Business

Sydenham to Bankstown – Southwest Metro Conversion and Station Works Package 3 Construction Environmental Management Plan

Sydney Metro Integrated Management System (IMS)

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Revision	Date	Description
00	04/06/2024	Submitted to Sydney Metro and ER
01	21/06/2024	Updated with Sydney Metro and ER
02	23/07/2024	SWM3 transferred to new template
03	20/08/2024	Updated with comments following Consultation
04	12/09/2024	Updated with comments following DPHI review
05	03/10/2024	Update to refine scope
06	14/11/2024	Updated to include provision of Interface Contractors, commissioning trials of equipment and temporary use of any part of the CSSI, inclusion of LOR Enviro System Requirement- Trigger Action Response Plans (TARPs) & process for imported material
07	16/04/2025	Update to refine scope, clarify sustainability requirements, include PS Boundary Delineation
08	15/01/2026	Update to include revised Laing O'Rourke system requirements, amendments to legislation, and other minor changes

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Terms and Definitions

Terms	Definitions
Interface Contractor	Contractors that are engaged directly by Sydney Metro to complete works under S2B as PC.
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
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
DEECCW	Department of Climate Change, Energy, the Environment and Water
DPI	NSW Department of Primary Industries
DPHI	Department of Planning, Housing and Infrastructure
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
ERAP	Environmental Risk Action Plan
EWMS	Environmental Works Method Statement
E&SMS	Environment and Sustainability Management System
HMP	Heritage Management Plan

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Terms	Definitions
ICNG	Interim Construction Noise Guideline
IMS	Sydney Metro Integrated Management System
ISO	International Standardization Organisation
IWC	Inner West Council
JHLORJV	John Holland Laing O'Rourke Joint Venture
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, Housing Infrastructure
SM	Sydney Metro
SMP	Sustainability Management Plan
SPIR	Submissions and Preferred Infrastructure Report
SSI	State Significant Infrastructure
S2B	Sydenham to Bankstown
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

<table>
<tr><th>Condition Reference</th><th>Condition Requirements</th><th>Document Reference</th></tr>
<tr><td colspan="3">Conditions of Approval SSI-8256</td></tr>
<tr><td>C1</td><td>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.</td><td>This document fulfils the requirements of C1.
The Compliance Matrix in Appendix A tracks these requirements.</td></tr>
<tr><td>C2</td><td>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.</td><td>Section 1.1 Scope of Works</td></tr>
<tr><td>C3</td><td>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:
<table>
<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>
<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, OEH</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>
</table></td><td>Refer to relevant Sub-plans.

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.
Waste and Spoil is addressed within a procedure, refer to Appendix E.</td></tr>
<tr><td>C4</td><td>The CEMP Sub-plans must be prepared in accordance with the CEMF.</td><td>Refer to the Project's Noise and Vibration Management Plan, Soil and Water Management Plan and Heritage Management Plan.
Refer to Table 2: CEMP CEMF compliance matrix</td></tr>
<tr><td>C5</td><td>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</td><td>Refer to the Project's Noise and Vibration Management Plan, Soil and Water Management Plan and Heritage Management Plan.</td></tr>
</table>

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Condition Reference	Condition Requirements	Document Reference
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 **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	Section 1.2
C8	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. **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 Construction Noise and Vibration Management Plan and Construction Soil and Water Management Plan.
C9	Each Construction Monitoring Program must provide: 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 Construction Noise and Vibration Management Plan and Construction 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 Construction Noise and Vibration Management Plan and Construction 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 Construction Noise and Vibration Management Plan and Construction 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 Construction Noise and Vibration Management Plan and Construction 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	Refer to Construction Noise and Vibration Management Plan and Construction Soil

Condition Reference	Condition Requirements	Document Reference
	for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.	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 Construction Noise and Vibration Management Plan and Construction Soil and Water Management Plan.
C15	Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.	Refer to Construction Noise and Vibration Management Plan and Construction 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.	Table 4: Applicability of the CEMF to the Project 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 4.1 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 4.3.2 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	Section 4.4

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Clause	Requirement	Document Reference
	requirements and their interface with overall project organisation structure;	
(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 4.4
(vii)	Identify communication requirements, including liaison with stakeholders and the community;	Overarching Sydney Metro Community Communication Strategy
(viii)	Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.9(b)	Section 4.6
(ix)	Management strategies for environmental compliance and review of the performance of environmental controls;	Sections 4.12, 4.18 and 4.19
(x)	Processes and methodologies for surveillance and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	Section 4.11
(xi)	Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	Section 4.10 and 4.12
(xii)	Include procedures for the control of environmental records.	Section 4.17
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 (DPHI).	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.

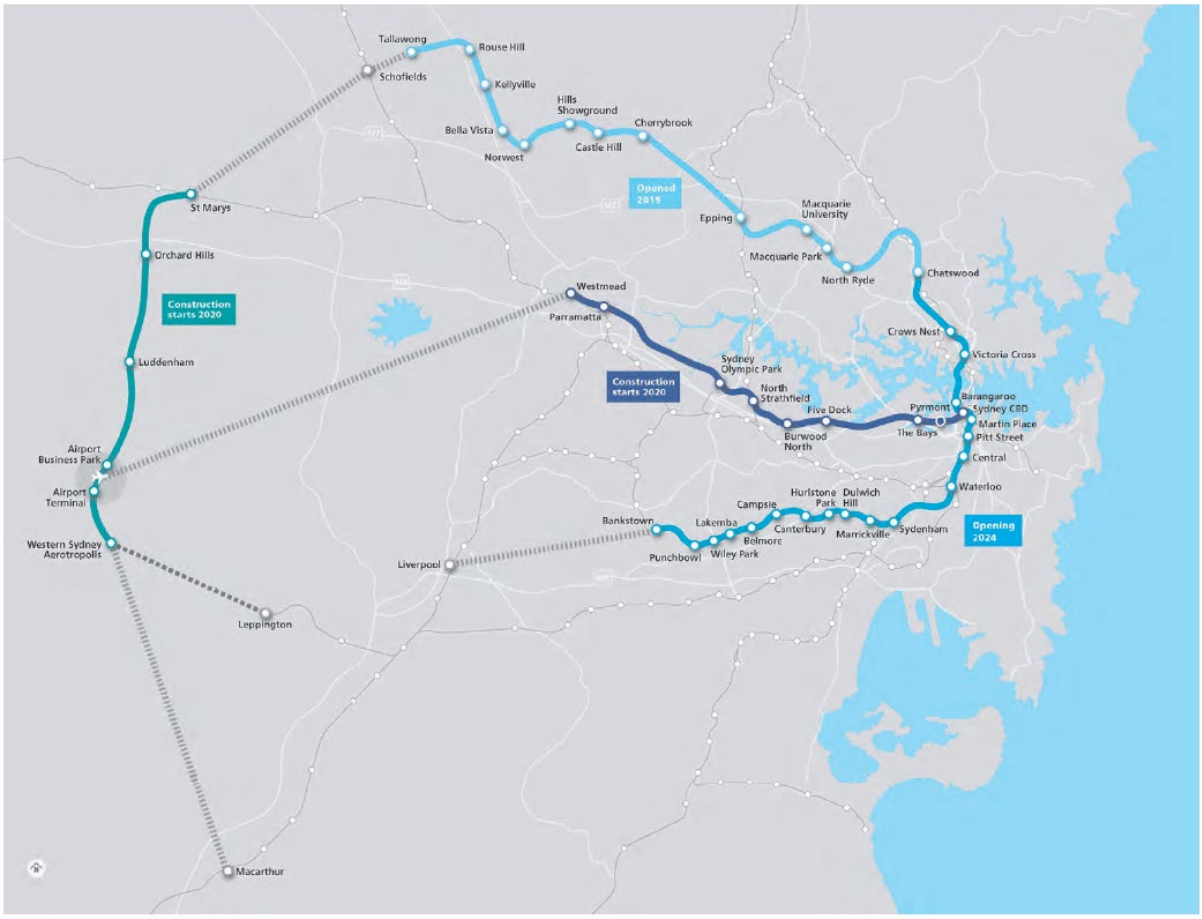


Figure 1: Sydney Metro route map

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 SWM3 portion (herein referred to as the SWM3 Project).

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The S2B 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 S2B 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 S2B Project Modification was determined by the Minister for Planning on 22 October 2020.

