, and all evidence requested during the CTR has been provided by the Principal Contractor.

- Within five working days of receiving the final completed CTR (and any evidence requested) from the Principal Contractor, the ER is to issue a draft Planning Approvals Compliance Report (with the associated completed CTR) to Sydney Metro for comment. After reviewing any comments, the ER is to issue a final Compliance Summary Report to Sydney Metro.
- Following receipt of the final Compliance Summary Report from the ER, Sydney Metro will issue the next quarterly period CTR template to the Principal Contractor for completion. This process repeats every quarter until all compliance requirements have been 'completed' (refer to Section 4.3 of the City and Southwest Compliance Monitoring/Tracking and Reporting Program Report).

In the event of a non-compliance against a requirement at any time during this process, a summary of the non-compliance needs to be entered into the relevant CTR template. This is in addition to the requirements of the Sydney Metro Environmental Incident and Non Compliance Reporting Procedure SM-17-00000096 (refer to Appendix F).

3.10. Environmental incidents non-conformances and non-compliances

All environmental incidents, non-conformances and non-compliances must be reported to the ER and Sydney Metro in accordance with Sydney Metro Environmental Incident and Non-compliance Reporting Procedure SM-17-00000096 (refer to Appendix F).

3.10.1. Environmental incidents

The Environmental Incident and Non-compliance Reporting Procedure is summarised below.

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.

The Instrument of Approval defines an incident as:

An occurrence or set of circumstances that causes or threatens to cause material harm¹ and which may or may not be or cause a non-compliance.

Environmental incidents are classified into 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). These classifications trigger a variety of management actions

¹ Material harm is harm that: (a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or (b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such 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).

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 is large-scale and cannot be remediated (see Table 9).

Table 9 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

All incidents and complaints (including potential incidents) must be reported so that they can be investigated and prevented from recurring. Incidents, non-conformances and non-compliances are to be recorded using the Environmental Incident and Non-compliance Report Form (SM ES-FT-403), by the Principal Contractor. It is expected that the person responsible for completing the Environmental Incident and Non-compliance Report Form makes appropriate enquiries to determine the likely causal factors involved and assigns effective corrective actions. Corrective actions are to be raised, addressed and closed-out in accordance with the Principal Contractors own internal relevant management system procedure.

When an environmental incident 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 7 must be followed. Incident Notification Reports satisfy the requirement for written communication to Sydney Metro and are to be completed using the Environmental Incident and Non-compliance Notification Report (SM ES-FT-403) or a similar and consistent form approved by Sydney Metro.

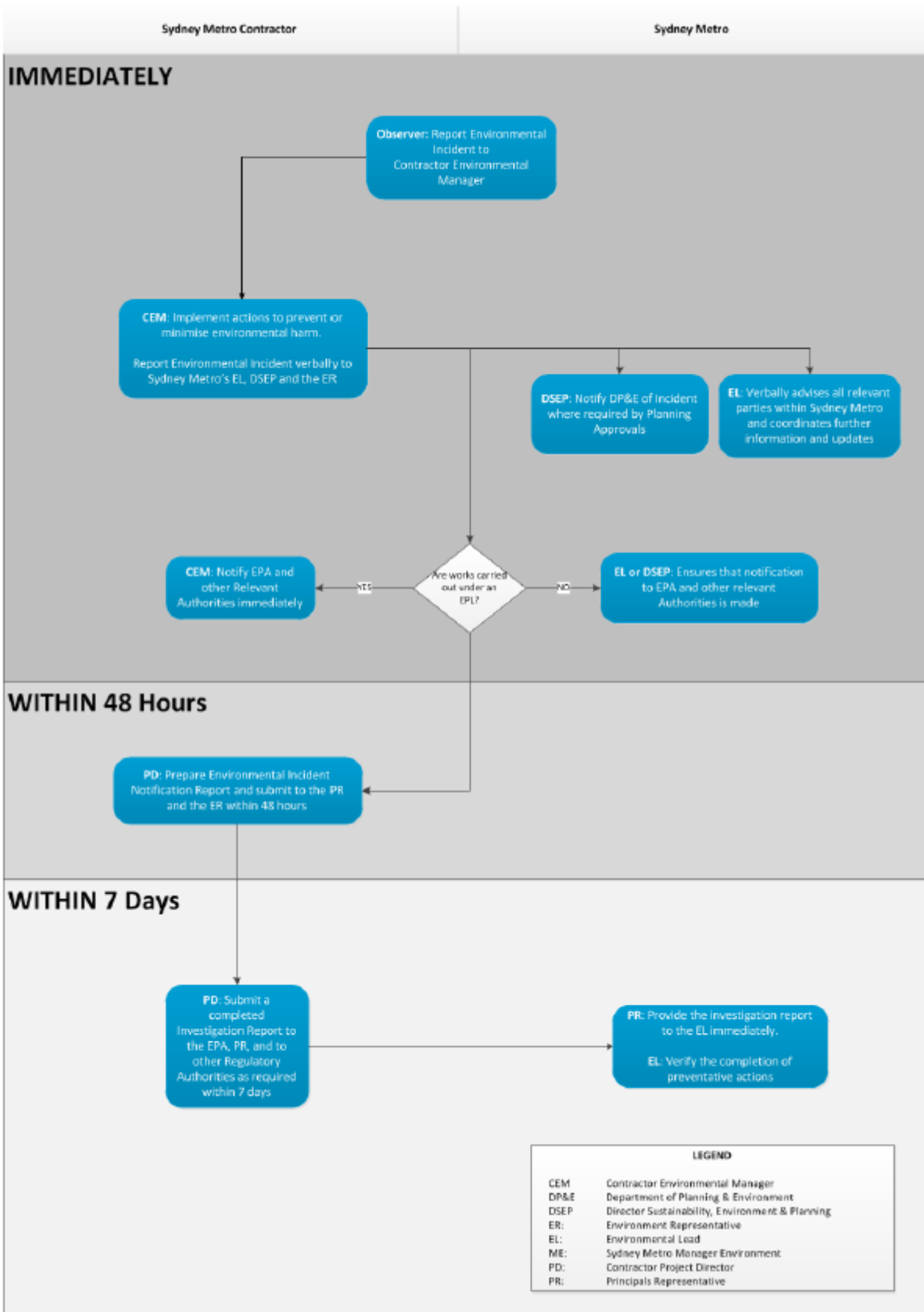


Figure 7 Environmental incident notification process for Class 1 and 2 Incidents

3.10.2. Review of compliance

An environmental non-compliance is a breach of an environmental requirement originating from Planning Approvals, EPLs, lease agreements, and other requirements documented in environmental management plans. Whether an event is classified as a Non-compliance, Non-conformance 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;
- Non-compliances are not divided into severity classes;
- 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 (as defined by the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure) 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.

3.10.3. Department of Planning, Industry and Environment incident notification

The Conditions of Approval define an incident as:

An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not cause a non-compliance with this approval.

Environmental incident and notification requirements are outlined in CoA’s A36 and A37 and Appendix A of the Instrument of Approval. These requirements are outlined in Table 10. Any incidents would be notified to the Planning Secretary in accordance with these requirements.

Table 10 Incident notification to DPIE

CoA/Requirement	Details
CoA A36	The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Proponent becomes aware of an incident. 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.
CoA A37	Subsequent notification must be given, and reports submitted in accordance with the requirements set out in Appendix A (of SSI-8256) .
Appendix A - 1	A written incident notification addressing the requirements set out below must be emailed to the Department at the following address: compliance@planning.nsw.gov.au within seven (7) days after the Proponent becomes aware of an incident. Notification is required to be given under this condition even if the Proponent fails to give the notification required under Condition A37 or, having given such notification, subsequently forms the view that an incident has not occurred.

CoA/Requirement	Details
<p>Appendix A - 2</p>	<p>Written notification of an incident must:</p> <ul style="list-style-type: none"> (a) identify the CSSI and application number; (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident); (c) identify how the incident was detected; (d) identify when the Proponent became aware of the incident; (e) identify any actual or potential non-compliance with conditions of approval; (f) describe what immediate steps were taken in relation to the incident; (g) identify further action that will be taken in relation to the incident; and (h) identify a project contact for further communication regarding the incident.
<p>Appendix A - 3</p>	<p>Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.</p>
<p>Appendix A - 4</p>	<p>The Incident Report must include:</p> <ul style="list-style-type: none"> (a) a summary of the incident; (b) outcomes of an incident investigation, including identification of the cause of the incident; (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and (d) details of any communication with other stakeholders regarding the incident.

3.11. Work in environmentally sensitive areas

Addressed in Section 3.2.3 of this CEMP.

3.12. Ancillary site facilities

Ancillary site facilities used as part of the Project are discussed in Section 1.1.

3.12.1. Ancillary facilities approval pathways

Ancillary facilities proposed to be used as part of the Project are discussed in Section 1.1. However, any ancillary facilities outlined in the Approval Documents may be used by the Project.

As per CoA A16 ancillary facilities not identified in the Approval Documents can be established and used if:

- a) they are located within the Construction boundary of the CSSI; and
- b) they are not located next to a sensitive receiver (including access roads) (unless landowners and occupiers have accepted in writing 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), and threatened species, populations or ecological communities beyond the impacts approved under the terms 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 terms of this approval, including in relation to environmental, social and economic impacts.

If proposed ancillary facilities are not identified in the Approval Documents and cannot satisfy the conditions of CoA A16 they can only be established and operated when a review of environmental impacts has been prepared as per CoA A17. When the proposed ancillary facility is located within the rail corridor the review of environmental impacts may be endorsed by the ER. When the proposed ancillary facility is located outside the rail corridor the review of environmental impacts would require approval of the Planning Secretary.

Minor ancillary facilities are defined in CoA A19 as:

Lunch sheds, office sheds, portable toilet facilities, and the like, that are not identified as an ancillary facility in the documents listed Condition A1

As per CoA A19, minor ancillary facilities can be established where they satisfy the following criteria:

- a) are located within the Construction boundary; and
- b) have been assessed by the ER to have –
 - i. minor amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (ICNG) (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and
 - ii. minor 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 terms of this approval.

In accordance with CoA A18, the use of an ancillary facility for the Construction of this Project must not commence until this CEMP and the Project’s Sub-plans (including monitoring programs therein), have been approved by the Planning Secretary.

3.12.2. Boundary screening approach

Boundary screening will be erected around ancillary facilities that are adjacent to sensitive receivers as required under CoA A20 and A21. This will be for the duration of Construction unless otherwise agreed with relevant councils, and affected residents, business operators or landowners. All boundary screening will minimise visual, noise and air quality impacts as required by CoA A21. Boundary screening at sites would be consistent with the requirements identified in the Construction Noise and Vibration Impact Statement’s (CNVIS) (refer to NVMP). All fencing and hoarding will be in accordance with the requirements of the OCCS.

3.13. Hold points

The activities outlined in Table 11 are not to proceed without objective review and approval by the nominated authority. These activities are considered hold points. The hold points should be incorporated into the working plans for the project (EWMS, work instructions, Construction methodologies, etc.).

Table 11 Hold points

Item	Process Held	Acceptance Criteria	Approval Authority
Construction Environmental Management Plan and Sub-plans	Site activities	Site specific Construction Environmental Management Plan and Sub-plans have been developed, reviewed and approved.	Department of Planning, Industry and Environment.

Item	Process Held	Acceptance Criteria	Approval Authority
Monitoring Program Amendments (CoA C13)	Amendments to Monitoring Program(s) (during Construction, as per CoA C13)	Amendments have been reviewed and approved for implementation.	ER Endorsement and Approval
CNVIS	Site activities (Prior to Construction commencement)	CNVIS to be prepared by Specialist Consultant.	ER Endorsement
Specific Environmental Control Maps (ECMs)/ progressive ESCPS	Dulwich Hill Station works Campsie Station works Punchbowl Station works	ECMs/PESCPs are developed with site specific environmental controls/mitigation measures with site supervisor/engineers for work activities and are to be implemented prior to works commencing (or a new work stage as appropriate).	Environmental Manager or Coordinator
Works that require a Project Approval Consistency Assessment	Specific site activities related to Consistency Assessment.	Consistency Assessment approval.	Sydney Metro (Approval)
Reuse or Discharge of water	Dewatering activities (During Construction)	Implementation of requirements within Section 5.2 of SWMP, prior to any discharge off the premises or reuse within the premises.	Environmental Manager or Coordinator
Sediment and erosion control measures	Construction activities involving ground disturbance.	Sediment and Erosion Control Plan has been developed, reviewed, approved and implemented.	Environment Manager (or delegate)
Vegetation removal	Commencement of site clearing or vegetation removal.	Pre-clearing surveys and inspections for endangered and threatened flora and fauna species have been undertaken by qualified ecologists.	Environment Manager (or delegate)
Vegetation removal	Commencement of site clearing or vegetation removal.	Clearing limits have been verified against the project approval environmental assessment, limits have been set-out and vegetation to be retained has been delineated and or protected. Tree Report has been completed and submitted to the DPIE.	Environment Manager (or delegate)
Vegetation removal	Commencement of site clearing or vegetation removal.	Trained ecologist to be present during the clearing of native vegetation or removal of potential fauna habitat.	Environment Manager (or delegate)
Construction Methodologies – direct delivery and subcontract works.	Construction process representing potential medium or high impact to the environment.	Construction methodology / EWMS / Job Safety and Environmental Analysis (JSEA) have been reviewed by the Site Environmental Management Representative and addresses the relevant requirements of the CEMP procedures.	Project Engineer
OOHW Applications – individual works scenarios	Works to be performed outside of approved Construction hours (Pre-Construction and during Construction)	OOHW Protocol and Application Form and Community Notification EPL 12208	ER Endorsement and Approval TfNSW Approval (if OOHW are occurring under EPL 12208)

Item	Process Held	Acceptance Criteria	Approval Authority
			EPA (Information to be provided on request)
Use of local roads by heavy vehicles	Use of local roads by heavy vehicles	Preparation of Road Dilapidation Report	Construction Manager (or delegate)
Dangerous Goods	Transport of dangerous goods	Verification that transport vehicles meet the requirements.	Construction Manager (or delegate)
Dangerous Goods	Storage of dangerous goods	Verification that bunded storage is provided and that segregation and separation distances are maintained for the storage area.	Construction Manager (or delegate)
Controlled/ Hazardous Waste	Transport of Controlled / Hazardous waste from the site	Verification that the waste has been classified in accordance with the EPA guidelines, transport licensing in place and landfill can lawfully receive the waste. Section 143 notice or equivalent from waste receiver has been received.	Construction Manager (or delegate)
Spoil Transport	Spoil import and removal	Verification that the spoil has been classified and the disposal location can lawfully receive the waste. Section 143 notice or equivalent from waste receiver has been received. Imported material has classification reports or appropriate testing to demonstrate that it meets any EPA exemptions or has been classified as VENM/ENM.	Construction Manager (or delegate) Environmental Manager (or delegate)
Encounter of Unexpected Heritage Item	Commencement of works in the affected area	The Unexpected Finds Process as outlined in the HMP and Sydney Metro Unexpected Finds Procedure must be applied in the event of encountering unexpected/potential heritage items.	Environmental Manager (or delegate)
Ancillary Facilities	Establishment of new ancillary facilities not identified in the planning approval documents	Demonstration that the ancillary facility meets the requirements of CoA A16. Where facilities don't meet the requirements of CoA A16, complying with the requirements of CoA A17. Endorsement by the ER for minor ancillary facilities in accordance with CoA A18.	DPIE (outside rail corridor) ER
Pre-Construction compliance report	Construction works	Pre-Construction compliance report to be completed in accordance with CoA A31 and submitted to the DPIE at least one month prior to the commencement of Construction.	DPIE
Construction Monitoring Programs	Construction Works	Endorsement of the programs by the ER and submission to the DPIE for approval at least one month prior to the commencement Construction Relevant baseline data for the specific Construction activity has been collected.	ER DPIE

3.14. Restoration of sites

On completion of the works, any areas disturbed by Construction activities (such as areas for site compounds, material storage, access and haul roads and the provision of the Principal's Project accommodation) will be reinstated and restored in accordance with consultation with Sydney Metro, the community and stakeholders. As a minimum, reinstatement will include the following:

- The Principal Contractor will clear and clean all working areas and accesses at project completion;
- At the completion of Construction all plant, temporary buildings or vehicles not required for the subsequent stage of Construction will be removed from the site;
- All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better; and
- Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of Construction.

3.15. Records of environmental activities

3.15.1. Environmental records

The Principal Contractor's Environmental Manager is responsible for maintaining all environmental management documents and records as current at the point of use. In accordance with the CEMF, records will be maintained onsite for the duration of works. Types of documents and records include:

- All environmental monitoring, inspection and compliance reports/records;
- Environmental monitoring data;
- Documentation as required by performance conditions, approvals, licences and legislation;
- Reports on environmental incidents, other environmental non-compliances or non-conformances and follow-up action;
- Results of internal and external audits;
- Minutes of CEMP and Construction environmental management system review meetings and evidence of any action taken;
- Modifications to site environmental documentation;
- Induction and training records;
- Procedures and protocols;
- Checklists, forms and templates;
- Correspondence with public authorities;
- Complaints and enquiries received, and follow-up action;
- Notifications received by regulators;
- Community engagement information;

- CEMP and Sub-plans;
- EWMS; and
- Additional documents and requirements as identified in the CEMF, CoA and REMMs.

Records will be retained by the Principal Contractor for a period of no less than seven years and will be made available in a timely manner to Sydney Metro (or their representative) upon request.

3.15.2. Document control

The Principal Contractor, the ER, and Sydney Metro where relevant, will coordinate the preparation, review and distribution, as appropriate, of the environmental documents and records listed above. During the Project, the environmental documents and records will be stored at each of the main site compounds.

The Principal Contractor will implement a Project document control management system to control the flow of documents within and between the Principal Contractor, Sydney Metro, stakeholders and subcontractors.

The process will also ensure that documentation is:

- Developed, reviewed and approved prior to issue;
- Issued for use;
- Controlled and stored for the legally required timeframe;
- Removed from use when superseded or obsolete; and
- Archived.

A register and distribution list will identify the current revision of particular documents, records or data.

3.16. Management review

The Principal Contractor will check the status and adequacy of the CEMP to ensure that it meets current requirements as well as relevant environmental standards.

The CEMP will be reviewed as and when required during the course of the contract when the following situations arise:

- Client recommendations for changes;
- Changes to the Principal Contractor's standard system;
- Opportunities for improvement or deficiencies in the project system are identified; and
- Following an audit of the system or the occurrence of significant incidents, non-conformances or non-compliances.

The routine management review will be undertaken at six monthly intervals.

In addition, Sydney Metro's Principal Contractor will ensure the continual review and improvement of the E&SMS. This will generally occur in response to:

- Issues raised during environmental surveillance and monitoring;

- Expanded scope of works;
- Environmental incidents; and/or
- Environmental non-conformances or non-compliances.

A formal review of the E&SMS by the Principal Contractor's Senior Management Team will also occur on an annual basis, as a minimum. This review will generate actions for the continual improvement of the E&SMS and supporting management plans.

3.17. CEMP/Sub-plan revision and changes to the Project

3.17.1. CEMP revision

Continual improvement is achieved through regular measurement, evaluation, audit and review of the effectiveness of the CEMP, Project environmental outcomes and the Principal Contractor's EMS. A review process ensures that environmental documentation is updated as appropriate for the specific works that are occurring on site. Reviews undertaken as described in Section 3.16 will provide specific opportunities to identify improvements in the environmental management system and/or this CEMP.

This CEMP, CEMP Sub-plans and Monitoring Programs will be 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 six monthly management plan reviews;
- Following reportable environmental incidents;
- Upon identification of new risks, including risks identified during risk register updates;
- When non-conformances or non-compliances are identified;
- Following environmental audits that identify matters that require attention;
- In response to Project change (including modifications);
- As part of a continuous improvement process; and
- Where requested or required by DPIE or any other Authority.

Should the document review process identify any issues or items within the documents that are either redundant or in need of updating, it is the responsibility of the Principal Contractor's Environmental Manager or Environmental Coordinators to prepare the revised documents.

This CEMP, and subsequent revisions, must be authorised by the Principal Contractor's Environmental Manager. The ER can approve minor changes to the CEMP, where the ER is satisfied that the amendment to the CEMP is necessary. Minor changes as described in the CoA A26(i) would typically include those that:

- Are administrative in nature (e.g. staff and agency/authority name changes);
- Do not noticeably increase the magnitude of impacts on the environment when considered individually or cumulatively;
- Are in response to audit findings or periodic reviews; and

- Do not compromise the ability of the Project to meet legislative requirements and are consistent with terms of the approval, and does not include any modifications to the terms of Project approval.

Where the ER deems it necessary, the amended CEMP will be forwarded to relevant stakeholders for review and comment if required and forwarded to the Planning Secretary for approval. All updates to the CEMP are to be communicated to Sydney Metro prior to finalisation and/or update of document.

Revised versions of the CEMP or Sub-plans will be made available and distributed to relevant stakeholders through the processes described in Section 3.15.2. Changes will also be communicated through toolbox talks to existing onsite personnel and incorporated into environmental induction materials.

3.17.2. Changes to the Project

Refinements to the Project may result from detailed design refinements or changed circumstances throughout Construction. In these instances the Principal Contractor's Environmental Manager will undertake a review of the refinement to confirm that it is covered by the Approval Documents. It may be the case that a Consistency Assessment in consultation with Sydney Metro will need to be undertaken to determine if a Project modification may be required following design changes or changes in scope (refer to Section 2.4).

Should the Consistency Assessment determine that a Project modification may be required (i.e. the impacts are of a nature and scale that it is not considered consistent with the Project approval), a modification application under Section 5.25(2) of the EP&A Act 1979 as prepared and lodged by Sydney Metro to the Planning Secretary for determination.

If required, the CEMP and Sub-plans would be updated as required to incorporate any additional potential environmental impacts or mitigation or management measures that resulted from the proposed changes. Affected personnel will be made aware of changes before the relevant works commence through toolbox talks, daily pre-start meeting, HSE committees or forums arranged to specifically address changes.

4. Environmental management documentation

CEMP Sub-plans, Monitoring Programs and Procedures support the Project’s CEMP and environmental management. These documents have been prepared to address the requirements of the CoA, REMM, CEMF and other measures identified in Section 1.2 and environment assessment documentation. The CEMP structure overview is shown in Figure 8 and key environmental management documents are discussed below.

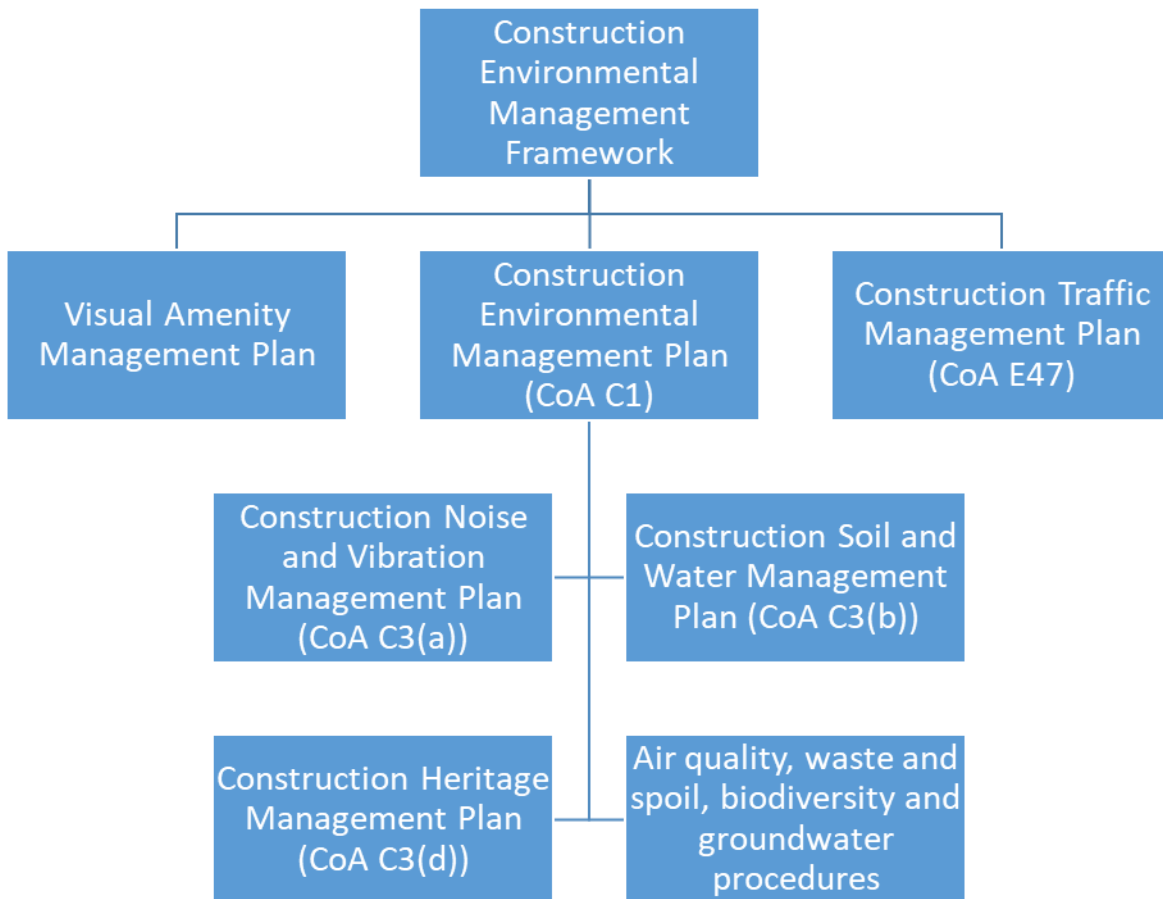


Figure 8 CEMP structure overview

4.1. Noise and vibration

A Noise and Vibration Management Plan (NVMP) has been developed to manage the noise and vibration risks during Construction of the Project. The NVMP is located in Appendix G of the CEMP and has been developed in accordance with CoA C3, C4, C5, C6 and C7.

For further Sub-plan specific CoA, REMM and other relevant requirements used to prepare the NVMP refer to Section 2 of the NVMP.

Furthermore, in accordance with the CoA C8(a) a Noise and Vibration Monitoring Program has been prepared and is included in Section 8 of the NVMP.

4.2. Soil and water

A Soil and Water Management Plan (SWMP) has been developed to manage soil and water quality risks during Construction of the Project. The SWMP is located in Appendix H of the CEMP and has been developed in accordance with CoA C3, C4, C5, C6 and C7.

For further Sub-plan specific CoA, REMM and other relevant requirements used to prepare the SWMP refer to Section 2.2 and Appendix A of the SWMP.

CoA C8(b) requires the preparation of a Water Quality Monitoring Program. Consistent with Section 3.3(b) of the CEMF, a Water Quality Monitoring Procedure has been prepared and is included in Section 6 of the SWMP.

4.3. Heritage

A Heritage Management Plan (HMP) has been developed to manage the risks from Construction of the Project. The HMP is located in Appendix I of the CEMP and has been developed in accordance with CoA C3, C4, C5, C6 and C7.

For further Sub-plan specific CoA, REMM and other relevant requirements used to prepare the HMP refer to Section 2.2 and Appendix A of the HMP.

4.4. Waste and spoil

CoA C3(c) required the preparation of a Waste and Spoil Management Plan. However, in accordance with the Sydney Metro City & Southwest - Sydenham to Bankstown Staging Report a Waste and Spoil Procedure has been prepared. Refer to Section 4.7 and Appendix E for further detail.

4.5. Visual Amenity

A Visual Amenity Management Plan (VAMP) will be prepared by the Principal Contractor to manage the visual amenity risks during Construction of the Project. The VAMP is a standalone document and has been developed in accordance with Section 3.4 of the CEMF.

4.6. Traffic

Construction Traffic Management Plan/s (CTMP/s) will be prepared by the Principal Contractor as per CoA E47. These are standalone documents and do not form part of the CEMP. The CTMP/s will be submitted to DPIE for information following engagement with RMS and SCO.

4.7. Other aspects

Consistent with the Sydenham to Bankstown Staging Report and Sections 3.4 and 3.5 of the CEMF, procedures have been prepared for the following environmental aspects:

- Biodiversity;
- Groundwater;
- Air Quality; and
- Waste and Spoil.

These procedures are included in Appendix E.

4.8. Sustainability

A Sustainability Strategy for the Sydenham to Bankstown project has been prepared in accordance with CoA E43. The Sustainability Strategy is available on the Sydney Metro website <https://www.sydneymetro.info/documents>.

Appendix A: Compliance Matrix

Conditions of Approval compliance matrix

CoA	Condition requirements	Document reference
A16	<p>Ancillary facilities that are not identified by description and location in the documents listed Condition A1 can only be established and used in each case if:</p> <ul style="list-style-type: none"> a) they are located within the Construction boundary of the CSSI; and b) they are not located next to a sensitive receiver (including access roads) (unless landowners and occupiers have accepted in writing 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), and threatened species, populations or ecological communities beyond the impacts approved under the terms 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 terms of this approval, including in relation to environmental, social and economic impacts. 	Section 3.12.1
A17	<p>Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 and do not meet the requirements of Condition A16, can only be established and used with the approval of the Planning Secretary except where they are located within the rail corridor, in which case they may be endorsed by the ER. A review of environmental impacts must be submitted with the request for Planning Secretary's approval or ER's endorsement.</p>	Section 3.12.1
A18	<p>The use of an ancillary facility for Construction must not commence until the CEMP required by Condition C1, relevant CEMP Sub-plans required by Condition C3 and relevant Construction Monitoring Programs required by Condition C8 have been approved by the Planning Secretary.</p>	Section 3.12.1
A19	<p>Lunch sheds, office sheds, portable toilet facilities, and the like, that are not identified as an ancillary facility in the documents listed Condition A1, can be established where they satisfy the following criteria:</p> <ul style="list-style-type: none"> a) are located within the Construction boundary; and b) have been assessed by the ER to have - <ul style="list-style-type: none"> i. minor amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and ii. minor 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 terms of this approval. 	Section 3.12.1
A20	<p>Boundary screening must be erected around all ancillary facilities that are adjacent to sensitive receivers for the duration of Construction of the CSSI unless otherwise agreed with relevant council(s), and affected residents, business operators or landowners.</p>	Section 3.12.2
A21	<p>Boundary screening required under Condition A20 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive</p>	Section 3.12.2

CoA	Condition requirements	Document reference
	receivers.	
A22	Work must not commence until an ER has been approved by the Planning Secretary and engaged by the Proponent.	Section 3.3
A23	The Planning Secretary's approval of an ER must be sought no later than one (1) month before the commencement of Work.	Section 3.3
A24	The proposed ER must be a suitably qualified and experienced person who was not involved in the preparation of the EIS, SPIR or Submissions Report and is independent from the design and Construction personnel for the CSSI and those involved in the delivery of it.	Section 3.3
A26	<p>For the duration of the Work until the commencement of Operation, or as agreed with the Planning Secretary, the approved ER must:</p> <ul style="list-style-type: none"> a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI; b) consider and inform the Planning Secretary on matters specified in the terms 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 C1, C3 and C8 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: <ul style="list-style-type: none"> i. make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary), or ii. make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary for information or are not required to be submitted to the Secretary); e) regularly monitor the implementation of the documents listed in Conditions C1, C3 and C8 to ensure implementation is being carried out in accordance with the document and the terms of this approval; f) as may be requested by the Planning Secretary, help plan, attend or undertake 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 A34 of this approval; g) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints; h) assess the impacts of minor ancillary facilities as required by Condition A19 of this approval; i) consider any minor amendments to be made to the documents listed in Conditions C1, C3 and C8 and any document that requires the approval of the Planning Secretary that comprise updating or are of an administrative or minor nature and are consistent with the terms of this approval and the documents listed in Conditions C1, C3 and C8 or other documents approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; and j) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report detailing the ER's actions and decisions on matters for which the ER was responsible in the preceding month. The k) Environmental Representative Monthly Report must be submitted within seven (7) days following the end of each month for the duration of the ER's engagement for the CSSI. 	Section 3.3
A29	Before the commencement of Construction, a Compliance Monitoring and Reporting Program must be prepared, endorsed by the ER and submitted to the Planning Secretary for information.	Section 3.9 and 3.10