1.1. Scope of works

This document refers to the Sydenham to Bankstown; Southwest Metro Conversion and Station Works Package Scope 3 (SWM3 the Project). Below is a description of the Construction scope for the Project:

Permanent Works

Bankstown Station and Precinct Works: New, and modification to existing, infrastructure and systems to facilitate a new cross-corridor plaza between The Appian Way (north of the rail corridor) and Restwell Street (south of rail corridor) retail facilities and Station Precinct and Public Domain improvements.
Divided into four Stages of delivery to facilitate:

- **Stage 1: Sydney Trains Bankstown Works** (To enable Sydney Trains 4-Car operation) Separation of the current Sydney Trains line at Bankstown into sections for Sydney Metro and Sydney Trains

- **Stage 2: Sydney Metro Turn back, fencing and rail adjustment** to enable dynamic testing in the Sydney Metro portion

- **Stage 3a: Sydney Trains Bankstown Works** (To enable Sydney Trains 8-Car operation)
    - Bankstown Station Works: extension of the existing platforms further west, a new eastern entrance to Bankstown Station with Gatelines and back of house operational spaces
    - Sydney Trains Corridor: track adjustments, new diamond crossing (or alternative equivalent), OHWS and signalling and rail systems infrastructure to accommodate the modifications to Bankstown Station and continued operations between Bankstown and Yagoona stations

- **Stage 3b: Bankstown Metro Works**
    - Bankstown Metro Station Works
    - Bankstown Metro Corridor Works

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- **Stage 4: all remaining Bankstown Station and Precinct Works**, to achieve the final station and precinct configuration

Southwest Station Work

- Remaining (S2B works from SWMC, BEW, SWM1, SWM2)
    - Remaining South West Metro Corridor Work
        - Segregation Fencing between;
            - Marrickville and Dulwich Hill
            - Hurlstone Park and Canterbury
            - Canterbury and Campsie
            - Campsie to Belmore
    - Remaining South West Metro Corridor Work Package 2
        - Guard Rail installation various locations along corridor
        - Overhead Wire installation various locations along corridor
        - Station Security Fencing
            - Marrickville
            - Dulwich Hill
            - Canterbury
            - Campsie
            - Belmore
            - Lakemba
            - Wiley Park
            - Punchbowl
        - Segregation Fencing
            - Sydenham
            - Dulwich Hill
            - Campsie
        - Mechanical Gap Filler/Platform Screen Doors- all stations excluding Sydenham and Bankstown (delivered by IC in accordance with the Approved SWM3 CEMP and Sub Plans)
        - Signalling at Sydenham and Bankstown
- Additional (SWM3) including station refresh and heritage scope consisting of repointing, fabric repair, regrading platforms, internal fit out, roofing, equitable canopy installation, conduit and comms route install, industrial painting

Southwest Corridor Works

- Corridor access stairs
- Screens fixed to CSR on bridges
- Veg management
- Acoustic treatment
- Boundary fencing
- Track monitoring
- Cable hauling, signalling and comms equipment, radio mast and repeater install (MTR)
- Corridor Intrusion Detection System/Object Detection System (CIDS/ODS) (delivered by IC in accordance with the Approved SWM3 CEMP and Sub Plans)

Asset Upgrades

- Infringement and track rectification including removal of various Sydney Trains signals, signal huts/bungalows
- Bridge upgrades renewals
- Civil asset upgrade renewal

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Final Conversions

- Sydenham junction final track configuration, fencing, wayfinding & signage (all stations), building management and control systems (BMCS), cable containment systems, cabinet installation and cable haul from Stations to MSBs, cable termination, testing and commissioning, low voltage power supplies, distribution systems and energisation, and lift conversions (Marrickville Station to Punchbowl Station)
- Earthing bonding, alteration works, insulated rail joints, redundant asset works
- Clean up work (final rail grind, final rail tamp, station refresh/deep clean)
- Station meal room alterations at 9 stations (excluding Bankstown)
- Fixed gap filler works
- Commissioning trials of equipment and temporary use of any part of the CSSI by Interface Contractor within the definition of Construction, testing alarms and PA systems (Under separate EPL and low impact activities subject to ER endorsement as per Staging Report Rev 8.1 & Mod 3).
- UTO Gate - Cable hauling, cabinet install and terminations, balise removal & re-installation, PEK cable hauling, Testing and Commissioning work (delivered by IC in accordance with the Approved SWM3 CEMP and Sub Plans)

ARTC Works

Temporary and permanent adjustments to ARTC operated and maintained infrastructure
Utility works

- Qenos Pipe removal
- Non Sydney Trains (ST) or Sydney Metro (SM) assets (typically non-contestable works)

Local area works

modification, reinstatement of public space, roads and pedestrian way, required for, or as a consequence of the SWM3 Contractor's Activities

Property works

The Property Works comprises permanent adjustments to existing private properties required for, or as a consequence of the SWM3 Works and Temporary Works

Temporary Works

- Temporary arrangements to divert and control pedestrians, public transport users, cyclists, public transport and traffic and to provide public access, amenity, security and safety during all stages of design and construction of the Works;
- Temporary arrangements for people and vehicles to safely access all property, including publicly accessible space affected by the Contractor's Activities;
- Temporary arrangements for people and vehicles to safely access the Site;
- Temporary access stairs, walkways and platforms within the Site;
- Temporary construction hoardings, fencing, noise walls, access gates, barriers and signage on and around the Site;
- All environmental safeguards and measures necessary to mitigate environmental effects which may arise during the design and construction of the Works;
- Cleaning, maintenance, repair, replacement and reinstatement, as required, of all areas occupied by the Contractor during design and construction of the Works;
- Temporary site facilities/compounds required for design and construction of the Works (i.e. Canterbury Bowls Club), including set-up and operation;
- Temporary infrastructure, safety screens and ground support installed or erected to undertake design and construction of the Works;

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- Temporary arrangements for Utility Services including water, electricity, stormwater, sewerage, gas and electronic communications;
- Temporary power for stations
- Temporary works and measures required as a consequence of requirements arising from the stakeholder and community liaison process; and
- All other temporary works and measures required for the construction of the Works.
- Investigation works including services searching and geotechnical investigations, insitu waste classification along the full alignment from Sydenham to Bankstown.

MTR Dynamic Train Testing

- T1: Train moving at walking speed
- T2: Train accelerating from 0km/hr to 40km/hr
- T3: Train moving at 100km/hr
- T4: Train moving at 25km/hr
- T5: Train accelerating from 0km/hr to 100km/hr, train decelerating from 100km/hr to 0km/hr

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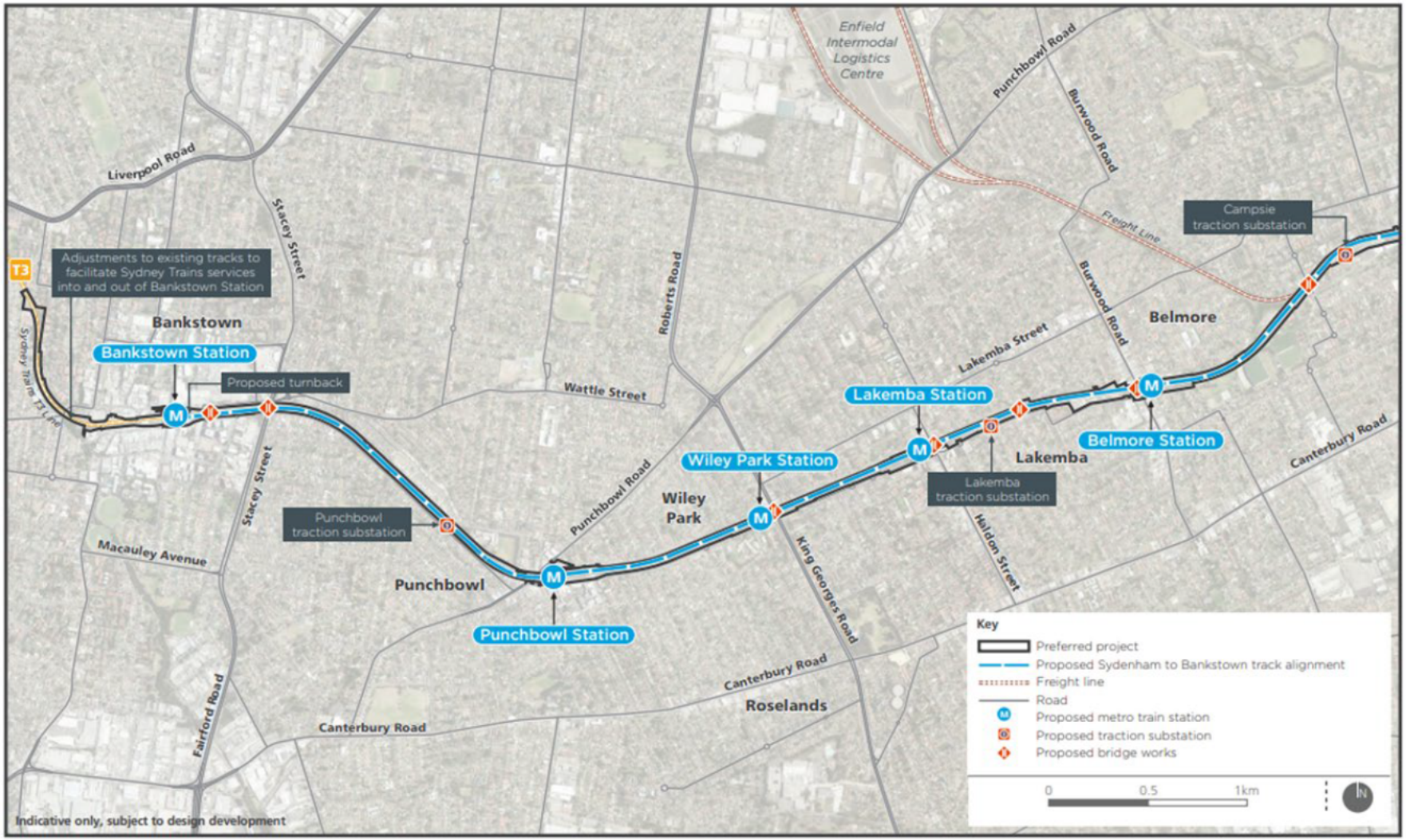


Figure 2: Sydney Metro (source: Sydney Metro City & Southwest - Sydenham to Bankstown - Submissions and Preferred Infrastructure Report, 2018)

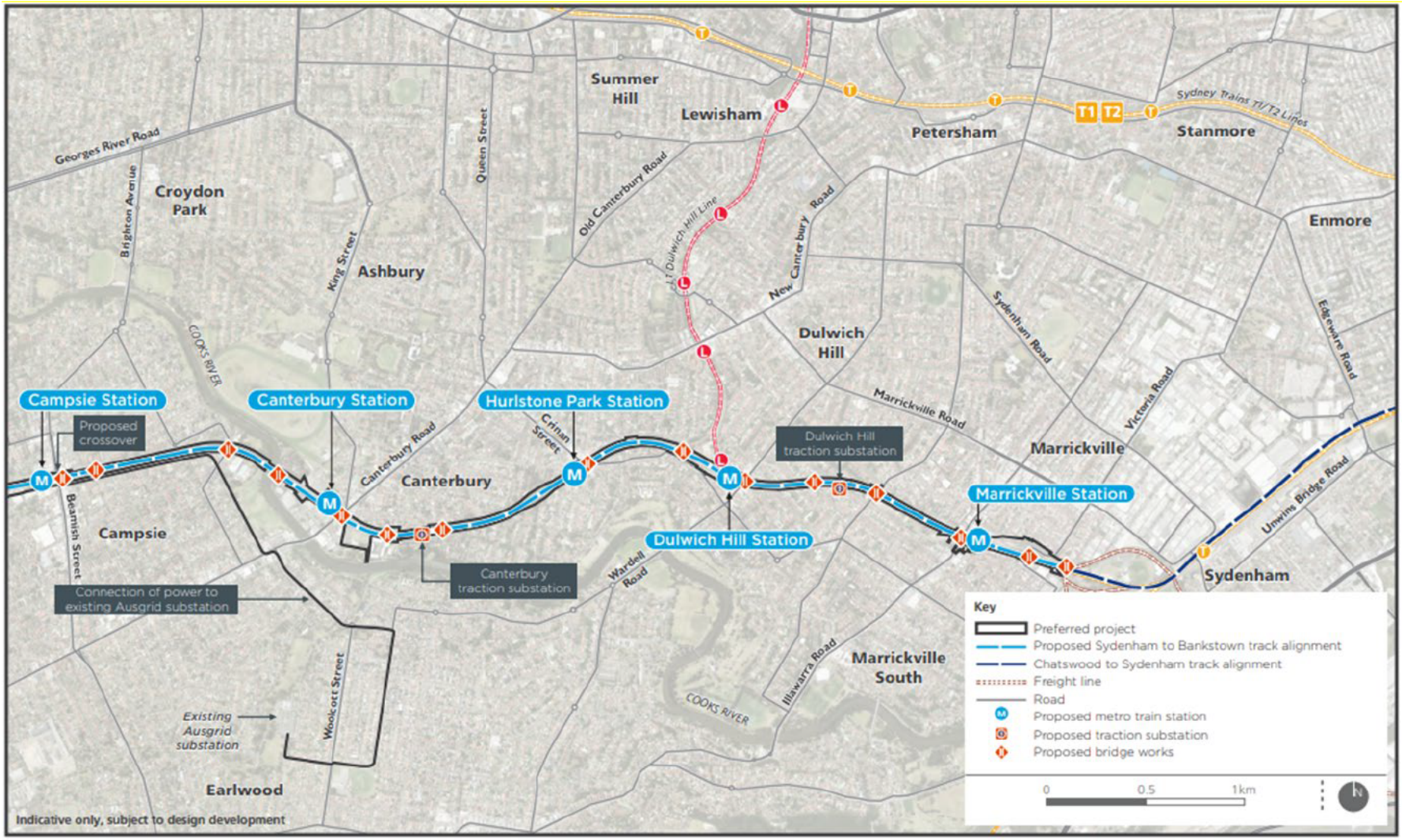


Figure 3: Sydney Metro (source: Sydney Metro City & Southwest - Sydenham to Bankstown - Submissions and Preferred Infrastructure Report, 2018)