CoA	Condition requirements	Document reference
A30	Compliance reports of the CSSI must be carried out for the duration of Construction and for a minimum of one (1) year following commencement of Operation. The Department must be notified of the commencement dates of Construction and Operation of the CSSI in the pre-Construction and pre-Operational compliance reports (respectively).	Section 3.9 and 3.10
A31	The Construction Compliance Report must provide details of any review of, and minor amendments made to, the CEMP (which must be approved by the ER), resulting from Construction carried out during the reporting period.	Section 3.9 and 3.10
A32	The Compliance Monitoring and Reporting Program in the form required under Condition A29 of this approval must be implemented for the duration of Construction and for a minimum of one (1) year following commencement of Operation, or for a longer period as determined by the Planning Secretary based on the outcomes of independent audits, Environmental Representative Reports and regular compliance reviews submitted through Compliance Reports . If staged Operation is proposed, or Operation is commenced of part of the CSSI, the Compliance Monitoring and Reporting Program must be implemented for the relevant period of each stage or part of the CSSI.	Section 3.9 and 3.10
A33	No later than one (1) month before the commencement of Construction an Independent Audit Program prepared in accordance with AS/NZS ISO 19011:2014 – Guidelines for Auditing Management Systems must be submitted to the Planning Secretary.	Section 3.9.3
A34	Independent audits of the CSSI must be carried out in accordance with: a) the Independent Audit Program submitted to the Planning Secretary under Condition A33 of this approval and Independent Audit Reports prepared.	Section 3.9.3
A35	The Proponent must: a) review and respond to each Independent Audit Report prepared under Condition A34 of this approval; and b) submit the response to the Planning Secretary within six (6) weeks of completing the audit.	Section 3.9.3
A36	The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Proponent becomes aware of an incident. 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.	Section 3.10.3
A37	Subsequent notification must be given, and reports submitted in accordance with the requirements set out in Appendix A	Section 3.10.3
E2	In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the Construction and Operation of the CSSI.	Appendix E – Procedure 3: Air Quality
E3	Where impacts to threatened ecological communities or endangered species cannot be avoided, they must be offset in accordance with the requirements of the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014) in agreement with OEH. <i>Note: the SPIR proposal does not require offsetting under the Framework for Biodiversity Assessment as it does not have any impacts to threatened ecological communities or threatened species.</i>	Appendix E – Procedure 1: Biodiversity
E4	The CSSI must be designed to retain as many trees as possible. Where trees are to be removed, the Proponent must provide a 2:1 ratio replacement of trees. Replacement trees must be planted within the project boundary or on public land up to 500 metres from the project boundary. Replacement tree plantings can be undertaken beyond 500 metres on public land within the local government areas to which the	Appendix E – Procedure 1:

CoA	Condition requirements	Document reference
	CSSI approval applies if requested by the relevant council(s) or where no more practicable land for planting can be found within and up to 500 metres from the CSSI boundary. The location of replacement trees must be determined in consultation with the relevant council(s).	Biodiversity
E5	<p>The Proponent must commission an independent experienced and suitably qualified arborist, to prepare a comprehensive Tree Report(s) before removing any trees as detailed in the documents listed in Condition A1. The Tree Report may be prepared for the entire CSSI or separate reports may be prepared for individual areas where trees are required to be removed. The report(s) must identify the impacts of the CSSI on trees and vegetation within and adjacent to the Construction footprint. The report(s) must include:</p> <p>(a) assess compliance with the requirements of this approval;</p> <p>(b) a description of the conditions of the tree(s) and its amenity and visual value;</p> <p>(c) consideration of all options to avoid tree removal, including relocation of services, redesign or relocation of ancillary components (such as substations, fencing etc.) and reduction of standard offsets to underground services; and</p> <p>(d) measures to avoid the removal of trees or minimise damage to existing trees and ensure the health and stability of those trees to be protected. This includes details of any proposed canopy or root pruning, root protection zone, excavation, site controls on waste disposal, vehicular access, storage of materials and protection of public utilities.</p> <p>A copy of the report(s) must be submitted to the Planning Secretary before the removal or pruning of any trees, including those affected by site establishment Work. All recommendations of the report must be implemented by the Proponent, unless otherwise agreed by the Planning Secretary.</p>	Appendix E – Procedure 1: Biodiversity
E6	<p>Replacement trees are to have a minimum pot size of 75 litres except where the plantings are consistent with the pot sizes specified in a relevant council’s plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant council. In areas not subject to council plans / programs / strategies, pot sizes should be informed through consultation with the relevant council(s).</p> <p><i>Note: For the purposes of Conditions E5 and E6, consultation with relevant council(s) encompasses consultation undertaken with those councils on the Station Design and Precinct Plan required by Condition E5, and any agreements reached on replacement pot sizes during consultation.</i></p>	Appendix E – Procedure 1: Biodiversity
E54	The Proponent must construct and operate the CSSI with the objective of minimising light spillage to surrounding properties. All lighting associated with the Construction and Operation of the CSSI must be consistent with the requirements of <i>Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting</i> and relevant Australian Standards in the series <i>AS/NZ 1158 – Lighting for Roads and Public Spaces</i> .	Refer to VAMP Section 3.2.3
E73	<p>Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub- plan (Condition C3).</p> <p><i>Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.</i></p>	Appendix E – Procedure 4: Waste and Spoil
E74	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the Protection of the Environment Operations Act 1997, under the Protection of the Environment Operations (Waste) Regulation 2014, and orders or exemptions made under the regulation.	Appendix E – Procedure 4: Waste and Spoil

CoA	Condition requirements	Document reference
E75	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.	Appendix E – Procedure 4: Waste and Spoil
E76	All waste must be classified in accordance with the EPA’s Waste Classification Guidelines, with appropriate records and disposal docketts retained for audit purposes.	Appendix E – Procedure 4: Waste and Spoil

CEMF compliance matrix

Clause	Requirement	Document Reference
1.3	<p>Transport for NSW (TfNSW) has developed an Environment and Sustainability Policy (Appendix A) for Sydney Metro Delivery Office (SMDO). Principal Contractors will be required to undertake their works in accordance with this policy. The policy reflects a commitment in the delivery of the project to:</p> <ul style="list-style-type: none"> Align with, and support, Transport for NSW (TfNSW) Environment & Sustainability Policy. Optimise sustainability outcomes, transport service quality, and cost effectiveness. Develop effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity conservation. Be environmentally responsible, by avoiding pollution, enhancing the natural environment and reducing the project ecological footprint, while complying with all applicable environmental laws, regulations and statutory obligations. Be socially responsible by delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships. 	<p>Section 1.3 Appendix D</p>
2	<p>The key environmental obligations to be addressed are contained within:</p> <ul style="list-style-type: none"> Legislative requirements. Project approval documentation. Conditions of Approval. Environment Protection Licences. Other permits, approval and licences. Standards and guidelines. 	<p>Section 2</p>

Clause	Requirement	Document Reference
2.1	<p>Table 1.1 (of the CEMF) identifies key NSW environmental legislative requirements and their application to Sydney Metro C&SW construction works, current as at the date of this document. TfNSW and its Contractors should regularly review their legislative requirements.</p>	Section 2
2.2	<p>Sydney Metro Northwest is classified as Critical State Significant Infrastructure and was approved under the following in accordance with Section 115W of the Environmental Protection and Assessment Act 1997:</p> <ul style="list-style-type: none"> • Staged State Infrastructure Approval (1 October 2011, modified on 25 September 2012) • Stage 1 – Major Civil Construction Works (25 September 2012, modified on 18 April 2013) • Stage 2 – Stations, Rail Infrastructure and Systems (8 May 2013, modified on 20 May 2014). <p>Some components of Sydney Metro Northwest (such as the conversion of the Epping to Chatswood component of the project) have also been approved under Part 5 of the Environmental Protection and Assessment Act. in which case TfNSW is the consent authority.</p> <p>Sydney Metro City and Southwest is also classified as Critical State Significant Infrastructure and requires approval from a consent authority under the requirements of the Environmental Protection and Assessment Act 1997 (Section 115W). Two separate approvals will be sought:</p> <ul style="list-style-type: none"> • Sydney Metro City and Southwest – Chatswood to Sydenham • Sydney Metro City and Southwest - Sydenham to Bankstown <p>The requirements of the approval are required to be complied with by TfNSW. Responsibility for implementing mitigation measures and conditions of approval will be allocated between TfNSW and Principal Contractors as appropriate. Typically TfNSW will produce a Staging Report which sets out the applicability and allocation of approval requirements within the project’s program of works.</p>	Section 2 Appendix A
2.3	<p>Sydney Metro projects often meet the definition of a number of scheduled activities under Schedule 1 of the Protection of the Environment Operation Act 1997 (POEO Act) and as such our contractors may be required to obtain an Environment Protection Licence (EPL) or work under the existing EPL held by Sydney Trains.</p> <p>Where required, Sydney Metro Principal Contractors will:</p> <ol style="list-style-type: none"> a. Apply for and be granted an EPL from the EPA. b. Hold an EPL which covers their scope of works as necessary under the POEO Act. c. Undertake their scope of works in accordance with the conditions of the applicable EPLs as issued by the EPA. d. Work under the existing Sydney Trains EPL. 	Section 2.6
2.4	<p>Numerous environmental publications, standards, codes of practice and guidelines are relevant to TfNSW construction and are referenced throughout this Construction Environmental Management Framework. A summary of these applicable standards and guidelines is provided below:</p> <ul style="list-style-type: none"> • ISO14001 Environmental Management System – Requirements with Guidelines for Use 	Section 2.5

Clause	Requirement	Document Reference
	<ul style="list-style-type: none"> Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009) Managing Urban Stormwater: Soil and Construction (Landcom, 2008) AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2008) AS 1742.3 Manual of uniform traffic control devices Part 3: Traffic control for works on roads RMS Traffic Control at Worksites Manual Australian and New Zealand Guidelines for Fresh and Marine Water Quality 	
3.1(a)	Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2004 and to have transitioned this accreditation into AS/NZS ISO 14001:2015 by September 2018.	This plan
3.1(b)	<p>Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS).</p> <p>The E&SMS will:</p> <ul style="list-style-type: none"> (i) Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2004 or 2015; (ii) Be supported by a process for identifying and responding to changing legislative or other requirements; (iii) Include processes for assessing design or construction methodology changes for consistency against the planning approvals; (iv) Include processes for tracking and reporting performance against sustainability and compliance targets; (v) Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and (vi) Be consistent with the Sydney Metro C&SW Sustainability Strategy and Sydney Metro Environment and Sustainability Policy 	This plan
3.1(c)	All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's E&SMS.	Section 3.4
3.1(d)	The relationship between key documents within the Sydney Metro Environment and Sustainability Management System and the Principal Contractor's Environment and Sustainability Management System is shown in Figure 2 (of the CEMF).	This Plan
3.1(e)	The Principal Contractors Sustainability Plan and its Sub-plans will capture governance and design requirements as well as social sustainability initiatives as required by the Sydney Metro Sustainability Strategies.	Refer to Sustainability Management Plan
3.1(f)	These plans vary in scope across different delivery packages.	Noted

Clause	Requirement	Document Reference
3.4(a)	<p>Subject to Section 3.3(b) and Section 3.2(b) the Principal Contractor will prepare issue-specific environmental Sub-plans to the CEMP and SMP which address each of the relevant environmental impacts at a particular site or stage of the project.</p> <p>Issue specific Sub-plans will include:</p> <ul style="list-style-type: none"> (i) Spoil management; (ii) Groundwater management; (iii) Traffic and transport; (iv) Noise and vibration management; (v) Heritage management; (vi) Flora and fauna management; (vii) Visual amenity management; (viii) Carbon and energy management; (ix) Materials management; (x) Soil and water management; (xi) Air quality management; and (xii) Waste management and recycling. 	Refer to Section 1.2 and Staging Report
3.5(a)	<p>The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should support environmental management Sub-plans, but may substitute for Sub-plans in agreement with TfNSW if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.</p>	Appendix E
3.5(b)	<p>The procedures will include;</p> <ul style="list-style-type: none"> (i) A breakdown of the work tasks relevant to the specific activity and indicate responsibility for each task; (ii) Potential impacts associated with each task; (iii) A risk rating for each of the identified potential impacts; (iv) Mitigation measures relevant to each of the work tasks; and (v) Responsibility to ensure the implementation of the mitigation measures 	Appendix E
3.5(c)	<p>The Principal Contractor will prepare and implement site based progressive Environmental Control Maps (ECM's) which as a minimum:</p> <ul style="list-style-type: none"> (i) Is a progressive document depicting a current representation of the site; 	Section 3.2.3

Clause	Requirement	Document Reference
	(ii) Indicates which environmental procedures, environmental approvals, or licences are applicable; (iii) Illustrates the site showing significant structures, work areas and boundaries; (iv) Illustrates environmental control measures and environmentally sensitive receivers; (v) Is endorsed by the Principal Contractors Environmental Manager or delegate; and (vi) Relevant workers will be trained in the requirements of and will sign off the procedures prior to commencing works on the specific site and / or activity.	
3.6(a)	Where the requirement for an additional environmental assessment is identified, this will be undertaken prior to undertaking any physical works. The environmental assessment will include: (i) A description of the existing surrounding environment; (ii) Details of the ancillary works and construction activities required to be carried out including the hours of works; (iii) An assessment of the environmental impacts of the works, including, but not necessarily limited to, traffic, noise and vibration, air quality, soil and water, ecology and heritage; (iv) Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts; and (v) Identification of the timing for completion of the construction works, and how the sites would be reinstated (including any necessary rehabilitation).	Section 2.4
3.7(a)	Prior to the commencement of construction the Principal Contractors will offer Pre-construction Building Condition Surveys, in writing, to the owners of buildings where there is a potential for construction activities to cause cosmetic or structural damage. If accepted, the Principal Contractor will produce a comprehensive written and photographic condition report produced by an appropriate professional prior to relevant works commencing.	Refer to Construction Noise and Vibration Management Plan.
3.7 (b)	Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles.	Refer to Construction Traffic Management Plan
3.8(a)	Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. Example activities include vegetation removal and water discharge. Hold points will be documented in relevant CEMPs.	Section 3.13
3.8(b)	Table 1.4 (of the CEMF) provides the structure for the register of hold points as well as a preliminary list of hold points which will be implemented.	Section 3.13
3.9(a)	Principal Contractors will be responsible for determining the training needs of their personnel. As a minimum this will include site induction, regular toolbox talks and topic specific environmental training as follows: i. The site induction will be provided to all site personnel and will include, as a minimum: <ul style="list-style-type: none"> • Training purpose, objectives and key issues; • Contractor's environmental policy and key performance indicators; 	Section 3.5

Clause	Requirement	Document Reference
	<ul style="list-style-type: none"> • Due diligence, duty of care and responsibilities; • Relevant conditions of any environmental licence and/or the relevant conditions of approval; • Site specific issues and controls including those described in the environmental procedures; • Reporting procedure for environmental hazards and incidents; • Communication protocols. <p>ii. Toolbox talks will be held on a regular basis in order to provide a project or site wide update, including any key or recurring environmental issues; and</p> <p>iii. Topic specific environmental training, e.g. erosion and sediment control training will be undertaken for relevant site personnel as determined by the Principal Contractor</p>	
3.9(b)	<p>Principal Contractors will conduct a Training Needs Analysis which:</p> <ul style="list-style-type: none"> i. Identifies that all staff are to receive an environmental induction and undertake environmental incident management training ii. Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and Sub-plans iii. Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements iv. Implements and documents as part of the CEMP a training schedule that plans attendance at environmental training events, provides mechanisms to notify staff of their training requirements, and identifies staff who do not attend scheduled training events or who have overdue training requirements 	Section 3.5
3.10(a)	<p>Principal Contractors will develop and implement a Pollution Incident Response Management Plan, in accordance with the requirements of the POEO Act. Contractors' emergency and incident response procedures will also be consistent with any relevant SMDO procedures and will include:</p> <ul style="list-style-type: none"> i. Categories for environmental emergencies and incidents ii. Notification protocols for each category of environmental emergency or incident, including notification of TfNSW and notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details iii. Identification of personnel who have the authority to take immediate action to shut down any activity, or to affect any environmental control measure (including as directed by an authorised officer of the EPA) iv. A process for undertaking appropriate levels of investigation for all incidents and the identification, implementation and assessment of corrective and preventative actions; and v. Notification protocols of incidents to the EPA, DPIE or OEH that are made by the Contractor or TfNSW. 	Sections 3.10
3.10(b)	The Contractor will make all personnel aware of the plan and their responsibilities.	Section 3.3
3.11(a)	Independent Environmental Representatives	Section 3.3

Clause	Requirement	Document Reference
	<p>a. TfNSW will engage Independent Environmental Representatives (ERs) to undertake the following, along with any additional roles as required:</p> <ul style="list-style-type: none"> i. Review, provide comment on and endorse (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation, planning approval conditions, relevant standards and this CEMF. ii. Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation. iii. Provide independent guidance and advice to TfNSW and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions. iv. Be the principal point of advice for the DPIE in relation to all questions and complaints concerning the environmental performance of the project. v. Ensure that environmental auditing is undertaken in accordance with all relevant project requirements. vi. Recommend reasonable steps, including ‘stop works’, to be taken to avoid or minimise adverse environmental impacts. 	
3.12(a)	<p>In relation to Roles and Responsibilities the CEMP will:</p> <ul style="list-style-type: none"> i. Describe the relationship between the Principal Contractor, TfNSW, key regulatory stakeholders, the independent environmental representative and the independent certifier ii. 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 iii. Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders. 	Section 3.3
3.12(b)	All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor	Section 3.4
3.13(a)	Issue specific environmental monitoring will be undertaken as required or as additionally required by approval, permit or licence conditions	Refer to relevant Sub-plans
3.13(b)	The results of any monitoring undertaken as a requirement of the EPL will be published on the Principal Contractor’s, or a project specific, website within 14 days of obtaining the results	Section 2.6
3.13(c)	<p>Environmental inspections will include:</p> <ul style="list-style-type: none"> i. Surveillance of environmental mitigation measures by the Site Foreman. 	Section 3.9.1

Clause	Requirement	Document Reference
	<ul style="list-style-type: none"> ii. Periodic inspections by the Principal Contractor’s Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record. 	
3.13(d)	Regular site inspections by the ERs and TfNSW representatives at a frequency to be agreed with the Principal Contractor	Section 3.9.1
3.13(e)	<p>Principal Contractors will be required to undertake internal environmental audits. Internal audits will include:</p> <ul style="list-style-type: none"> i. Compliance with approval, permit and licence conditions. ii. Compliance with the E&SMS, CEMP, SMP, Sub-plans and procedures. iii. Community consultation and complaint response. iv. Environmental training records. v. Environmental monitoring and inspection results 	Section 3.9.3
3.13(f)	TfNSW (or an independent environmental auditor) will also undertake periodic audits of the Principal Contractor’s E&SMS and compliance with the environmental aspects of contract documentation, including this Construction Environmental Management Framework.	Section 3.9.3
3.14(a)	<p>Environmental Non-compliances</p> <p>Principal Contractors will document and detail any non-compliances arising out of the above monitoring, inspections and audits. TfNSW will be made aware of all non-compliances in a timely manner</p>	Section 3.10
3.14(b)	Principal Contractors will develop and implement corrective actions to rectify the non-compliances and preventative actions in order to prevent the re-occurrence of the non-compliance. Contractors will also maintain a register non compliances, corrective actions and preventative actions	Section 3.10
3.14(c)	TfNSW or the Environmental Representative may raise non-compliances against environmental requirements.	Noted
3.15(a)	<p>Principal Contractors will maintain appropriate records of the following:</p> <ul style="list-style-type: none"> i. Site inspections, audits, monitoring, reviews or remedial actions. ii. Documentation as required by performance conditions, approvals, licences and legislation. iii. Modifications to site environmental documentation (e.g. CEMP, Sub-plans and procedures). iv. Other records as required by this Construction Environmental Management Framework 	Section 3.15
3.15(b)	Records will be retained onsite for the duration of works	Section 3.15
3.15(c)	Additionally records will be retained by the Principal Contractor for a period of no less than 7 years in total. Records will be made available in a timely manner to TfNSW (or their representative) upon request	Section 3.15

Clause	Requirement	Document Reference
3.15(d)	Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.13) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to TfNSW at an agreed frequency	Section 3.9.4
3.16(a)	Principal Contractors will ensure the continual review and improvement of the E&SMS. This will generally occur in response to: <ul style="list-style-type: none"> i. Issues raised during environmental surveillance and monitoring ii. Expanded scope of works iii. Environmental incidents iv. Environmental non-conformances. 	Section 3.16 and 3.17
3.16(b)	A formal review of the E&SMS by the Principal Contractor’s Senior Management Team will also occur on an annual basis, as a minimum. This review will generate actions for the continual improvement of the E&SMS and supporting management plans.	Section 3.16
5.1(a)	Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.	Section 3.6 Noise and Vibration Management Plan
5.1(b)	Works which can be undertaken outside of standard construction hours without any further approval include: <ul style="list-style-type: none"> i. Those which have been described in respective environmental assessments as being required to take place 24/7. For example, tunnelling and underground excavations and supporting activities will be required 24/7 ii. Works which are determined to comply with the relevant Noise Management Level at sensitive receivers iii. The delivery of materials outside of approved hours as required by the Police or other authorities (including RMS) for safety reasons iv. Where it is required to avoid the loss of lives, property and / or to prevent environmental harm in an emergency v. Where written agreement is reached with all affected receivers. 	Section 3.6 Noise and Vibration Management Plan
5.1(c)	Principal Contractors may apply for EPA approval to undertake works outside of normal working hours under their respective Environment Protection Licences	Noise and Vibration Management Plan
5.2(a)	Principal Contractors will consider the following in the layout of construction sites: <ul style="list-style-type: none"> i. The location of noise intensive works and 24 hour activities in relation to noise sensitive receivers ii. The location of site access and egress points in relation to noise and light sensitive receivers, especially for sites proposed to be utilised 24 hours per day iii. The use of site buildings to shield noisy activities from receivers iv. The use of noise barriers and / or acoustic sheds where feasible and reasonable for sites proposed to be regularly used outside of daytime hours 	Noise and Vibration Management Plan

Clause	Requirement	Document Reference
	v. Aim to minimise the requirement for reversing, especially of heavy vehicles.	
5.3(a)	Mitigation measures for reinstatement will be produced in consultation with TfNSW, the community and stakeholders.	Section 3.14
5.3(b)	Mitigation measures required for reinstatement will be incorporated into the CEMP and will include as a minimum: <ul style="list-style-type: none"> i. Principal Contractors will clear and clean all working areas and accesses at project completion ii. At the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site iii. All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better iv. Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction. 	Section 21
6.1 (a)	The following spoil management objectives will apply to the construction of the project: <ul style="list-style-type: none"> i. Minimise spoil generation where possible; ii. The project will mandate 100% reuse or recycling (on or off-site) of usable spoil; iii. Spoil will be managed with consideration to minimising adverse traffic and transport related issues; iv. Spoil will be managed to avoid contamination of land or water; v. Spoil will be managed with consideration of the impacts on residents and other sensitive receivers; and vi. Site contamination will be effectively managed to limit the potential risk to human health and the environment. 	Appendix E – Procedure 4: Waste and Spoil Appendix H – Soil and Water Management Plan
6.2 (a)	Principal Contractors will develop and implement a Spoil Management Plan for their scope of works. The Spoil Management Plan will include as a minimum: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
6.3 (a)	Examples of spoil mitigation measures include: <ul style="list-style-type: none"> i. Implementing the spoil re-use hierarchy; ii. Handling spoil to minimise potential for air and water pollution; and iii. Minimise traffic impacts associated with spoil removal. 	Appendix E – Procedure 4: Waste and Spoil
7.1 (a)	The following groundwater management objectives will apply to construction: <ul style="list-style-type: none"> i. Reduce the potential for drawdown of surrounding groundwater resources; ii. Prevent the pollution of groundwater through appropriate controls; and iii. Reduce the potential impacts of groundwater dependent ecosystems. 	Appendix E – Procedure 2: Groundwater
7.2 (a)	The following content may be provided within other sub plans such as the Soil and Water Management Plan and the Flora and Fauna Management Plan	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.

Clause	Requirement	Document Reference
7.2 (b)	Principal Contractor's will develop and implement a Groundwater Management Plan for their scope of works. The Groundwater Management Plan include as a minimum: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
7.3 (a)	Examples of groundwater mitigation measures include: <ul style="list-style-type: none"> i. Implementing all feasible and reasonable mitigation measures to limit groundwater inflows to stations and crossovers; and ii. Undertaking groundwater monitoring during construction (levels and quality) in areas identified as 'likely' and 'potential groundwater dependent ecosystems. 	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
11.1 (a)	The following flora and fauna objectives will apply to construction: <ul style="list-style-type: none"> i. Minimise impacts on flora and fauna; ii. Design waterway modifications and crossings to incorporate best practice principles; iii. Retain and enhance existing flora and fauna habitat wherever possible; and iv. Appropriately manage the spread of weeds and plant pathogens. 	Appendix E – Procedure 1: Biodiversity 11.1(a) ii. Is not relevant to this Project as no waterway modifications or crossings are proposed.
11.2 (a)	Principal Contractor's will develop and implement a Flora and Fauna Management Plan which will include as a minimum: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
11.2 (b)	Principal Contractors would undertake the following ecological monitoring as a minimum: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
11.2 (c)	The Principal Contractor's regular inspections will include a check on the ecological mitigation measures and project boundary fencing.	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
11.2 (d)	The following compliance records would be kept by the Principal Contractor: <ul style="list-style-type: none"> i. Records of pre-clearing inspections undertaken; ii. Records of the release of the pre-clearing hold point; and iii. Records of ecological inspections undertaken. 	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
11.3 (a)	Examples of flora and fauna mitigation measures include: <ul style="list-style-type: none"> i. Areas to be retained and adjacent habitat areas will be fenced off prior to works to prevent damage or accidental over clearing; ii. Clearing will follow a two-stage process as follows: <ul style="list-style-type: none"> - Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and 	Appendix E – Procedure 1: Biodiversity

Clause	Requirement	Document Reference
	<ul style="list-style-type: none"> - Habitat trees will be cleared no sooner than 48 hours after non-habitat trees have been cleared. A suitably qualified ecologist will be present on site during the clearing of habitat trees. Felled habitat trees will be left on the ground for 24 hours or inspected by the ecologist prior to further processing. iii. Weed management is to be undertaken in areas affected by construction prior to any clearing works in accordance with the Noxious Weeds Act 1993. 	
16.1 (a)	<p>The following air quality management objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and ii. Identify and control potential dust and air pollutant sources. 	Appendix E – Procedure 3: Air Quality
16.2 (a)	Principal Contractors will develop and implement an Air Quality Management Plan which will include, as a minimum: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
16.2 (b)	Air quality and dust monitoring will involve the following as a minimum: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
16.2 (c)	The following compliance records will be kept by the Principal Contractor: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
16.3 (a)	<p>Examples of air quality mitigation measures include:</p> <ul style="list-style-type: none"> i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes; ii. Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce wind-blown dust emissions; iii. Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate; and iv. Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure. 	<p>Appendix E – Procedure 3: Air Quality</p> <p>16.3 (a) iv. Is not relevant to this Project as no tunnel excavation works or deep excavations are proposed</p>
17.1 (a)	<p>The following waste objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise waste throughout the project life-cycle; and ii. Waste management strategies will be implemented in accordance with the <i>Waste Avoidance and Resource Recovery Act 2001</i> management hierarchy as follows: <ul style="list-style-type: none"> - Avoidance of unnecessary resource consumption; - Resource recovery (including reuse, reprocessing, recycling and energy recovery); and - Disposal. 	Appendix E – Procedure 4: Waste and Spoil

Clause	Requirement	Document Reference
17.1 (b)	Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by the Principal Contractor.	Appendix E – Procedure 4: Waste and Spoil
17.2 (a)	Principal Contractors will develop and implement a Waste Management and Recycling Plan which will include as a minimum: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
17.2 (b)	Principal Contractors will undertake the following waste monitoring as a minimum: [...]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
17.2 (c)	Principal Contractors will report all necessary waste and purchasing information to TfNSW as required for TfNSW to fulfil their WRAPP reporting requirements.	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
17.2 (d)	Compliance records will be retained by the Principal Contractors in relation to waste management including records of inspections and waste dockets for all waste removed from the site.	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
17.3 (a)	<p>Examples of waste management and recycling mitigation measures include:</p> <ul style="list-style-type: none"> i. All waste materials removed from the sites will be directed to an appropriately licensed waste management facility; ii. The use of raw materials (noise hoarding, site fencing, etc...) will be reused or shared, between sites and between construction contractors where feasible and reasonable; and iii. Recyclable wastes, including paper at site offices, will be stored separately from other wastes. 	Appendix E – Procedure 4: Waste and Spoil

Revised Environmental Mitigation Measures compliance matrix

REMM No.	REMM Requirement	Timing	Document Reference
LV4	<p>The management of trees during detailed design and construction planning would be guided by the project’s Tree Management Strategy, which would be developed in consultation with councils and include consideration of relevant local plans and strategies. Where removal cannot be avoided, trees would be replaced in accordance with the Tree Management Strategy, including replacement of removed trees in a two for one ratio.</p> <p>Opportunities to retain and protect existing trees would be defined during detailed design and construction planning, in accordance with the project’s Tree Management Strategy. The design would aim to reduce tree removal to the extent practicable, particularly where they contribute to screening vegetation or landscape character.</p>	Design/pre-construction	Appendix E – Procedure 1: Biodiversity
LV12	<p>Trees to be retained would be protected prior to the commencement of construction in accordance with AS4970-2009 Protection of trees on development sites and the project’s Tree Management Strategy.</p> <p>Any tree pruning would be undertaken in accordance with the project’s Tree Management Strategy, guided by a tree report prepared by a qualified arborist.</p>	Construction	Appendix E – Procedure 1: Biodiversity
B1	<p>Detailed design and construction planning would avoid direct impacts to vegetation mapped as threatened ecological communities or native plant community types, specifically Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box.</p>	Design/pre-construction	Appendix E – Procedure 1: Biodiversity
B2	<p>Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.</p>	Design/pre-construction	Appendix E – Procedure 1: Biodiversity
B3	<p>Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.</p>	Construction	Appendix E – Procedure 1: Biodiversity

REMM No.	REMM Requirement	Timing	Document Reference
B4	Impacts to Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.	Construction	Appendix E – Procedure 1: Biodiversity
B5	Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	Construction	Appendix E – Procedure 1: Biodiversity
B6	A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	Construction	Appendix E – Procedure 1: Biodiversity
B7	Priority weeds would be managed in accordance with the Biosecurity Act 2015. Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide.	Construction	Appendix E – Procedure 1: Biodiversity