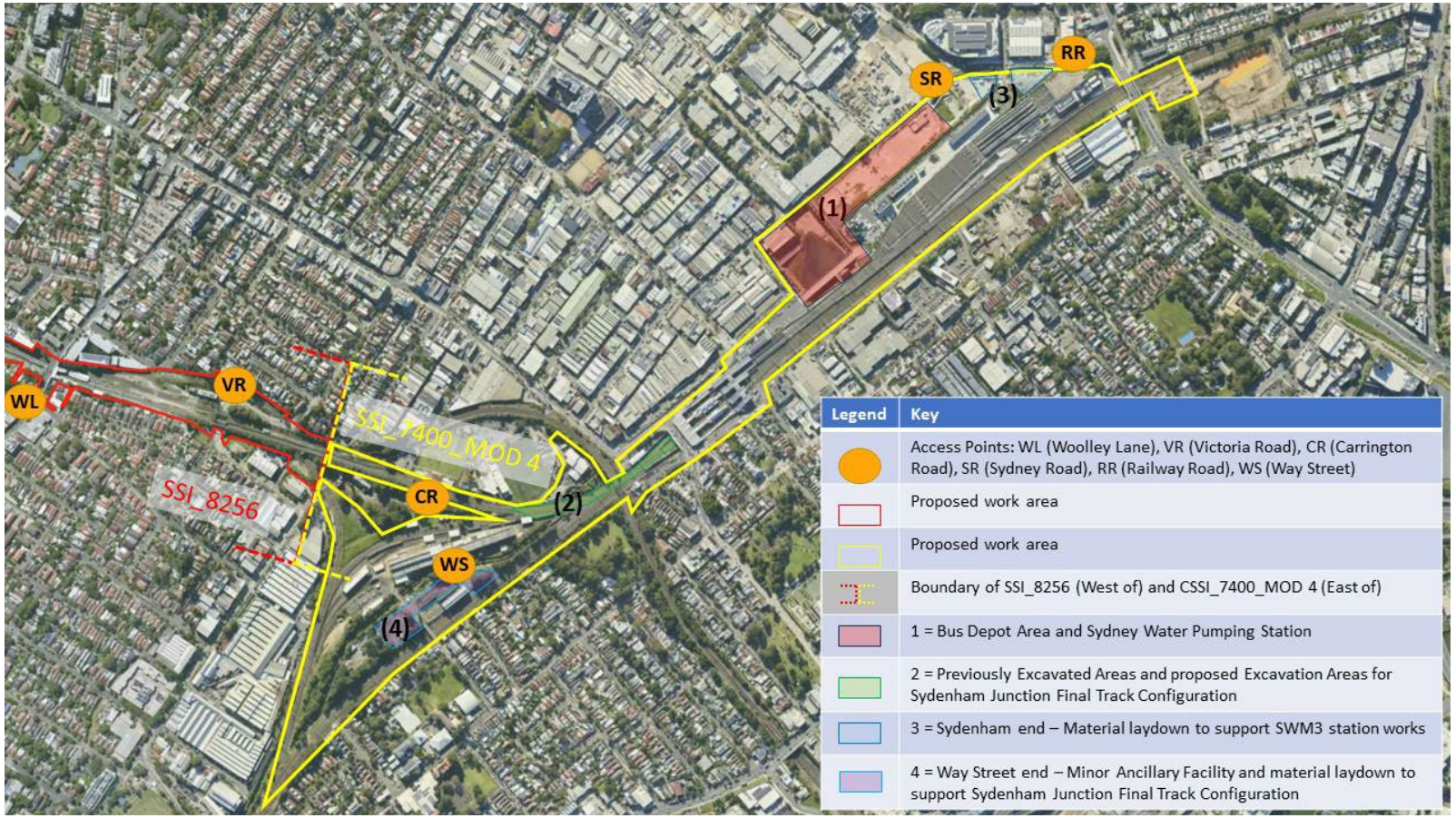


Figure 4: Depicts the proposed work area; including the existing boundary between CSSI_8256 and CSSI_7400_MOD 4 planning approvals and the proposed access points. Note: Track slab involves installation of platforms and key elements of the Metro, at the platform level for the operation of the Metro line. Whereas Track Re-conditioning involves the restoration of existing track. Area 1 (the Temporary Marrickville Bus Depot Area and Sydney Water Pumping Station) is excluded from the proposed change

Refer to Section 2.4.1 of this CEMP for context.

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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.

Table 3: Temporary Construction facilities

Temp Facility	EIS/SPIR reference to Compounds* or applicable CoA	Status and expiry
A17 Way Street Ancillary Facility and Laydown	A17	End of Project 2026
A19 Belmore Triangle Minor Ancillary Facility	A19	Currently not in use, however maybe reapplied for as required
A19 Punchbowl Minor Ancillary Facility (Access from The Boulevard, Punchbowl)	A19	Currently not in use, however maybe reapplied for as required
A17 Carrington Road Ancillary Facility and Laydown	A17	End of Project2026
A17 Belmore Triangle (Upper) Ancillary Facility and Laydown	A17	End of Project 2026
A1 Hurlstone Park Ancillary Facility	Compound 4	EIS Approved
A1 Canterbury Station Worksite	Worksite 9	EIS Approved
A1 Belmore Station Compound	Compound 10	EIS Approved
A1 Belmore Bridge Rd	Compound 13	EIS Approved
A1 Wiley Park Station Compound	Compound 4	EIS Approved
A19 Marrickville Ancillary Facility	A19	End of Project 2026
A19 Dulwich Hill Station	A19	End of Project 2026
A1 Lakemba Station Compound	Compound 15/16	EIS Approved
A1 Campsie Compound	Compound 9	EIS Approved
A16 Punchbowl Station	A19	End of Project 2026
A19 Way St Substation	A19	End of Project 2026
A16 Sydney Steel Road	A16	End of Project r 2026
A16 Murray Road laydown	A16	End of Project 2026
A19 Sydney Steel Road	A19	End of Project 2026

***Compounds as identified in Figure 9.1 Map 1 to 5, CSSI 8256**

Note: **Table 3** will only be updated with the 6 monthly review of the CEMP. The associated Checklists for each facility can be found on the project website. Minimal if any excavation would be required for the establishment of these temporary facilities.

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

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- 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.

Refer to Section 3.13 for further information.

1.2. Purpose of this CEMP

This Construction Environmental Management Plan (CEMP) outlines how JHLORJV and any Interface Contractor working with this plan will meet the environmental outcomes for the design and Construction of the Project. This will be achieved through the development and application of the relevant contract-specific Environmental Management Systems (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 Upgrade Staging Report, contractors including JHLORJV, TSOM and other Interface Contractors directly engaged by Sydney Metro will implement this plan and the environmental management requirements of the CEMF in line with the SWM3 column in *Table 5 CEMF Applicability to each Stage* and *Appendix A – Applicability of S2B CoAs to each Stage* of the Staging Report.

Table 4: Applicability of the CEMF to the Project outlines the applicability of the CEMF to the Project (and is extracted from Table 5 of the Staging Report Revision 8.3, September 2025).

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Table 4: Applicability of the CEMF to the Project

CEMF Environmental Management Category	SMEW	LW	SMC & Additional Works	EHVMT	S2B CEMP				
					MCL	DCP	HBW	TSOM	SWM3
Waste / Spoil / Recycling *	CEMP / SMP	CEMP-P	CEMP-P	CEMP-P	CEMP-P	CEMP-P	CEMP-P	N/A	CEMP-P
Groundwater	CEMP	CEMP-P	CEMP	CEMP-P	CEMP	CEMP	CEMP	N/A	CEMP
Traffic	CoA E47 CTMP	CoA E47 CTMP	CoA E47 CTMP	CoA E47 CTMP	CoA E47 CTMP	CoA E47 CTMP	CoA E47 CTMP	N/A	CoA E47 CTMP
Noise & Vibration	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	N/A	CEMP sub-plan
Heritage	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	N/A	CEMP sub-plan
Flora & Fauna / Biodiversity	CEMP-P	CEMP-P	CEMP-P	CEMP-P	CEMP-P	CEMP-P	CEMP-P	N/A	CEMP-P
Visual Amenity	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	N/A	CEMP sub-plan
Carbon & Energy	SMP sub-plan	SMP sub-plan	SMP sub-plan	SMP	SMP	SMP	SMP	SMP sub-plan	SMP sub-plan
Materials	SMP sub-plan	SMP sub-plan	SMP sub-plan	SMP	SMP sub-plan	SMP sub-plan	SMP sub-plan	SMP sub-plan	SMP sub-plan
Soil & Water	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	CEMP-P	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	N/A	CEMP sub-plan
Air Quality	CEMP-P	CEMP-P	CEMP-P	CEMP-P	CEMP-P	CEMP-P	CEMP-P	N/A	CEMP-P
Workforce Development	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	N/A	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)

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Figure 5: CEMF Applicability to the Project

Table 5: Guideline for the Preparation of Environmental Management Plans (DIPNR) compliance matrix provides the sections of the CEMP that show compliance with the requirements of the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004).

Table 5: Guideline for the Preparation of Environmental Management Plans (DIPNR) compliance matrix

Requirement	Document Reference
Introduction	Section 1
Project Description	Section 1.1
EMP Context	Section 1, Section 4
EMP Objectives	Section 1.4
Environmental Policy	Section 1.2
Environmental Management Structure and Responsibility	Section 4.4
Approval and Licensing Requirements	Section 3, Appendix B
Reporting	Section 4.11, Section 4.12.2,
Environmental Training	Section 4.6
Emergency Contacts and Response	Section 4.10, Appendix J
Risk Assessment	Appendix C, Appendix E
Environmental Management Activities and Controls	Aspect specific Sub-plans as per Section 5, Appendix E
Environmental Control Maps	Section 4.3.3, Appendix K
Environmental Schedules and Forms	Section 4.17.3, Appendix L
Environmental Monitoring	Section 4.11 and aspect specific Sub-plans as per Section 5
Environmental Auditing	Section 4.11.3
Corrective Action	Section 4.12.3
EMP Review	Section 4.183.18

The Minister's Condition of Approval C7 requires that the CEMP be endorsed by the ER and to be submitted to DPHI for approval. The CEMP will be submitted to the ER for endorsement prior to approval by DPHI.

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 DPHI:

- Construction 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 DPHI 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).

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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; Environmental Risk Action Plan):

- Biodiversity (Flora and Fauna Management);
- Groundwater;
- Air Quality; and
- Waste Spoil & Recycling.
- Delivery and Storage of Chemicals; Fuels and Oils including Dangerous Goods

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 JHLORJV and Interface Contractors comply with the Minister for Planning's Project Planning Approval SSI-8256;
- Ensure JHLORJV 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 DPHI 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 DPHI.

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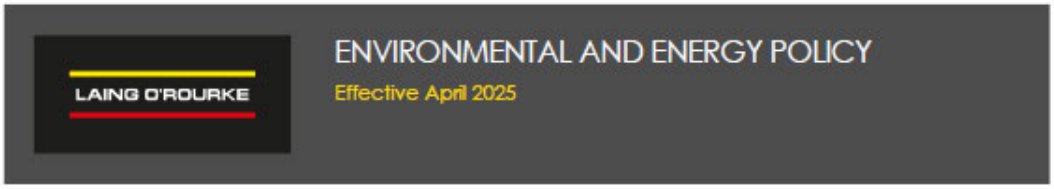
1.3. Environment and sustainability policy statement

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.