Appendix B: Legal and Other Requirements

Legal requirements

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Commonwealth requirements		
<i>Environment Protection and Biodiversity Conservation Act, 1999</i>	National environment law that provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, defined in the Act as matters of national environmental significance.	No Relevance The Project would not impact on any matters of national environmental significance or Commonwealth land
<i>National Greenhouse and Energy Reporting Act 2007</i>	Corporations emitting more than 50kT of carbon dioxide equivalent units are required to register and report their Scope 1 and Scope 2 emissions for all Facilities in which they have Operational Control. Facilities emitting more than 25kT of carbon dioxide equivalent units must register and report Scope 1 and Scope 2 emissions.	High Relevance Where the Principal Contractor has Operational Control, the Scope 1 and Scope 2 emissions associated with the project must be reported. This includes the collation and reporting of subcontractors site emissions.
<i>Ozone Protection Act 1989</i>	This Act provides for a system of controls and to regulate and prohibit the manufacture, sale, distribution, use, emission, re-cycling & disposal of stratospheric ozone depleting substances and articles that contain these substances. The impact is that appropriately qualified people in accordance with this Act must undertake all servicing and maintenance of this type of equipment.	Low Relevance The relevance of this Act will relate to the use of refrigerators and air conditioning units in site buildings and vehicles which still contain CFCs. Such items are unlikely to be found on site.
NSW requirements		
<i>Biodiversity Conservation Act 2016</i>	The <i>Biodiversity Conservation Act 2016</i> provides provision for listing of species and ecological communities in NSW, protection of animals and plants, private land conservation agreements, the biodiversity offsetting scheme, Biodiversity Assessment under the EP&A Act 1979, biodiversity certification of land, public consultation on biodiversity matters, the functions of the Biodiversity Conservation Trust, regulatory compliance mechanisms, investigative powers and criminal proceedings under the Act.	Medium Relevance SSI projects are exempt for regulatory compliance mechanisms set out under Part 11 of the <i>Biodiversity Conservation Act</i> . Species listed within the act are recognised and are to be protected.
<i>Biosecurity Act 2015</i>	This Act relates to diseases and pests that may cause harm to human, animal or plant health or the environment, and for related purposes. Declared weeds	Low Relevance

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Biosecurity Regulation 2017	are listed in Schedule 8 of the Biosecurity Regulation 2017. This act repeals the <i>Noxious Weeds Act 1993</i> .	The Act relates to the management of vegetation during and removal activities and the duty to notify should certain pests and diseases be identified. No such species have been identified on the Project's works sites.
Contaminated Land Management Act 1997	This Act provides for a process to investigate and remediate land that has been contaminated and presents a significant risk of harm to human health. Section 60 of the Act is a "Duty to Report Contamination". This duty applies to owners of land and persons who become aware their activities have contaminated the land.	Medium Relevance The relevance of this Act to the Principal Contractor will be in the event suspected or potentially contaminated ground is found during Construction activities.
Dangerous Goods (Road and Rail Transport) Act 2008	The purpose of this Act is to regulate the transport of Dangerous Goods by road and rail in order to promote public safety and protect property and the environment. The transport of Dangerous Goods is required to be appropriately licensed (both vehicle and driver). Depending on the quantities being transported, the Act outlines specific requirements for including appropriate placards on the transport vehicle, emergency procedures, Personal Protective Equipment, manifest documentation and fire extinguishers.	High Relevance The relevance of the Act is in respect to the transport of dangerous good to & from the site. The project will require the use of a variety of dangerous goods. The Principal Contractor will need to review and ensure Dangerous Goods requirements are addressed where transported by its vehicles, plant and equipment.
Environmentally Hazardous Chemicals Act 1985	This Act prohibits the manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of an environmental hazardous chemical or waste (prescribed activity) except under the provisions of a chemical control or a licence. The EPA is required to prepare inventories of environmentally hazardous chemicals and declared chemical wastes.	Low Relevance It is not anticipated any environmentally hazardous chemicals or declared chemical waste will be used or stored on site. The Act therefore has little relevance to the sites other than being aware of the existence of registers of declared chemical wastes and environmentally hazardous chemicals.
Environmental Planning and Assessment Act 1979	This Act establishes a system of environmental planning and assessment of development proposals in NSW.	High Relevance The Project has been declared Critical State Significant Infrastructure (CSSI) by virtue of Schedule 5, clause 4 of <i>State Environmental Planning Policy (State and Regional Development) 2011</i> . The development consent conditions and obligations are incorporated into the CEMP.
Fisheries Management Act 1994	This Act is applicable to all waters within the state including private and public waters and all permanent and intermittent waters. The Act is most relevant in respect to maintaining water quality and ensuring no polluted water from site	Low Relevance Along with the POEO Act water discharging from the site must not pollute the adjacent streams or watercourses. Projects

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
	works enters streams, creeks and waterways. In addition this Act also has relevance for the removal of marine vegetation.	assessed under Division 5.2 of the EP&A Act are exempt from permits required under sections 201, 205 or 219.
Heritage Act 1977	<p>This Act provides for the preservation and conservation of heritage items such as building, works, relic, places of historic interest, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance.</p> <p>Under this Act a relic means any deposit, object or material evidence which is 50 or more years old and relates to the settlement of the area (not being an aboriginal settlement). It is an offence under this Act to wilfully and knowingly damage or destroy items of heritage value.</p> <p>Do not demolish damage, move or develop around any place, building, work, relic, moveable object, precinct, or land that is the subject of an interim heritage order or listing on the State Heritage Register or heritage listing in a Local Environmental Plan without an approval from the Heritage Council (NSW) or local council.</p>	<p>Low Relevance</p> <p>Works will not occur within a State Heritage Register item. Regardless, projects assessed under Division 5.2 of the EP&A Act are exempt from approvals required under Part 4 and permits required under section 139 of the <i>Heritage Act</i>.</p>
National Parks and Wildlife Act 1974	<p>The relevance of this Act is firstly in respect to the protection and preservation of Aboriginal artefacts. Discovery of material on site suspected as being of Aboriginal origin must be reported and protected pending assessment and direction by the Client's Representative.</p> <p>Secondly it is an offence under Part 8A of this Act to pick or harm threatened species.</p>	<p>Low Relevance</p> <p>No identified Aboriginal artefacts have been identified within the Project's Construction area. Projects assessed under Division 5.2 of the EP&A Act are exempt from obtaining an Aboriginal Heritage Impact Permit required under section 90.</p>
Pesticides Act 1999 Pesticides Regulation 1995	<p>This Act and Regulation establish a legislative framework to regulate the use of pesticides. They have the objective to promote the protection of human health, the environment, property and trade in relation to pesticides. It is an offence under this Act and Regulation to wilfully or negligently misuse pesticides.</p>	<p>Low Relevance</p> <p>It is not envisaged that pesticides will be used on the project by the Principal Contractor.</p>
Protection of the Environment Operations Act 1997	<p>This Act is of most relevance to work being carried out under this contract. It integrates into one Act all the controls necessary to regulate pollution and reduce degradation of the environment, provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act.</p>	<p>High Relevance</p> <p>The POEO Act provides for the issuing of environmental protection notices to control work and activities not covered by licences.</p> <p>Section 148 of the Act requires a pollution incident causing or threatening material harm to the environment to be notified to the EPA and other authorities immediately.</p>

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
		<p>Sydney Metro's Principal Contractor may choose to apply for an EPL from NSW EPA. If an EPL is granted for this Project, then this CEMP and Sub-plans would be revised to reflect the EPL's requirements.</p> <p>Project activities may be carried out under the Sydney Trains EPL 12208, where they are required as part of a Sydney Trains rail possession.</p>
<p>Roads Act 1993</p>	<p>This Act and associated Regulation primarily provide for such things as the opening and closing of public roads, identification of road boundaries and road widening, road levels, classification of public roads, road work, protection of public road and regulation of traffic, regulation of work, structures and activities.</p>	<p>Medium Relevance</p> <p>This act governs Road Occupancy Licences (ROL) that will be required for works on and round roads. An ROL cannot be refused to carry out works required under an SSI approval as per Section 115ZH of the EP&A Act.</p>
<p>Rural Fires Act 1997</p>	<p>This Act is intended to prevent, mitigate and suppress bush and other fires. It places a duty on the Principal Contractor as the occupier of the site to extinguish fires during bush fire danger periods or if unable to do so notify appropriate firefighting authorities of the existence of the fire and its location.</p>	<p>Low Relevance</p> <p>The Project's work sites and surrounding areas are not prone to bush fires.</p>
<p>Sydney Water Act 1994 Sydney Water Regulation 1994</p>	<p>This Act and Regulation establishes the Sydney Water Corporation as a statutory State owned corporation. The functions of the Sydney Water Corporation is to supply and store water, provide sewerage services, provide stormwater drainage and dispose of waste water within it area of operations.</p>	<p>High Relevance</p> <p>Coordination will be required with Sydney Water during the works.</p>
<p>Waste Avoidance and Resource Recovery Act 2001</p>	<p>This Act repeals the <i>Waste Minimisation and Management Act 1995</i>. The purpose of the Act is to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecological sustainable development. The Act provides for the making of policies and strategies to achieve these ends. It is an offence under the <i>Protection of the Environment Operations Act</i> to wilfully or negligently dispose of waste in a manner that harms or is likely to harm the environment.</p>	<p>High Relevance</p> <p>The relevance of the Act to this project is to implement the strategies by adopting the hierarchy of avoidance; avoidance of unnecessary resource consumption; resource recovery (including reuse, reprocessing, recycling and energy recovery), disposal (as a last resort).</p>
<p>Water Act 1912</p>	<p>This Act provides for licences to extract water for Construction purposes either from surface or artesian sources. Should Construction water be extracted from surface (other than sedimentation ponds) or artesian sources a licence will be required.</p>	<p>Low Relevance</p> <p>It is not proposed that Construction water will be obtained from surface (e.g. creeks, lakes etc.) or artesian sources.</p>
<p>Water Management Act 2000</p>	<p>This Act repeals the Rivers and Foreshores Improvement Act, 1948 and the Water Act, 1912. The provisions of both the aforesaid Acts are progressively</p>	<p>No Relevance</p>

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Water Management (General) Regulation 2004	rescinded as Water Management Plans are prepared and gazetted for catchment areas within the state. This Act and Regulation provide for the protection, conservation and ecologically sustainable development of water sources of the State and in particular to protect, enhance and restore water sources and their associated ecosystems.	Projects assessed under Division 5.2 of the EP&A Act are 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.

Other requirements

Approval / Licence	Requirement	Relevant section of CEMP
EPL	Required for activities listed in Schedule 1 of the POEO Act	Section 2.6
Section 143 notice of POEO Act	Prior to transportation of waste to receiving facility	Appendix E - Procedure 4: Waste and Spoil
Road Occupancy Licences	Prior to commencement of traffic related works that require access to roads	Section 2.2 and Appendix B

Appendix C: Risk Assessment

This appendix includes an indicative risk assessment for the Project. Once a Principal Contractor has been engaged for this Project, the Principal Contractor will be responsible for revising this risk assessment to adequately reflect any changes to their scope of works and/or methodologies, and to conform to their E&SMS.

All indicative environmental issues have been assessed in accordance with the table below:

Risk Assessment Rankings:

- >31 Very High;
- 22 to 30 High;
- 11 to 21 Medium; and
- 1 to 10 Low.

Risks will be reassessed by Sydney Metro's Principal Contractor following the consideration of control measures. The Principal Contractor will be responsible for nominating an owner for the implementation of management measures.

Issues or activities that represent a Very High risk after the application of control measures are not to be undertaken.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Approvals and Licensing									
Not identifying appropriate approvals, licenses or permits required and proceeding without them	Works delayed, infringements, prosecution, poor community relations and reputational loss.	L4	C3	17	Review the project planning approval and statutory documentation for requirements relevant to the Project. Identify and implement approval requirements within the CEMP, sub-plans and ERAPs. Check contract documentation. Identify and implement requirements from the Contract. Establish a register of approvals, licenses and permits.	L5	C3	13	Maintain Compliance Risk Matrix Undertake environmental audits as per Section 3.9 of this plan
Noise									
Noise from general construction activities resulting in impact to residents	Disturbance to residents or neighbouring businesses. Potential for complaints.	L2	C5	18	Mitigation measures as per NVMP are to be implemented. Respond to community enquiries and complaints in accordance with Sydney Metro requirements and implement the OCCS. Consult with the community in relation to upcoming activities that may result in concern. Monitor noise for compliance as the works progress at receiver locations. Provide periods of respite for high noise generating activities. Apply noise mitigation measures during entire project. Noise efficient equipment to be used on site.	L3	C5	12	Noise performance will be continually monitored as per the requirements of the NVMP. The Sydney Metro Construction Noise and Vibration Strategy is to be implemented
Noise during works required to be undertaken out of standard construction hours	Disturbance to residents or neighbouring businesses with	L2	C5	18	Implement noise mitigation strategies for OOHW. Monitor noise for compliance to project goals.	L3	C4	11	Noise performance will be continually monitored as per the requirements of the NVMP.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	potential for complaints.				Control Measures as per the NVMP are to be implemented.				The Sydney Metro Construction Noise and Vibration Strategy (CNVS) is to be implemented
Vibration									
Vibration intensive activities undertaken on the site such as hammering, vibratory rolling, etc	<p>Disruption, annoyance and nuisance to residents.</p> <p>Potential damage to adjacent residential and commercial residences and structures.</p> <p>Disruption to businesses as a result of vibration nuisance</p>	L3	C5	12	<p>Mitigation measures as per the NVMP are to be implemented.</p> <p>Determine vibration limits and structure/receiver offset distances.</p> <p>Consult with potentially affected parties prior to commencement of works on their upcoming activities that may be impacted by construction vibration.</p> <p>Ongoing vibration monitoring during vibration intensive works.</p>	L4	C5	7	Standard and additional mitigation measures for sensitive receptors around the Project works will be applied as per the CNVS, NVMP and the CNVIS.
Water Quality, Erosion and Sedimentation									
Sediment laden runoff from construction works leaving site	<p>Degradation of local watercourses.</p> <p>Increased turbidity in local water ways resulting in impact on aquatic life.</p> <p>Fines for sediment escaping site.</p>	L4	C4	11	<p>Mitigation Measures as per SWMP and any ESCP to be implemented.</p> <p>Install erosion and sediment controls within the project area.</p> <p>Ensure measures are inspected and maintained as the works progress and also prior to and post rainfall events.</p> <p>Provide training and awareness on the need to prevent pollution.</p> <p>Relevant people to undertake Erosion and Sediment Control training.</p>	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Stockpiling of vegetation and topsoil	<p>Wind and water erosion causing weed/seed dispersion offsite.</p> <p>Location of stockpiling next to</p>	L4	C3	17	<p>Develop Environmental Control Maps to show stockpile areas.</p> <p>Utilise appropriate locations for stockpiling (away from waterways, watercourses, drains where feasible and reasonable).</p>	L5	C4	8	Implement stockpile controls prior to the work commencing. Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

(Uncontrolled when printed)

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	waterways causing weeds/seeds to disperse from construction site.				Designated vegetation stockpiling areas. Minimise stockpiling / Use temporary stockpiling Cover stockpiles if left for extended periods				
Non-compliant water from construction works discharged from site	Non-compliant water entering stormwater system waterways (i.e. polluting - not compliant with discharge criteria).	L4	C4	11	Environmental Manager to approve all water discharges from site. Induction and toolbox talks Toolbox training on site procedures for water discharge Educate site staff on requirements and consequences of prosecution	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Works with the potential to intercept groundwater table	Ground water entering excavations Without appropriate safeguards onsite could lead to ground water contamination Spreading contamination via groundwater management	L3	C4	16	Implement the controls within Appendix E - Procedure 2: Groundwater Induction and toolbox talks Toolbox training on site procedures for water discharge Educate site staff on requirements and consequences of prosecution Environmental Manager/representative to approve all water discharges from site	L4	C4	11	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Waste									
Waste disposal during construction	Incorrect disposal of waste, further costs incurred for classifications and disposal, fines may be issued.	L3	C5	12	Implement the controls within Appendix E - Procedure 4: Waste and Spoil Identify opportunities to incorporate recovered materials into the permanent works. Provide facilities on site for source separation and recycling. Ensure accurate waste records are retained. Removal of wastes from the site would only be undertaken by a licensed	L4	C5	7	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Monitor and ensure reporting of all movements of waste from the worksite.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					contractor as required by the POEO Act and with appropriate approvals, if required, for contaminated materials, etc. All material to be recovered off-site to be appropriately classified in accordance with the Resource Recovery Exemptions. All material that requires off-site disposal to be appropriately tested and classified against the Waste Classification Guidelines (NSW EPA, 2014)				
Earthworks spoil disposal	Incorrect classification of waste (spoil) resulting in incorrect / illegal disposal/reuse.	L3	C5	12	Inductions, toolbox talks and training on recycling facilities and waste segregation practices. Separation of waste on site. Tracking of disposal processes. All contamination hotspots would be clearly marked in the field (where possible). Hotspots will be shown within contamination mapping and will be included in the Permit to Disturb process.	L4	C5	7	Regular inspections of work areas Monitor and ensure reporting of all movements of waste from the worksite
Washout of concrete in undesignated areas.	Sediment laden/alkaline water polluting surrounding stormwater system /watercourses.	L3	C4	16	Concrete washout areas clearly marked on Environmental Control Maps and delineated. Inductions on designated concrete washout areas. Subcontractor's agreements to include project compliant waste management principles.	L5	C4	8	Regular inspections of concrete washout areas and controls
Contamination									
Management of contaminated or untreated materials	Non-compliant material and contaminated water entering surrounding	L3	C4	16	Implement contamination management procedures from within SWMP. Identify any contamination hotspots and incorporate procedures for these	L4	C4	11	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	waterways. Decrease in health of nearby ecosystems.				locations into construction documentation. Apply the unexpected finds procedure within the SWMP. Induct personnel on unexpected finds procedure.				Monitor and ensure reporting of all movements of waste from the worksite.
Potential for discovery of unexpected contaminated spoil during construction.	Health effects resulting from airborne contamination, e.g. asbestos. Complaints received from odours released during excavations. Classification of spoil is changed and disposal options altered, costs incurred associated with disposal of higher classification of waste.	L4	C4	11	If contaminated soil is encountered, all works are to stop in the vicinity of the find and investigations commence. Unexpected finds procedure within the SWMP to be implemented. Induct personnel on location, type, nature, concentration of contaminants on site if found.	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Complete regular toolbox talks on how to manage unexpected finds.
Encountering asbestos / contaminated material on site	Transfer of material into previously uncontaminated area (outside work site) causing new contamination.	L3	C4	16	Inspections of excavated and filled surfaces would be made during Construction to determine the presence of visible asbestos. Conduct further site investigations to determine the presence and extent of contamination prior to Construction works commencing. Contaminated soils would not be stockpiled on the structural fill layer or formation layers to avoid cross contamination.	L4	C4	11	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Complete regular toolbox talks on how to manage unexpected finds.
Hazardous Materials									

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Storage of hazardous substances, leaking plant and equipment and spillage from refuelling.	Localised ground contamination / pollution of stormwater and requiring clean-up and/or receiving fines. Risk of igniting volatile substances. Unauthorised access to site / potential vandalism/damage leading to pollution.	L3	C4	16	<p>Induction, toolbox talks and training on appropriate handling and storage of liquids.</p> <p>All storm water drains should be identified prior to works and protection installed.</p> <p>Storage areas to be away from sensitive areas and appropriately bunded.</p> <p>SDS approved prior to bringing hazardous substances on site including risk assessment.</p> <p>Environmental Control Maps show storage locations and associated controls e.g. spill kits, etc.</p> <p>Training in use of spill kits.</p> <p>Contingency plans would be developed to deal with any spills which might occur during Construction.</p> <p>Clearly label containers.</p> <p>Regular auditing and inspection of storage areas and materials.</p> <p>Make storage areas restricted access areas.</p> <p>Reduce/eliminate need for hazardous substances.</p> <p>Ensure all work sites are secure before leaving the site.</p> <p>All liquids i.e. paint etc. are to be securely locked away at the end of each day</p>	L5	C4	8	Regular inspections of storage areas
Fuel contaminated runoff from construction works leaving site	Fuel contaminated runoff entering stormwater or waterways (i.e. polluting – not	L3	C4	16	<p>All storm water drains should be identified prior to works and controls implemented.</p> <p>Appropriate bunding/storage of substances.</p>	L4	C4	11	Regular inspections of works site to ensure all controls are in good condition and working.

(Uncontrolled when printed)

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	compliant with discharge criteria).				Toolbox on site procedures for sediment controls and chemical storage. Educate site staff on requirements and consequences of prosecution.				
Acid Sulfate Soils									
Disturbance of Potential Acid Sulphate soils (PASS) and Actual Acid Sulphate Soils (ASS) during excavations.	Mobilisation of metals within runoff to levels toxic to natural systems. Release of acidic runoff.	L4	C5	7	Assess risk for acid sulphate soils, and if the risk is determined to be high then implement the Acid Sulphate Soils Procedure (refer to SWMP). Awareness training in the identification and management of ASS. Provide containment and treatment facility on site. Ensure ASS material is left under the water table, disposed off-site or appropriately treated in a bunded area with sump.	L5	C5	4	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Heritage									
Unexpected heritage items encountered.	Work delays, additional studies, approvals required, damage to heritage item.	L3	C4	16	Implement the mitigation measures within the HMP. General inductions toolbox training on heritage management protocols. Label any known heritage items on Environmental Control Maps. If suspected heritage item encountered. Works to stop immediately and implement the Sydney Metro Unexpected Heritage Finds Procedure (refer to HMP). Clearly highlight no-go zones on the ECM and communicate requirements to construction personnel during pre-start briefs, inductions and tool-box talks.	L4	C4	11	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Provide frequent toolbox talks on Unexpected Heritage Finds Procedure

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Impact to Heritage Items	Damage to heritage fabric of heritage items by Project works	L3	C3	24	Implement the mitigation measures within the HMP. General inductions toolbox training on heritage management protocols. Label any known heritage items on Environmental Control Maps. Work within the safe working distances nominated in the NVMP. Undertake vibration compliance monitoring as per the NVMP. Clearly highlight no-go zones on the ECM and communicate requirements to construction personnel during pre-start briefs, inductions and tool-box talks. Demarcation of worksites and communicate it clearly with all construction personnel. The method for the demolition of existing elements at the Project sites would be developed to minimise direct and indirect impacts to adjacent and / or adjoining heritage items.	L4	C3	17	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Provide frequent toolbox talks on managing change.
Biodiversity									
Vegetation trimming / clearing required outside approved work area	Unauthorised works / removal of vegetation outside defined work area, possibility of removing threatened species, fines incurred.	L4	C4	11	Implement the controls within Appendix E – Procedure 1: Biodiversity Induction and tool box training on clearance zones and required protection measures If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken in accordance with the CEMF and CoA. If trees require trimming or removal, the requirements of CoA E5 would be implemented.	L5	C4	8	Implement Vegetation Removal Permit System. Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					Inspections during clearing activities. Fencing in place/ clear marking of trees to be retained and cleared / demarcation areas / plans showing clearing areas. Pre clearing checklist to be completed before any clearing of vegetation.				
Clearing and grubbing of vegetation within work site.	Erosion of soils, uncontrolled runoff, sediment deposited into surrounding vegetated areas and water courses, and invasion of weeds. Wrong vegetation removed. Potential for injury to native fauna.	L3	C4	16	Implement the controls within Appendix E – Procedure 1: Biodiversity Implement the mitigation measures within the SWMP. Inductions and toolbox training on erosion and sediment controls. Where possible works to be staged so environmental controls can be implemented after clearance works. If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken in accordance with the CEMF and CoA. If trees require trimming or removal, the requirements of CoA E5 would be implemented. A Tree Report is to be prepared for trees to be removed or pruned. Approved Erosion and Sediment Control Plans in place prior to starting works. Where applicable, mature trees and other native vegetation to be retained would be clearly delineated, with all Construction activities excluded from these areas. Pre clearing checklist to be completed before any clearing of vegetation.	L4	C4	11	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Loss, damage or injury to endangered or threatened species.	Removal, death, damage or injury to endangered or threatened species by plant and equipment	L4	C3	17	<p>Implement the controls within Appendix E – Procedure 1: Biodiversity</p> <p>All personnel attending site will be advised of controls and management during the onsite induction.</p> <p>Toolbox talks will be carried out prior to ground disturbance /site clearing works to ensure onsite personnel are made aware of potential loss of endangered species.</p> <p>If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken in accordance with the CEMF and CoA.</p> <p>If trees require trimming or removal, the requirements of CoA E5 would be implemented.</p> <p>If threatened flora or fauna species are identified on site, work in the vicinity of these species would stop immediately. spotter/catcher/botanist would be engaged to survey the</p>	L5	C3	13	<p>Implement Vegetation Removal Permit System.</p> <p>Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.</p>
Air Quality									
General Construction works; site establishment, excavations, piling	Dust activity in close proximity to residential and commercial premises, complaints received.	L3	C5	12	<p>Implement the controls within Appendix E – Procedure 3: Air Quality</p> <p>Toolbox training on dust and air quality Management.</p> <p>Provide dust mitigation measures through water sprays/misting as required.</p> <p>Cover stockpiles that are not to be worked on for a period of greater than 10 days.</p> <p>Erosion and Sediment Control Plans approved before works commence.</p>	L4	C5	7	<p>Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.</p>

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Exhaust from plant and equipment.	Emissions resulting in air pollution.	L3	C5	12	<p>Inductions and toolbox training on dust and air quality management.</p> <p>Well maintained plant/ equipment and prestart checks and servicing.</p> <p>Non-compliant vehicles removed from site / repaired.</p>	L4	C5	7	<p>Review plant check list prior to operating on site.</p> <p>Undertake verification checks as required.</p>
Traffic									
Loss of on-street car parking in adjacent residential streets and commercial areas during construction.	Loss of parking availability to adjacent residential and commercial properties could result in community complaints.	L3	C5	12	<p>Community notifications in accordance with the OCCS.</p> <p>Site vehicles shall be parked within the rail corridor and not affect public parking area where possible.</p> <p>Develop CTMP / Traffic control procedures.</p> <p>Limited street parking available around the Project sites.</p>	L4	C5	7	<p>Complete regular toolbox talks on how to minimise impacts in relation to traffic.</p> <p>Undertake regular inspections of worksite and adjacent streets.</p> <p>Supervisor and traffic controller to enforce traffic management requirements</p>
General construction traffic disturbing public access between local roads.	Disturbance to local residents resulting in complaints being made, limited access, potential for delays at local road access points resulting in complaints.	L3	C5	12	<p>Deliveries of plant and materials shall be undertaken outside of peak periods where possible.</p> <p>Site vehicles shall be parked within the rail corridor and not affect public parking areas.</p> <p>Scheduled road movements shall be minimised where possible.</p> <p>Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services.</p> <p>Approved Traffic Management Plans in consultation with relevant authorities.</p> <p>Detour routes to be advertised/ notified.</p> <p>Approved access routes, detailed Traffic Control Plans.</p> <p>Clear notifications / signage</p>	L4	C5	7	<p>Complete regular toolbox talks on how to minimise impacts in relation to traffic.</p> <p>Undertake regular inspections of worksite and adjacent streets.</p>

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Management of heavy vehicles / access routes.	Complaints from sensitive receivers due to increased level and frequency of noise.	L3	C5	12	<p>Deliveries of plant and materials shall be undertaken outside of peak periods where possible.</p> <p>Site vehicles shall be parked within the rail corridor and not affect public parking areas.</p> <p>Scheduled road movements shall be minimised where possible.</p> <p>Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services.</p> <p>Designated access routes.</p> <p>Approved CTMP.</p> <p>Community Notifications.</p> <p>Pedestrian management with traffic controller in place where required.</p>	L4	C5	7	<p>Complete regular toolbox talks on how to minimise impacts in relation to traffic.</p> <p>Permits from local council and/or RMS</p>
Truck deliveries out of normal working hours	<p>Un-approved deliveries resulting in non-conformance with project requirements.</p> <p>Noise impact to community / potential complaints.</p>	L3	C5	12	<p>Personnel training of noise awareness to community included in induction and toolboxes.</p> <p>Induction on Construction Hours for deliveries.</p> <p>Communication of delivery times to suppliers.</p> <p>Community Notifications on project activities occurring locally.</p> <p>Code of conduct / selection criteria in place for subcontractors.</p> <p>Out of hours works approval where required.</p> <p>Approved traffic/access routes.</p> <p>Planning and staging of works in approved hours as much as practical.</p>	L4	C5	7	<p>Delivery drivers provided with haulage routes prior to travelling to site and delivery times.</p> <p>Complete regular toolbox talks on how to minimise impacts in relation to traffic.</p>
Visual Amenity									

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Building Materials Stockpiles Temporary construction sheds and storage containers Plant and equipment movement Lighting	Surrounding aesthetic temporary altered during construction Lighting towers used during out of hours works may spill on nearby residents	L3	C5	12	The work area shall be maintained in an orderly manner Lighting required during night works shall be directed towards the work area and are from adjacent sensitive receivers	L4	C5	7	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Ancillary facilities									
Appropriate selection and management of the ancillary facilities	Inadequate assessment of impacts to surrounding business and residential receivers and environmental receptors. Potential for complaints.	L4	C4	11	Any ancillary facility not identified in the project Planning Approval, must comply with the relevant CoA (A16-A18). Use of site compounds would comply with the requirements of the CEMP and Sub-plans, CoA, REMM and CEMF to ensure environmental impacts are adequately managed.	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Utilities									
Utility Management	Service strike leading to environmental degradation	L3	C4	16	Develop and implement the Utilities Management Strategy in accordance with the Utilities Management Framework Engage a Utilities Coordination Manager (UCM) to oversee the coordination of utility works across the project and with third part service providers. The UCM will collaborate with the Community and Stakeholder Manager, the Place Manager and, where required, the Community Complaint Mediator to mitigate impacts to the local community during utility works and to resolve any	L5	C4	8	Permit to Disturb Service searching Detailed Site Survey management

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					community complaints relating to utility works. Implement a Permit to Disturb Induction and toolbox talks Detailed Site Survey to be managed by an appropriately qualified surveyor.				

Sydney Metro Consequence Criteria

	ENTERPRISE RISK CONSEQUENCES					
	C6 Insignificant	C5 Minor	C4 Moderate	C3 Major	C2 Severe	C1 Catastrophic
Environment	No appreciable changes to environment and/or highly localised event.	Change from normal conditions within environmental regulatory limits & environmental effects are within site boundaries.	Short-term and/or well-contained environmental effects. Minor remedial actions probably required.	Impacts external ecosystem & 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.

Sydney Metro Likelihood Criteria and Risk Matrix

Probability	One off event How likely?	Frequency	Repeated How often?	Likelihood	Consequences						
					C6	C5	C4	C3	C2	C1	
					Insignificant	Minor	Moderate	Major	Severe	Catastrophic Transformational for opportunities	
	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: Sydney Metro Environment and Sustainability Policy

Appendix E: Environmental Procedures

Procedure 1: Biodiversity

Impact: Biodiversity impacts related to the Project are expected to be minor. There will be some removal of trees and vegetation associated with site establishment, construction of the services building and embankment stabilisation works. Pre-clearance inspections will be undertaken prior to the removal of any trees.