JHLOR and Interface Contractors maintain separate environmental policies. JHLORJV's contract specific environmental policy, in accordance with Section 3.3(d)(i) of the CEMF is shown below in Figure 6.

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ENVIRONMENTAL AND ENERGY

Laing O'Rourke is an engineering enterprise, focused on major construction projects and strategic programmes, delivering certainty for clients from the earliest engagement and throughout the project lifecycle. Through a focus on certainty of delivery, we will maintain an enduring and sustainable enterprise.

We are committed to protecting and enhancing the environment through implementation and continual improvement of our environmental and energy management systems. This policy sits alongside our sustainability and supply chain policies as part of our global policy framework, underpinned by our Global Code of Conduct.

Our commitment is to enhance environmental performance and energy efficiency through the implementation of leading practices and innovation throughout all of our operations, offices, and facilities, spanning the entire project lifecycle.

This policy will be realised by:

- Demonstrating leadership through our environmental agenda
- Complying with relevant legislation, our client, and environmental management system requirements, and regularly evaluating and reporting on our compliance obligations
- Preventing harm to the environment
- Proactively minimising environmental impacts, including direct and embodied carbon emissions and emissions intensity and providing energy-efficient/low-carbon assets for our clients
- Continually improving our environmental and energy performance through clear objectives, targets, and programmes
- Providing sufficient and competent resources to achieve our environmental and energy-related objectives and targets
- Pursuing opportunities in the design and sourcing of our products, services, and supply chain to reduce carbon emissions and improve energy efficiency in the delivery and operation of the assets we build
- Engaging with our stakeholders including clients, suppliers, regulators and industry bodies to address lifecycle aspects and minimise our impacts on the environment
- Improving resource efficiency through by applying the principles of a circular economy and reducing waste using the waste hierarchy
- Reducing our water consumption and improving water efficiency in all our operations
- Protecting, preserving and identifying opportunities to enhance biodiversity and land quality
- Communicating and addressing the risks and opportunities associated with the impacts of our activities, products and services
- Enhancing employee understanding of environmental sustainability by providing clear direction and stimulating cultural change
- Maintaining ISO 14001 certification for our principal businesses and ISO 50001 certification in the UK and progressing further certifications for our products and services as appropriate

The Board of Directors of Laing O'Rourke fully endorses this policy.

Ray O'Rourke KBE
Chairman

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Figure 6: Environmental policy

2. 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 6.

2.1. Key result areas and key performance indicators

The Environmental key result area is summarised within the contract as Schedule F6 – Performance and Compliance Incentive Payment Schedule and is structured with measures that will drive performance of project Activities by the contractors and value for money outcomes to Sydney Metro. The Environment, Sustainability and Communications and Stakeholder Management KPIs are detailed in Table 6.

Table 6 - Environment, Sustainability and Communications and Stakeholder Management KPIs

KPI no.	KPI	Measures	Achievement Threshold
Environmental management (Quarterly)			
1	Evidence of leadership to proactively identify and manage environmental performance	a) Leadership attendance rate at such environmental inspections as may reasonably be notified by the Principal. b) Leadership attendance rate at such environmental training events as may reasonably be notified by the Principal (excl. toolbox talks and inductions). Personnel required to attend to be nominated by the Principal (acting reasonably).	AU HSE Leadership Engagement Inspection (as per Intelex record) with an average of two per month equalling 100 points for actual attendance. Environmental Training, one session per on average per quarter (as per Intelex record)
2	Quality of relationships with Environmental Representative, EPA officials and Heritage Council	Score from quarterly survey with Environmental Representative, EPA officials and Heritage Council (as applicable). Principal to determine the content and scoring of each survey in its absolute discretion. The SWM3 Contractor bears the responsibility for carrying out the survey.	The SWM3 Contractor bears the responsibility for carrying out the survey.

2.2. Environmental objectives and targets

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.

Environmental Risk Action Plans relating to significant environmental issues are contained in within the Environmental Procedures (Appendix E).

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In accordance with CoA-C1, the CEMP must detail how performance outcomes, commitments and mitigation measures from the Planning Approval and associated documentation are to be implemented and achieved during Construction. The compliance approach to be utilised by Contractors implementing this CEMP is mapped within the Compliance Matrix in Appendix A. It is noted that performance outcomes, commitments and mitigation measures relating to environmental aspects that have a corresponding Sub-plan, as per the requirements of CoA-C3 and the Staging Report, are addressed within the specific Sub-plans. Refer to the S2B CNVMP, CSWMP and CHMP.

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Table 7: Objectives and targets

Objective	Target	Management measure
Biodiversity 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.	The project is designed to minimise impacts on biodiversity. Where practicable, the design minimises the need to clear vegetation. Potential impacts on biodiversity are managed in accordance with relevant legislation, including the EP&A Act, *Biodiversity Conservation Act 2016* (BC Act) and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The biodiversity outcome is consistent with the Framework for Biodiversity Assessment (OEH, 2014a).	Compliance Monitoring and Reporting Program
Flooding and hydrology 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.	Construction is undertaken in a manner that minimises the potential for adverse flooding impacts, through staging of works and the implementation of mitigation measures. Construction compounds and work sites are laid out such that flows are not significantly impeded. The project maintains or reduces flood levels within and adjacent to the rail corridor. The project avoids long term impacts to surface water. Opportunities to reuse water resources are considered during the design process. The use of water during Construction is minimised.	Management of soil and surface water will be undertaken throughout the delivery of the Project in accordance with the CSWMP.
Heritage 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. 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.	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. The design and mitigation strategies are reviewed by the Sydney Metro Design Review Panel. Impacts on heritage are managed in accordance with relevant legislation, including the EP&A Act, the *Heritage Act 1977*, and relevant guidelines. The potential impacts identified are mitigated by the mitigation measures provided.	Management of heritage will be undertaken throughout delivery of the project in accordance with the CHMP.

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Objective	Target	Management measure
Noise and vibration – amenity Construction noise and vibration (including airborne noise, ground borne noise and blasting) are effectively managed to minimise adverse impacts on acoustic amenity. 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.	The project will minimise impacts to the local community by: controlling noise and vibration at the source controlling noise and vibration on the source to receiver transmission path controlling noise and vibration at the receiver implementing practicable and reasonable measures to minimise the noise and vibration impacts of Construction activities on local sensitive receivers.	Management of noise and vibration impacts will be undertaken throughout delivery of the project in accordance with the CNVMP.
Noise and vibration – structural 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. Increases in noise emissions and vibration affecting environmental heritage as defined in the **Heritage Act 1977** during operation of the project are effectively managed.	The project minimises impacts to structures by: controlling vibration at the source controlling vibration on the source to receiver transmission path implementing practicable and reasonable measures to minimise vibration impacts of Construction activities on structures.	Management of noise and vibration impacts will be undertaken throughout delivery of the project in accordance with the CNVMP.
Socioeconomic, land use and property The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities. 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.	The project minimises impacts to the local community, community infrastructure, and businesses. Impacts to existing land use and properties are minimised. The project is appropriately integrated with adjoining land uses, and access to private properties is maintained.	Management will be undertaken in accordance with the REMMs and CoA's.
Soils The environmental values of land, including soils, subsoils and landforms, are protected. Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.	Site-specific soil characteristics are taken into consideration during detailed design and Construction. Any contamination is managed in accordance with relevant regulatory requirements. Any soil waste is assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).	Management of soil and surface water will be undertaken throughout the delivery of the Project in accordance with the CSWMP.
Sustainability The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources. Conservation of natural resources is maximised.	Sustainability considerations are integrated throughout design, Construction, and operation. The project would be carried out in accordance with the Sydney Metro	Refer to Sydney Metro Sustainability Management Plan and JHLORJV's Sustainability Management Plan.