Objective	To comply with contractual and legislative requirements and ensure that native fauna and flora are protected from Construction activities		
Targets	No death or injury to fauna No unapproved destruction of flora		
Legal, Contractual & Other Requirements	Planning consent conditions – SSI 8256		
Site specific planning / approval conditions / licence conditions	CoA – E3-E6 Mitigation measures committed in the EIS & SPIR CEMF Section 11		
Potential impacts and Initial Risk Rating Refer to Appendix 3 for Risk Matrix	Potential impact	Initial Risk Rating	
		P X	C Risk
	Death or injury of fauna	L4	C3 17
	Unapproved damage or removal to threatened plant species, threatened vegetation community or habitat resources	L4	C3 17
	Unapproved removal or trimming of vegetation	L4	C5 7

Controls (means & resources)	Commitments & Mitigation Measures outlined in the EIS / SPIR:		
	Mitigation Measure	Applicable to the Project	Responsibility
	Environmental Performance Outcome (EPO) Biodiversity 1 - The project is designed to minimise impacts on biodiversity. Where practicable, the design minimises the need to clear vegetation.	Applicable	Environmental Manager Design Manager
	EPO Biodiversity 2 - Potential impacts on biodiversity are managed in accordance with relevant legislation, including the EP&A Act, BC Act, EPBC Act, and the <i>Noxious Weeds Act 1993</i> .	Applicable	Environmental Manager Construction Manager Site Supervisor
	EPO Biodiversity 3 – The biodiversity outcome is consistent with the <i>Framework for Biodiversity Assessment</i> (OEH, 2014a).	Applicable	Environmental Manager Construction Manager Site Supervisor
	EPO Biodiversity 4 - Offsets are provided in accordance with the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014).	Applicable	Environmental Manager Construction Manager
	REMM B1 - Detailed design and Construction planning would avoid direct impacts to vegetation mapped as threatened ecological communities or native plant community types, specifically Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box.	Applicable	Environmental Manager Design Manager Construction Manager Site Supervisor
	REMM B2 - Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B3 - Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B4 - Impacts to Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine – Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B5 - Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B6 - A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B7 - Priority weeds would be managed in accordance with the <i>Biosecurity Act 2015</i> . Weeds of national environmental significance would be	Applicable	Environmental Manager Construction Manager

<p>managed in accordance with the Weeds of National Significance Weed Management Guide.</p>		<p>Site Supervisor</p>
<p>REMM LV4 - The management of trees during detailed design and construction planning would be guided by the project's Tree Management Strategy, which would be developed in consultation with councils and include consideration of relevant local plans and strategies. Where removal cannot be avoided, trees would be replaced in accordance with the Tree Management Strategy, including replacement of removed trees in a two for one ratio. Opportunities to retain and protect existing trees would be defined during detailed design and construction planning, in accordance with the project's Tree Management Strategy. The design would aim to reduce tree removal to the extent practicable, particularly where they contribute to screening vegetation or landscape character.</p>	<p>Applicable</p>	<p>Environmental Manager Construction Manager Site Supervisor</p>
<p>REMM LV12 - Trees to be retained would be protected prior to the commencement of construction in accordance with AS4970-2009 Protection of trees on development sites and the project's Tree Management Strategy. Any tree pruning would be undertaken in accordance with the project's Tree Management Strategy, guided by a tree report prepared by a qualified arborist.</p>	<p>Applicable</p>	<p>Environmental Manager Construction Manager Site Supervisor</p>

Site Specific Mitigation & Control Measures developed as part of this CEMP:

Mitigation Measure	Responsible
<p>The design will take into consideration the location of vegetation and will aim to minimise vegetation clearing, tree trimming and tree removal, particularly in relation to threatened plant species, threatened vegetation communities and habitat resources. Appropriate justification will be provided for impacts to trees within the Tree Report</p>	<p>Design Manager Environmental Manager</p>
<p>A Tree Report is to be produced by a qualified arborist in consultation with the design team and Environmental Manager.</p>	<p>Environmental Manager Construction Manager</p>
<p>Appropriately trained and qualified tree removal contractors to be used.</p>	<p>Construction Manager Site Supervisor</p>
<p>Awareness training in the need to preserve vegetation to be retained.</p>	<p>Environmental Manager Construction Manager</p>
<p>Provide barricading or other suitable protection measures for trees to be retained</p>	<p>Construction Manager Site Supervisor</p>
<p>Biodiversity offsetting will occur in accordance with CoA E3 where impacts to threatened ecological communities or endangered species cannot be avoided.</p>	<p>Environmental Manager</p>
<p>Where required in accordance with the design some trees will be removed and offset in accordance with requirements of CoA E4 and CoA E6.</p>	<p>Environmental Manager Site Supervisor</p>

	<p>If native fauna is identified within the disturbance footprint, the Principal Contractor's Environmental Manager will be contacted immediately. All necessary steps to minimise harm and mortality to such animals is required.</p>	<p>Construction Manager Site Supervisor</p>
	<p>Open excavations and storage areas to be inspected regularly for the presence of fauna species.</p>	<p>Site Supervisor</p>
	<p>No clearing or vegetation removal to occur without approval.</p>	<p>Environmental Manager Construction Manager Site Supervisor</p>
	<p>All vegetation to be retained shall be protected and demarcated. These areas will be highlighted on the Environmental Control Maps. The clearing limits and protected vegetation is to be clearly communicated to site personnel during site inductions and toolbox talks.</p>	<p>Environmental Manager Construction Manager Site Supervisor</p>
	<p>Works will only be undertaken in designated areas.</p>	<p>Construction Manager Site Supervisor</p>
	<p>The Principal Contractor will identify and remove any weeds within their work area. Any weeds will be lawfully disposed of to a licenced facility.</p>	<p>Environmental Manager Construction Manager Site Supervisor</p>
	<p>Segregate weed impacted waste material and dispose of to a licenced facility.</p>	<p>Construction Manager Site Supervisor</p>
	<p>Inspect plant and machinery before entering and leaving worksite to ensure no dirt remains as it may cause weeds to spread.</p>	<p>Construction Manager Site Supervisor</p>
	<p>Educate work force on common weeds within Bankstown rail corridor.</p>	<p>Environmental Manager</p>
	<p>Plant and equipment brought on to site must be cleaned and free of deleterious material, mud and other material that may harbour weed seeds.</p>	<p>Site Supervisor</p>
	<p>Construction plant, equipment and materials are not to be stored within the dripline of any trees or vegetation to be retained.</p>	<p>Construction Manager Site Supervisor</p>
	<p>The following clearing procedure will be implemented should additional clearing be required.</p>	<p>See flow chart</p>

	<p><u>1. Delineation of area to be cleared</u> Vegetation to be cleared will be clearly marked. Habitat trees in close proximity to construction activities will be clearly marked and protected. Marked boundaries will be cross-referenced to the approved impact area. In circumstances where native vegetation or mature tree clearing is required outside of the approved development footprint, an ecologist will inspect the proposed area and provide advice on the impact to flora and fauna and appropriate management.</p> <p><u>2. Pre-clearance inspections</u></p> <ul style="list-style-type: none"> • Pre-clearance inspections will be undertaken within two weeks prior to the commencement of vegetation clearing. • The pre-clearance inspections will include identification and inspection of trees containing hollows. Any isolated trees that have been identified as providing hollows, and which are located close to the construction areas, will be protected during construction. • Should any threatened species be identified within the project area, the Environment Manager shall be notified immediately. <p><u>3. Vegetation clearance and fauna handling procedures</u></p> <ul style="list-style-type: none"> • Mature trees will be inspected for fauna immediately before and after felling. • Animals found prior to or during clearing activities will be released to surrounding suitable habitat. • If any animal is injured, contact the relevant local wildlife rescue agency (e.g. WIRES) and/or veterinary surgery as soon as practical. Until the animal can be cared for by a suitably qualified animal handler, if possible minimise stress to the animal and reduce the risk of further injury by: <ul style="list-style-type: none"> o Handling fauna with care and as little as possible. o Covering larger animals with a towel or blanket and placing in a large cardboard box. o Placing small animals in a cotton bag, tied at the top. Keeping the animal in a quiet, warm, ventilated and dark location. • In the case of arboreal or flying mammals attempts will be made to relocate the den or roost. After capture, the animal(s) will be held by a trained wildlife carer for a period of no longer than two weeks until the roost or den can be relocated, either as an entire tree or part thereof. • Work may recommence once the animal(s) have been captured and removed from the area. • Felled trees will be placed between cleared and remnant bushland where possible to provide runways of ground cover for dispersal of animals. • Excess material may be mulched and used on site. 	<p>Environment Manager Site Supervisor</p> <p>Environment Manager</p> <p>Environment Manager</p>
<p>Timeframe</p>	<p>Duration of the works.</p>	
<p>Monitoring & Reporting</p>	<p>Tree Report Weekly inspections</p>	

	Vegetation Removal or Trimming Permits Pre-clearance inspections Daily Clearance reports			
Potential impacts and Residual Risk Rating Refer to Appendix 3 for Risk Matrix	Potential impact	Residual Risk Rating		
		P X	C	Risk
	Death or injury of fauna	L5	C3	13
	Unapproved damage or removal to threatened plant species, threatened vegetation community or habitat resources	L5	C3	13
	Unapproved removal or trimming of vegetation	L5	C5	4

Procedure 2: Groundwater

Impact: There is some potential for Construction activities to intersect the groundwater table

Objective	<ul style="list-style-type: none"> To comply with contractual and legislative requirements in relations to the management of groundwater Reduce the potential for drawdown of surrounding groundwater resources Prevent the pollution of groundwater through appropriate controls Reduce the potential impacts of groundwater dependant ecosystems 		
Targets	All groundwater to be tested before dewatering occurs		
Legal, Contractual & Other Requirements	<ul style="list-style-type: none"> Planning consent conditions – SSI 8256 CEMF Section 7 Water Management Act 2000 NSW Aquifer Interference Policy (NSW Office of Water, 2012) Protection of the Environment Operations Act 1997 		
Site specific planning / approval conditions / licence conditions	In accordance with the Sydney Metro City & Southwest –Sydenham to Bankstown Staging Report the Project does not require a specific Groundwater Management Plan as the likelihood of impacting on groundwater during the works are low. As such, management of any groundwater encountered during the works is to be managed in accordance with this procedure.		
Potential impacts and Initial Risk Rating Refer to Appendix 3 for Risk Matrix	Potential impact	Initial Risk Rating	
	Inappropriate dewatering of groundwater impacting on receiving environment or groundwater source	P X L4	C C5
Controls (means and resources)	Commitments & Mitigation Measures outlined in the EIS / SPIR		
	Mitigation Measure	Applicable to the Project	Responsible
	N/A	N/A	N/A
	Site Specific Mitigation & Control Measures developed as part of this CEMP:		
Mitigation Measure	Responsible		
A dewatering permit is to be in place for all dewatering activities, including the dewatering of any groundwater.	Environmental Manager Site Supervisor		

	Awareness training is to be provided to workers as required.	Environmental Manager Site Supervisor					
	Water treatment units are to be utilised and maintained where water testing indicates treatment is required.	Environmental Manager Construction Manager Site Supervisor					
	Dewatering may only occur on site or to licenced discharge points	Environmental Manager Construction Manager Site Supervisor					
Responsibilities	<ul style="list-style-type: none"> • Engineering personnel are responsible for identifying any works that may interact with known groundwater sources • Engineering personnel are responsible for determining any potential subsidence impacts associated with dewatering of groundwater • The Principal Contractor’s Environmental Manager is to organise testing of any groundwater prior to discharge • Engineering personnel are responsible for implementing appropriate treatment methods based on the results of groundwater quality testing 						
Timeframe	Duration of Construction						
Monitoring and Reporting	<ul style="list-style-type: none"> • Dewatering permit • Weekly inspections • Inspection and maintenance of treatment units (where applicable) • Incidents are to be recorded on form Environmental Incident and Complaint Report 						
Potential impacts and Residual Risk Rating Refer to Appendix 3 for Risk Matrix	Potential impact	Residual Risk Rating					
	Inappropriate dewatering of groundwater impacting on receiving environment or groundwater source	<table border="1"> <tr> <td>P X</td> <td>C</td> <td>Risk</td> </tr> <tr> <td>L5</td> <td>C5</td> <td>4</td> </tr> </table>	P X	C	Risk	L5	C5
P X	C	Risk					
L5	C5	4					

Procedure 3: Air Quality

Impact: Minimal impact expected due to the small area of disturbance associated with the works.

Objectives	<ul style="list-style-type: none"> To comply with contractual and legislative requirements in relations to the management of air quality Minimise gaseous and particulate pollutant emissions from Construction activities as far as feasible and reasonable Identify and control potential dust and air pollution sources. 								
Targets	<ul style="list-style-type: none"> No dust impacting on offsite activities or surrounding residences No release of contaminants, (odour, smoke etc.) into the air. 								
Legal, Contractual and Other Requirements	<ul style="list-style-type: none"> Planning consent conditions – SSI 8256 CEMF Section 16 <i>Protection of the Environment Operations Act 1997</i> <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i> 								
Site specific planning / approval conditions / licence conditions	<ul style="list-style-type: none"> CoA E2 Mitigation measures committed in the EIS & SPIR 								
Potential impacts and Initial Risk Rating Refer to Appendix 3 for Risk Matrix	Potential impact	Initial Risk Rating							
		P X	C						
	Dust or plant emission impacting on the receiving environment and human health	L3	C5	12					
	Abrasive blasting waste emissions impacting on the receiving environment and human health	L3	C4	16					
Odour from works causing disturbance to local receivers	L4	C5	7						
Controls (means and resources)	Commitments & Mitigation Measures outlined in the EIS / SPIR								
	<table border="1"> <thead> <tr> <th data-bbox="472 1046 1429 1086">Mitigation Measure</th> <th data-bbox="1429 1046 1727 1086">Applicable to the Project</th> <th data-bbox="1727 1046 2033 1086">Responsible</th> </tr> </thead> <tbody> <tr> <td data-bbox="472 1086 1429 1206">CoA E2 - In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the Construction and Operation of the CSSI.</td> <td data-bbox="1429 1086 1727 1206">Applicable</td> <td data-bbox="1727 1086 2033 1206">Environmental Manager Construction Manager Site Supervisor</td> </tr> </tbody> </table>	Mitigation Measure	Applicable to the Project	Responsible	CoA E2 - In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the Construction and Operation of the CSSI.	Applicable	Environmental Manager Construction Manager Site Supervisor		
	Mitigation Measure	Applicable to the Project	Responsible						
CoA E2 - In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the Construction and Operation of the CSSI.	Applicable	Environmental Manager Construction Manager Site Supervisor							
<p>Site Specific Mitigation & Control Measures developed as part of this CEMP:</p> <p>The following are the minimum general control measures to be implemented on the project, however additional control measures may be required following the completion of the Construction process procedure/work method statement for the proposed activity.</p>									
<table border="1"> <thead> <tr> <th data-bbox="472 1318 1727 1358">Mitigation Measures</th> <th data-bbox="1727 1318 2033 1358">Responsible</th> </tr> </thead> <tbody> <tr> <td data-bbox="472 1358 1727 1358"></td> <td data-bbox="1727 1358 2033 1358"></td> </tr> </tbody> </table>	Mitigation Measures	Responsible							
Mitigation Measures	Responsible								

All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.	Construction Manager Site Supervisor
Machinery would be turned off when not in use and not left to idle for prolonged periods.	Site Supervisor
Machinery and plant that will be kept on site will be serviced as per manufactures specifications.	Site Supervisor
Vehicle movements would be limited to designed entries and exits, haulage routes and parking areas.	Construction Manager Site Supervisor
Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.	Environmental Manager Site Supervisor
Materials transported to and from the site would be covered to reduce dust generation in transit.	Site Supervisor
Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.	Environmental Manager Site Supervisor
Provide shaker grids, rumble strip or equivalent stabilisation at site egress points.	Site Supervisor
Remove mud from haul vehicles prior to entering public roads.	Site Supervisor
Stabilisation of any exposed surfaces as soon as practicable, including implementation of final landscaping as early as possible.	Construction Manager Site Supervisor
Shade cloth would be fastened to the perimeter fence on the project site, where practicable, to minimise dust transported from the site during Construction.	Construction Manager Site Supervisor
Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken.	Site Supervisor
Works (including the spraying of paint and other materials) would be suspended during strong winds or in weather conditions where high levels of dust or airborne particulates are likely.	Construction Manager Site Supervisor
Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust.	Construction Manager Site Supervisor
Provision of Water tankers where necessary.	Construction Manager Site Supervisor

	Cover haul vehicles loads & ensure tail gates are closed when operating on public roads.	Construction Manager Site Supervisor
	Provide awareness training in the need to minimise dust.	Environmental Manager
	Note any odours during site inspections, particularly from any effluent tanks, and apply de-odourising agents as required.	Environmental Manager Construction Manager Site Supervisor
Responsibilities	<ul style="list-style-type: none"> The Site Manager to implement the requirements of this procedure Site Manager and Environmental Manager (or delegate) are to inspect the works at regular intervals. 	
Timeframe	Duration of Construction	
Monitoring and Reporting	<ul style="list-style-type: none"> Weekly inspections. Incidents or complaints to be recorded on form Environmental Incident and Complaint Report 	
Potential impacts and Residual Risk Rating Refer to Appendix 3 for Risk Matrix	Potential impact	Residual Risk Rating
		P X C Risk
	Dust or plant emission impacting on the receiving environment and human health	L4 C5 7
	Abrasive blasting waste emissions impacting on the receiving environment and human health	L4 C4 7
	Odour from works causing disturbance to local receivers	L5 C5 4

Procedure 4: Waste and Spoil

Impact: Minimal impact expected due to the small amount of waste generated and spoil to be handled.