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Objective	Target	Management measure
	City & Southwest Sustainability Policy.	
Traffic, transport and access Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. **The safety of transport system customers is maintained.** Impacts on network capacity and the level of service are effectively managed. Works are compatible with existing infrastructure and future transport corridors.	Impacts to traffic and transport are minimised. Motorist, pedestrian and cyclist safety will be maintained or improved. Safe access to properties is maintained.	Management will be undertaken in accordance with the CTMP, REMMs and CoA's.
Place making and urban design The project capitalises on opportunities to improve place, character and quality of the surrounding build and natural environment (including adjoining public spaces). The project contributes to the accessibility and connectivity of communities.	The project is designed to have regard to the surrounding landscape and visual environment and to minimise the potential for visual impacts. The project is visually integrated with its surroundings. The stations provide a sense of place, and contribute positively to the surrounding urban environment. The design takes into account future planning for the Sydenham to Bankstown Corridor Urban Renewal Strategy. Vegetation providing screening to the rail corridor is retained where practicable.	Management will be undertaken in accordance with the REMMs and CoA's.
Water – quality 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).	Impacts to water quality during Construction and operation are minimised. 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). The project would protect or contribute to achieving the Water Quality Objectives, during Construction and operation. Construction water quality discharge will comply with the requirements of the Water Quality Monitoring Program.	Management of soil and surface water will be undertaken throughout the delivery of the Project in accordance with the CSWMP.
Utilities The project is designed, constructed and operated to minimise impacts to utilities and provision of such to the public.	Impacts to utilities during Construction are minimised. The design takes into account the input of utility providers and owners.	Management will be undertaken in accordance with the REMMs and CoA's as well as the Utilities

Objective	Target	Management measure
		Management Strategy.

2.3. Sustainability objectives and targets

S2B is integrating sustainability across our entire project offering, ensuring all team members understand the contribution of their role to the project's sustainability success. Sustainability is part of the shared team vision for project success and ways of working, rather than a bolt-on feature delivered separately by the Sustainability team.
The project aligns with NSW Govt objective as per Table 8 - NSW Govt Sustainability Objectives below.

Table 8 - NSW Govt Sustainability Objectives

Objective	Target	Management measure
Sustainability The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources. Conservation of natural resources is maximised.	Sustainability considerations are integrated throughout design, Construction, and operation. The project would be carried out in accordance with the Sydney Metro City & Southwest Sustainability Policy.	Refer to Sydney Metro Sustainability Management Plan and JHLORJV's Sustainability Management Plan.

The Environmental Management Documents (including this CEMP and sub-plans) will include sustainability outcomes that will be evidenced in IS Design and As Built Rating tracking that are managed by the Environmental team. Each sub-plan will link to sustainability rating credits and detail criteria for achieving value and detailed in the corresponding Sustainability Management Plan and sub-plans.

Table 9 - Management Plan IS Requirements references the relevant IS rating requirements applicable for the project and each environmental plan. The purpose of presenting this table is to outline all IS rating credits which will be integrated into the relevant environmental project plans and to use these requirements to help inform the environmental strategic approach and management solution for the project. Section 3.9 of this plan also provides more details.

Table 9 - Management Plan IS Requirements

Plan	Relevant IS requirements
Construction Environmental Management Plan	Dis-1 Receiving water quality; Dis-2 Noise; Dis-3 Vibration; Dis-4 Air quality
Ancillary Facility Management Plans	Ene-1 Energy Efficiency & Carbon Reductions, Ene-2 Renewable Energy, Wat-1 Avoiding water use; Wat-2 Appropriate use of water sources, Urb-1 – Site Planning, Urb 2- Implementation, Lan-4 Flooding Design
Air Quality Management Plan	Env-4 Air quality
Flood Emergency Management Plan	Cli-1 Climate change risk assessment; Cli-2 Adaptation Options
Flora and Fauna Plan	Eco-1 Ecological protection and enhancement
Groundwater Management Plan	Env-1 Receiving water quality

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Plan	Relevant IS requirements
Heritage Management Plan	Her-1 Heritage Protection and Enhancement, Her 2
Noise and Vibration Management Plan	Env-2 Noise; Env-3 Vibration
Spoil Management Plan	Rso-2 Management of Contaminated Material; Rso-3 Management of Acid Sulphate Soil; Rso-4 Resource recovery and management, Lan-3 Contamination and remediation
Surface Water Management and Monitoring Plan	Env-1 Receiving water quality; Wat-1 Avoiding water use; Wat-2 Appropriate use of water sources

3. Legal and approval requirements

3.1. Environmental planning approval process background

As discussed in Section 1, in September 2017 an EIS for the S2B Project was placed on public exhibition for a period of 56 days (eight weeks). A SPIR for the S2B Project was prepared and placed on public exhibition in June 2018 for a period of 28 days (four weeks). A Submissions Report for the S2B project was prepared and publicly released in September 2018. The S2B 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.

3.1.1. Legal and Compliance Obligations

Mandatory compliance obligations and requirements relevant to the project are summarised below. JHLORJV and Interface Contractors will maintain and implement a systematic approach to determining compliance obligations. The Compliance Obligations Environmental

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System Requirement LOR's HSEMS outlines a suitable process to determine legal and other mandatory requirements.

All personnel associated with the project will comply with all relevant requirements including:

- Laws – Acts, regulations, policies, etc.
- Environment Protection Licence and permits
- Development consents
- Relevant industry standards / codes
- Contract requirements
- Other compliance obligations outline in this CEMP, including any voluntary compliance obligations.

The SWM3 Project will be carried out in accordance with the following consents;

- The Sydney Metro City & Southwest – Sydenham to Bankstown - Environmental Impact Statement, dated 7th September 2017;
- The Sydney Metro City & Southwest – Sydenham to Bankstown – Submissions and Preferred Infrastructure Report June 2018;

  The Sydney Metro City & Southwest – Sydenham to Bankstown – Instrument of Approval SSI 8256, dated 12th December 2018, superseded by CSSI 8256 MOD 1 determined 22nd October 2020Sydney Metro City & Southwest – Sydenham to Bankstown Upgrade Staging Report (Sydney Metro, 2019).
- The Sydney Metro Construction Environmental Management Framework v3.2;
- Department's Guideline for the Preparation of Environmental Management Plans. Appendix A1;
- The Overarching Stakeholder and Community Involvement Plan (Sydney Metro Community Consultation Strategy (CCS));
- The Sydney Metro Construction Noise and Vibration Strategy (including out-of-hour works protocol)
- City and Southwest – Sydenham to Bankstown Compliance Monitoring and Reporting Program Report (Sydney Metro, 2019).

Full details of the relevant legislative instruments are provided in Appendix B.

Licences, permits and approvals are outlined in Sections 3.2, 3.6, 3.7 & Appendix B in the Project Permits and Approvals Register. The register is to be developed, at or prior to, the commencement of the project to outline the full scope of the project's requirements for Government authority approvals. The register is to be reviewed in conjunction with the 6 monthly Management Review as outlined in Section 4.18 or where there has been a change to relevant legislation. The Register is to be reviewed and updated as the project progresses and compliance with the relevant conditions reported. Compliance conditions relating to items listed on the Permits and Licenses Register are incorporated into this CEMP. Specific details and controls are included in the associated Sub-plans and Environmental Risk Action Plans (ERAPs). Sub-plans and ERAPs are intended to document the requirements and site control or management measures associated with the relevant aspect.

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A copy of relevant Permits, Licences and any development approvals relevant to JHLORJV's activities will be kept on site.

3.2. Approval and licencing requirements

The key legislative and approval requirements for the works are outlined in 6. Further detail is provided in Appendix B.

Table 10: Approval / licence requirements

Regulatory authority	Approval / licence required for this Project
Department of Planning, Housing and Infrastructure (DPHI)	Project Planning Approval granted under Division 5.2 of the *EP&A Act* (no. SSI-8256) Approval of reports, studies and plans as required by the Project Planning Approval.
NSW Environmental Protection Agency (EPA)	*Protection of the Environment Operations Act*, 1997, Schedule 1, Activity 35-Railway activities - railway infrastructure construction
Commonwealth Department of Environment	The *Environment Protection and Biodiversity Conservation Act 1999* (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 *Roads Act 1993*, JHLORJV 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 *Sydney Water Act 1994*, JHLORJV will obtain prior approval to connect to the sewer, or discharging to sewer if required under a Trade Waste Agreement.

3.3. Relevant legislation

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

3.4. Additional environmental assessment

Changes to the project may require an assessment to determine consistency with the Project Approval and Environmental Documents. This assessment will 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;

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- 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 will 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 will require approval from the Sydney Metro Director of Environment, Sustainability and Planning.

Consistency Assessments relevant to JHLORJV's work will be made available on JHLORJV's website. Interface Contractors will ensure the obligations related to provision of publicly available information is managed by their teams. Consistency Assessments will be provided to the ER for information.

A similar process is followed for Environmental Review's, which are applicable for minor design changes which are consistent with the conditions of approval and would have negligible impacts on the community and/or the environment. The Environmental Review is also an assessment process that will be approved by Sydney Metro Planning Manager and made available on JHLORJV's or the Interface Contractors websites and provided to the ER for information.

3.4.1. Current and applicable Consistency Assessments to SWM3 Scope

Sydney Metro have prepared three Consistency Assessments in the lead up to the transition from the construction phase to the operational phase of the S2B project as follows;

- Consistency Assessment: Sydenham to Bankstown - Final track configuration works to complete the connection between Marrickville Station and Sydenham Station.
- Consistency Assessment: Sydenham to Bankstown - Staging of the Bankstown Station works and extension of the final possession

Consistency Assessment: Sydenham to Bankstown - Final track configuration works to complete the connection between Marrickville Station and Sydenham Station.

The purpose of the Planning and Consistency Assessment (PACA) is to conduct works outside of the CSSI 8256 Project Area and to present a more detailed understanding of the final track configuration/corridor works between Marrickville Station and Sydenham Station and demonstrate how this scope of works is consistent with the works undertaken under CSSI_8256 Planning Approval.

Both the Chatswood to Sydenham and Sydenham to Bankstown projects include corridor works to connect the two projects at a location near Meeks Road (Figures 2 and 3 of this CEMP). Given that the final track configuration/corridor works must be completed in a consistent manner across the C&SW alignment and do not clearly start and stop at the construction boundaries identified in the planning approvals, Sydney Metro is proposing for the S2B contractor to deliver the Corridor works under one planning approval (CSSI_8256) – delivering all the necessary corridor works between Marrickville and Sydenham stations to connect the projects, including works in project areas across both the CSSI_7400 and CSSI_8256.

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A HIA has been prepared as part of the PACA to assess the impacts that the proposed S2B works would have on heritage items and potential Aboriginal and non-Aboriginal archaeological resources within the junction area (between Marrickville and Sydenham station to Bedwin bridge) to connect the projects, and to provide archaeological and heritage mitigation measures for the works where necessary.

The HIA identified;

- low Non-Aboriginal Archaeological Potential and
- low Aboriginal Archaeological Potential, however moderate and high Aboriginal Archaeological Potential where natural soils may be exposed. Excavation directs direction will be sought prior to conducting works in moderate to high potential areas.

The HIA generally recommends the works are to be managed under the Sydney Metro Unexpected Heritage Finds Procedure. This approach would align with the recommended mitigation measures as outlined in the Addendum to the Sydney Metro City and Southwest – Chatswood to Sydenham: Historical Archaeological Assessment and Research Design Report and Sydney Metro City and Southwest – Chatswood to Sydenham: Aboriginal Cultural Heritage Assessment Report.

Consistency Assessment: Sydenham to Bankstown - Staging of the Bankstown Station works and extension of the final possession

The purpose of this Planning and Consistency Assessment (PACA) is to propose a Staged delivery of the Bankstown Station works and an extension of the final possession to up to 12 months starting in late 2024.

The EIS and Temporary Transport Strategy (TTS) identified a number of different types of rail possession periods – compromising of normal weekend maintenance possession periods with longer possession periods during school holidays. The possession periods that were assessed in the EIS and TTS included school holiday possession periods (two (2) weeks in July and six (6) weeks in December/January for five (5) years), four (4) additional weekend possessions per year (in addition to the standard Sydney Trains possessions) and a final possession of up to six (6) months.

It is acknowledged in the EIS and SPIR that the indicative possession program including the proposed 6 month shut would be reviewed during tendering, detailed design and construction planning to ensure the available possessions are sufficient to complete the works and that the overall impacts to the community are reduced as far as possible. The timing and duration of the final possession was not confirmed in the EIS and SPIR and would be dependent on the system operators' testing and commissioning processes.

The PACA also proposes a staged delivery of the Bankstown Station and Precinct works. Stage 1 works would enable the operation of the metro line between Sydenham and Bankstown (proposed completion mid to late 2025) and a final stage (Stage 2) would enable completion of the full scope of the station works at Bankstown (2026). Stage 2 would utilise an existing compound at the southern end until the completion of the works. It is anticipated that about three weekend possessions of the new Sydney Metro line would be required to complete the Stage 2 works at Bankstown Station, which would form part of the scheduled routine maintenance possessions to support the approved operations of Sydney Metro.

Further information on these Consistency Assessments can be found on the Sydney Metro Document Library https://www.sydneymetro.info/documents

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3.5. Contract Requirements

Laing O'Rourke is responsible for ensuring compliance with the key commercial and legal obligations as they relate to the planning and environmental approvals. Environmental Contract requirements are described in the following documents:

- Sydney Metro City & Southwest – Schedule 4 – Planning Approval
- Sydney Metro City & Southwest - Scope of Works and Technical Criteria - Appendix F03- Environment

The process for implementing and tracking contract requirements is detailed in the Project Environmental Approvals Obligations Register.

3.6. 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 7 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 11: Applicable standards and codes

Standard / Guideline	Relevant authority
ISO 14001 Environmental Management Systems – Requirements with Guidelines for use	International Organisation for Standardization
Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2001)	DPHI
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
Managing Urban Stormwater: Soil and Construction (Landcom, 2008)	Landcom
NSW EPA **Waste Classification Guidelines**, 2014	NSW EPA
AS 1742.3 Manual of uniform traffic control devices Part 3: Traffic control for works on roads	RMS (TfNSW)
RMS Traffic Control at Worksites Manual	RMS (TfNSW)
Australian and New Zealand Guidelines for Fresh and Marine Water Quality	NSW EPA
AS/ NZS 1940: 2017 - The Storage and Handling of Flammable and Combustible Liquids	Australian Standards

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3.7. Environment Protection Licence

The SWM3 portion of the S2B works will be delivered in accordance with the LOR EPL 21147, under Scheduled Activity 33; Railway Activities – Railway Infrastructure Construction.

It is noted that this EPL also includes the Sydenham Station Junction works, occurring under the Sydney Metro City and Southwest - Chatswood to Sydenham Planning Approval (CSSI_7400), refer to section 3.4.1 of this plan for more information. Note that SWM3 will be delivered under one planning approval (CSSI 8256 only).

Compliance with all relevant licence conditions will be tracked and monitored.

For any works being undertaken under EPL 21147, if an inconsistency is identified (with the planning approval), JHLORJV will consult with Sydney Metro and the ER to determine whether the works can be carried out through an approved path. Should a variation to the licence be required, JHLORJV will consult with the EPA.

It is noted that Sydney Metro has engaged interface contractors to undertake works within the EPL 21147 Project Premise Boundary and under S2B as the Principal Contractor.

These interface contractors have an obligation to implement this CEMP and subplans (or an equivalent) and comply with the S2B EPL.

In the event of any uncertainty on the implementation of this CEMP and Sub Plans or compliance issues with the S2B EPL, the IC will reach out to the S2B's environmental manager for guidance. The S2B Environmental Manager will communicate the expectations of both the management plans and licence to the IC's.

Refer to Section 4.5 for Interface Contractors relationship with S2B.

The environmental authority or licence includes specific minimum requirements which are addressed within this EMP through the Environmental Procedures and specifically included in ERAPs. These will be addressed and implemented by JHLORJV as the project progresses.

The following administrative conditions apply to this project:

- All activities on the site must be undertaken in a competent manner.
- Plant and equipment must be operated and maintained in a proper and efficient manner.
- Pollution complaints must be recorded.
- Information must be captured and collated for the completion of the EPL annual return.

A draft of each annual return referred to in condition 6 of the *Protection of the Environment Operations Act 1997* (POEO Act) licence must be completed 10 business days prior to the date on which it must submitted. The annual return must be reviewed by the Project Leader and the Environmental Leader. The annual return must be completed and submitted within 60 days of the anniversary date.
A copy of relevant Permits, Licences and Development Consents will be kept on site as controlled documents in the project's Document Management System.

Note: No elements of the SWM3 Project's scope will require the use of the Sydney Trains' EPL 12208.

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3.8. Project Environment and Sustainability Management System

LOR maintains an industry-leading HSEMS that is applied across all operations and is accredited by Sci Qual International to ISO 14001:2015 Environmental Management Systems – Requirements with Guidance for Use. Note that ISO 14001:2015 and ISO 14001:2016 have been identified as identical in technical content by SAI Global.

The HSEMS is available to access via https://lorhsems.com. The system includes three core environmental components: Environmental System Requirements, Environmental Primary Standards and Severe Environmental Risk.

The LOR is currently certified (No. 4749) with SciQual.