<p>Objectives</p>	<ul style="list-style-type: none"> Minimise spoil generation where possible The project will mandate 100% reuse or recycling (on or off site) of usable spoil Spoil will be managed with consideration to minimising adverse traffic related issues Spoil will be managed to avoid contamination of land or water Spoil will be managed with consideration of the impacts on residents and other sensitive receivers Site contamination will be effectively managed to limit the potential risk to human health and the environment Minimise waste throughout the project life-cycle Waste management strategies will be implemented in accordance with the <i>Waste Avoidance and Resource Recovery Act 2001</i> management hierarchy as follows: <ul style="list-style-type: none"> Avoidance of unnecessary resource consumption Resource recovery (including reuse, reprocessing, recycling and energy recovery) Disposal. 									
<p>Targets</p>	<ul style="list-style-type: none"> 100% reuse or recycling of usable spoil. 90% recycling target (in accordance with REMM WM2) Waste tracking to occur throughout project and records to be maintained The principles of the waste management hierarchy will be adopted. 									
<p>Legal, Contractual and Other Requirements</p>	<ul style="list-style-type: none"> Planning consent conditions – SSI 8256, CoA C3(c) CEMF Section 6 and Section 17 <i>Protection of the Environment Operations Act 1997</i> <i>Protection of the Environment Operations (Waste) Regulation 2014</i> 									
<p>Site specific planning / approval conditions / licence conditions</p>	<p>CoA – E73 to E76 REMM – WM1 to WM7 Mitigation measures committed in the EIS & SPIR</p>									
<p>Potential impacts and Initial Risk Rating Refer to Appendix 3 for Risk Matrix</p>	<p>Potential impact</p>	<p>Initial Risk Rating</p> <table border="1"> <tr> <td>P X</td> <td>C</td> <td>Risk</td> </tr> </table>		P X	C	Risk				
P X	C	Risk								
	<p>Inappropriate waste disposal impacting on environmental receivers</p>	<p>L3</p>	<p>C5</p>	<p>12</p>						
<p>Controls (means and resources)</p>	<p>Commitments & Mitigation Measures outlined in the EIS / SPIR</p> <table border="1"> <thead> <tr> <th>Mitigation Measure</th> <th>Applicable to Project Locality</th> <th>Responsible</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				Mitigation Measure	Applicable to Project Locality	Responsible			
Mitigation Measure	Applicable to Project Locality	Responsible								

	<p>CoA E73 - Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub-plan (Condition C3). Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.</p>	<p>Applicable</p>	<p>Construction Manager Site Supervisor</p>
	<p>CoA E74 - The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the <i>Protection of the Environment Operations Act 1997</i>, under the <i>Protection of the Environment Operations (Waste) Regulation 2014</i>, and orders or exemptions made under the regulation.</p>	<p>Applicable</p>	<p>Environmental Manager Construction Manager Site Supervisor</p>
	<p>CoA E75 - 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 <i>Protection of the Environment Operations (Waste) Regulation 2014</i>, or to any other place that can lawfully accept such waste.</p>	<p>Applicable</p>	<p>Environmental Manager Construction Manager Site Supervisor</p>
	<p>CoA E76 - All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal docketts retained for audit purposes.</p>	<p>Applicable</p>	<p>Environmental Manager Construction Manager Site Supervisor</p>
	<p>REMM WM1 - Detailed design would include measures to minimise excess spoil generation. This would include a focus on optimising the design to minimise spoil volumes, and the reuse of material on-site.</p>	<p>Applicable</p>	<p>Design Manager Sustainability Manager Environmental Manager Construction Manager</p>
	<p>REMM WM2 - A recycling target of at least 90 per cent would be adopted.</p>	<p>Applicable</p>	<p>Sustainability Manager Environmental Manager Construction Manager Site Supervisor</p>
	<p>REMM WM3 - Spoil would be managed in accordance with the spoil management hierarchy.</p>	<p>Applicable</p>	<p>Sustainability Manager Environmental Manager Construction Manager Site Supervisor</p>
	<p>REMM WM4 - Target 100 per cent reuse of reusable spoil.</p>	<p>Applicable</p>	<p>Sustainability Manager Environmental Manager Construction Manager Site Supervisor</p>

REMM WM5 - Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor
REMM WM6 - All waste would be assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).	Applicable	Environmental Manager Construction Manager Site Supervisor
REMM WM7 - Waste segregation bins would be located at various locations within the project area, if space permits, to facilitate segregation and prevent cross contamination.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor

Site Specific Mitigation & Control Measures developed as part of this CEMP:

The following are the minimum general control measures to be implemented on the project, however additional control measures may be required following the completion of the Construction process procedure/work method statement for the proposed activity.

Mitigation Measures	Responsible
Minimise spoil generation where possible by undertaking a cut/fill balance exercise	Construction Manager Site Supervisor
Minimise spoil generation where possible by not over-excavating	Construction Manager Site Supervisor
Minimising adverse traffic related issues associated with spoil movement by primarily keeping any movements to within the corridor and by only using approved haulage routes under the Construction Traffic Management Plan	Construction Manager Site Supervisor
Spoil will be managed to avoid contamination of land or water by segregating soils known to contain contaminants	Environmental Manager Construction Manager Site Supervisor
Spoil will be managed to avoid contamination of land or water by implementing appropriate erosion and sedimentation controls, in particular by covering stockpiles where practicable	Environmental Manager Construction Manager Site Supervisor

	Spoil will be managed to avoid contamination of land or water by avoiding overland flow paths and known flood zones as storage areas	Environmental Manager Construction Manager Site Supervisor
	Spoil will be managed with consideration of the impacts on residents and other sensitive receivers by selecting laydown areas that are as far away from receivers as possible	Environmental Manager Construction Manager Site Supervisor
	Spoil will be managed with consideration of the impacts on residents and other sensitive receivers by using approved haulage routes under the Construction Traffic Management Plan	Construction Manager Site Supervisor
	Site contamination will be effectively managed to limit the potential risk to human health and the environment by segregating contaminated spoil	Environmental Manager Construction Manager Site Supervisor
	Site contamination will be effectively managed to limit the potential risk to human health and the environment by implementing the unexpected contamination finds procedure (refer to Appendix B of the SWMP).	Environmental Manager Construction Manager Site Supervisor
	Implement the mitigation measures within the Soil and Water Management Plan and other procedures within this CEMP.	Environmental Manager Construction Manager Site Supervisor
	Maintain a waste tracking register, including a copy of all waste docketts	Sustainability Manager
	Waste will be lawfully disposed of to a licenced facility	Environmental Manager Construction Manager Site Supervisor
	Any materials sent from the Project sites to another project site will comply with the NSW EPA Resource Recovery Exemptions. Appropriate testing and reporting in accordance with the Resource Recovery Exemption will be undertaken by an Environmental Consultant. All records will be kept on file and provided to the receiver.	Environmental Manager Construction Manager
	A spoil import and export form will be completed for any spoil coming to and leaving from the site.	Environmental Manager Construction Manager
Responsibilities	<ul style="list-style-type: none"> The Site Manager to implement the requirements of this procedure. Site Manager and Environmental Manager (or delegate) are to inspect the works at regular intervals. 	
Timeframe	<ul style="list-style-type: none"> Duration of Construction until all Principal Contractor waste obligations are met 	

Monitoring and Reporting	<ul style="list-style-type: none"> • Skips monitored visually by the Site Manager on a daily basis. • Weekly inspections. • Incidents or complaints to be recorded on form Environmental Incident and Complaint Report • Waste disposal records to be recorded in Principal Contractor’s Waste Register. 		
Potential impacts and Residual Risk Rating Refer to Appendix 3 for Risk Matrix	Potential impact	Residual Risk Rating	
	Inappropriate waste disposal impacting on environmental receivers	P X L4	C C5

Appendix F: Sydney Metro Environmental Incident and Non-compliance Reporting Procedure



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
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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 can 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: <ol style="list-style-type: none"> 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).

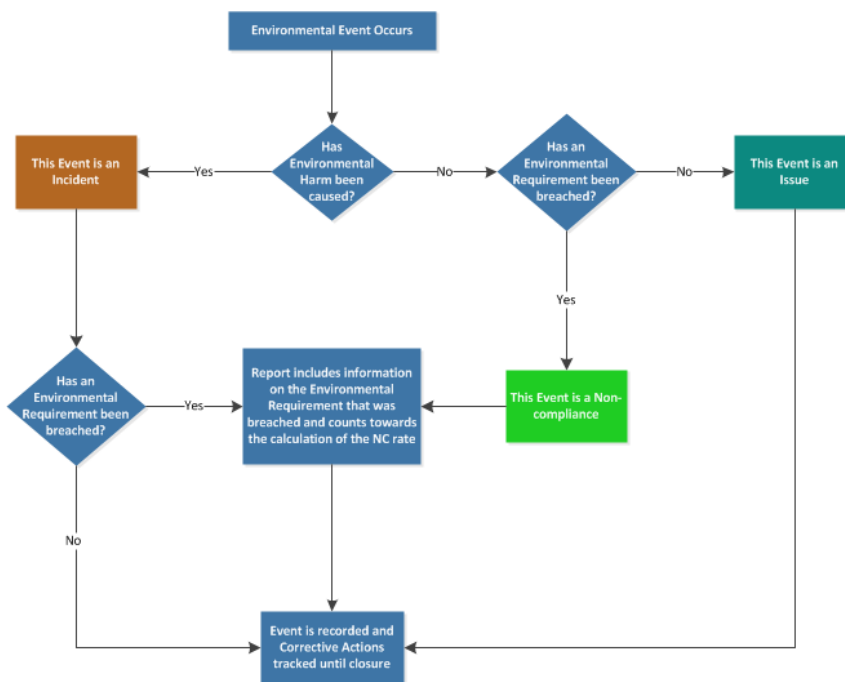


Figure 1: Environmental Event Classification Process

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 administrative processes that are common across all areas. It specifically does not cover procedural or administrative 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 is 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 an 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.

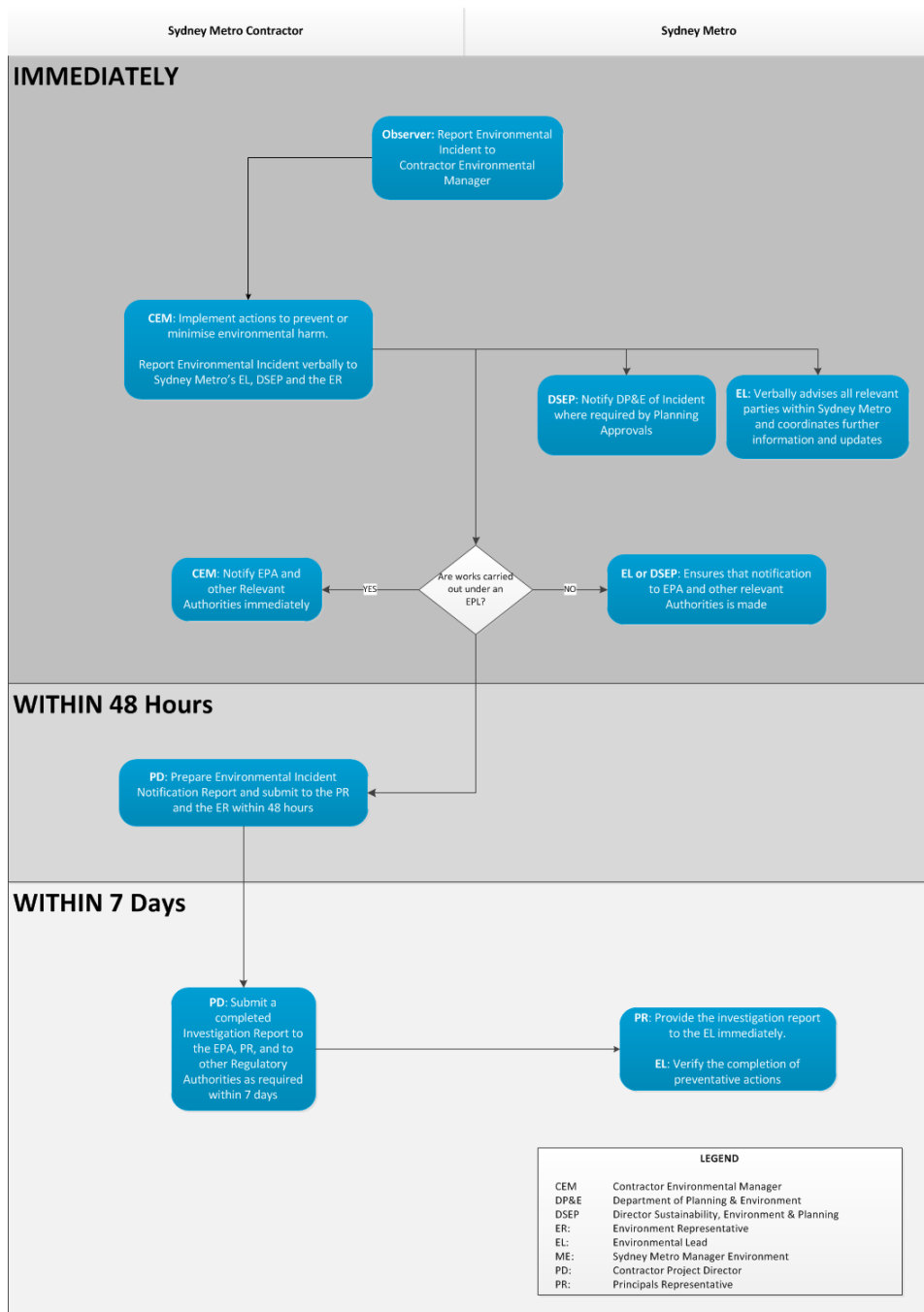


Figure 2: Environment Incident notification process for Class 1 and 2 Incidents

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 \(SM-17-0000040\)](#).

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:

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

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 it is 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 G: Noise and Vibration Management Plan

Appendix H: Soil and Water Management Plan



Appendix I: Heritage Management Plan