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SCI QUAL INTERNATIONAL

Environment Management Systems

Certificate of Registration

Laing O'Rourke Australia Construction Pty Limited

LORA National Pty Ltd

Laing O'Rourke Australia PM Pty Ltd

Level 21, 100 Mount Street, North Sydney NSW 2060
Level 2, M & A Building, 825 Ann Street, Fortitude Valley QLD 4006
Level 24, IBM Centre, 60 City Road, Southbank VIC 3006
Level 13, 197 St Georges Terrace, Perth WA 6100

In recognition of the implementation of a management system conforming to

ISO 14001:2015

The Scope of Certification covers the following activities:

Processes associated with the design, construction and project management of multi-discipline engineering construction and building projects including rail; commercial, residential and special purpose buildings; roads and bridges; gas; water and associated infrastructure and civil works.

Certificate No.	Date of Issue	Certification Date	Expiry Date
4749	28 September 2023	6 September 1991	30 October 2026

Alain Etchegaray
GENERAL MANAGER

Signed for and on behalf of
Sci Qual International Pty Ltd

JAS-ANZ

Level 7, 10 Felix Street, Brisbane Qld 4000

The certificate of Registration, which remains the property of Sci Qual International Pty Ltd, is granted subject to the Regulations governing the certification scheme operated by Sci Qual International Pty Ltd and in respect of goods or services described in the schedule hereto, bearing the same number as this certificate.

All works carried out on the site (including works carried out by sub-contractors and others) will be in accordance with:

- Requirements as detailed in the contracts with Sydney Metro
- LOR's environmental requirements, as detailed in the HSEMS
- ISO 14001:2015 Environmental Management Systems
- the Project's compliance obligations including mandatory and voluntary requirements (including Policies).

This CEMP references relevant parts of the LOR environmental management system and incorporates the additional elements necessary to satisfy the Client's environmental system requirements. An outline of environmental requirements from the LOR HSEMS is provided below.

Environmental Requirements







Laing O'Rourke > Environmental Requirements

Environmental management is paramount to all our business activities and we are committed to the protection and enhancement of the environment. Our approach is driven by the commitment to our Environmental Policy.

It is displayed in each workplace and personnel are made aware of the policy, commitments, associated roles and responsibilities, and their ability to influence environmental outcomes through their activities.

Our Environmental Objectives are linked to the Environmental Policy and have been developed to improve environmental performance. The key environmental issues considered include:

- Sustainable use of resources
- Minimising impacts to water, air and land from operations
- Meeting or exceeding the environmental performance objectives of clients
- Meeting or exceeding stakeholder expectations of our environmental performance
- Understanding and delivering on compliance obligations

The Environmental Management System applies to the full scope of business activities over which we have the ability to control or influence with due consideration to the life cycle perspective and stakeholder relationships. When considering the level of influence and potential environmental outcomes, the business ensures that positive and negative effects on the environment are assessed as they relate to organisational stakeholders which include:

- Our clients on construction projects undertaken by the business
- The communities in which we work
- Regulatory authorities relating to environmental management and environmental approvals and compliance
- Financiers
- Our supply chain partners
- Our construction industry peers and partners

The system is certified to ISO 14001 and addresses the environmental management activities associated with the project lifecycle. Refer to SR Life Cycle Perspective for more information. Responsibilities for implementing the environmental system are defined in organisation charts, job descriptions, Environmental Management Plans and other organisational procedures.







3.9. SWM3 Sustainability Requirements

Sustainability is crucial for protecting the environment during construction. By integrating sustainable practices, construction projects can significantly mitigate their environmental impact, conserve natural resources, and promote ecological balance. The following requirements are SWM3 contractor sustainability contractual requirements and requirements from the ISC Sustainability rating.

3.9.1. SWTC Sustainability Contractual Requirements

This section contains the sustainability requirements that the SWM3 contractor must comply with during the SWM3 contractor activities. This includes the Appendix B07 requirements relating to the design and construction elements of the SWM3 works.

Table 12 SWTC Sustainability Contractual Requirements

Category	Deed Clause	Contract Wording
Scope	1.2 (a)	F. waste and materials: Recycle or reuse 90 per cent of recyclable construction and demolition waste. Recycle or reuse 60 per cent of office waste during the construction phase. Recycle or reuse 80 per cent of the waste generated during operations. Recycle or reuse 65 per cent of office waste during operations.
Scope	1.2 (a)	H. biodiversity conservation: Minimise vegetation clearing. Native landscaping targets to be established.
Scope	1.2 (a)	I. pollution control: Zero major pollution incidents.
Water efficiency	2.4.1 (a)	(a) The SWM3 Contractor must minimise water demand including total water consumption and potable water consumption during the operations phases by: (i) using water efficient controls, fixtures and fittings; (ii) harvesting rainwater where feasible; (iii) using water from recycled water networks where available; and (iv) collecting, treating and reusing stormwater and wastewater, where feasible.
Water efficiency	2.4.1 (b)	(b) The SWM3 Contractor must not use potable water as a substitute for non-potable water where on-site of local sources of non-potable water are suitable for the SWM3 Contractor's Activities and are available.
Water sensitive urban design	2.4.2 (a)	(a) The SWM3 Contractor must adopt an integrated approach to urban water cycle management during design and construction to minimise impacts on stormwater quality.
Waste	2.5.1 (a)	(iii) sufficient on-site storage space for the safe storage of recyclable waste and general waste prior to collection for treatment and disposal.

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Category	Deed Clause	Contract Wording
Waste	2.5.1 (b)	(b) The SWM3 Contractor must: (i) minimise the generation of waste; and (ii) demonstrate waste minimisation, recycling and resource recovery through delivery refinement, construction planning and construction methods.
Waste	2.5.1 (f)	(f) The SWM3 Contractor must avoid the production of hazardous waste where practicable.
Spoil management	2.5.4 (b)	(a) The SWM3 Contractor must identify and implement initiatives to both reduce spoil quantities which will be generated during the performance of the SWM3 Contractor's activities and beneficially reuse 100% of reusable spoil, including topsoil. (b) Beneficial reuse of spoil must be in accordance with the following spoil reuse hierarchy, in order of preference: (i) within the project; (ii) environmental works; (iii) other development projects; (iv) land restoration; and (v) landfill management.
Spoil management	2.5.4 (c)	(c) The SWM3 Contractor must utilise or reuse appropriate site-won materials onsite.
Biodiversity conservation	2.6 (a)	(a) The SMW3 Contractor must identify and implement initiatives for biodiversity enhancement and enhancing habitat connectivity.
Biodiversity conservation	2.6 (b)	(b) The SWM3 Contractor must minimise clearance of vegetation, particularly native vegetation.
Pollution control	2.7 (a)	(a) The SWM3 Contractor must identify and implement pollution control initiatives in design and construction which target zero major pollution incidents.

3.9.2. Infrastructure Sustainability Council Requirements

The Infrastructure Sustainability (IS) rating scheme has been developed by ISC, the Infrastructure Sustainability Council. The IS rating scheme evaluates sustainability initiatives and potential environmental, social and economic impacts of infrastructure projects and assets. The Project is required to achieve an "Design & As-built" ISC Rating Scheme (V1.2) rating of at least 65 for the constructed SWM3 Works. Below is the list of ISC requirements related to the Project CEMP.

- Man-4: Inspections and Audits:

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  - At least 90% of weekly internal sustainability inspections of site management must be completed.

- Was-1: Waste Management
  - Waste monitoring and management must be reviewed or audited annually by a suitably qualified professional.
  - Auditing of waste to final destination must be undertaken at least 6 monthly for construction.
- Was-2: Diversion from Landfill:
  - Spoil - Uncontaminated excavated clay, gravel, sand, soil or rock that is not mixed with any other type of waste and resulting from construction and demolition activities.
- Lan-3: Contamination and remediation
  - Site assessment follows the recommended approach in Schedule A 'Recommended general process for assessment of site contamination' of National Environment Protection (Assessment of Site contamination) Measure 1999. Refer to Appendix N: S2B Contamination Management Strategy.
  - Remediation options are identified and selected using a sustainability hierarchy.
- Dis-4: Air quality requirements
  - Measures must have been implemented to minimise adverse impacts to local air quality during construction and operation have been identified and implemented. Please refer to Appendix E: Procedure 3: Environmental Risk Action Plan-Air Quality
  - Monitoring of air emission and/ or air quality is undertaken at appropriate intervals and in response to complaints during construction. Please refer to Appendix E: Procedure 3: Environmental Risk Action Plan-Air Quality
  - Demonstrating no recurring or major exceedances of air emission or air quality goals related to the Project Works.
- Dis-4: Air quality goals
  - The objectives for air quality align with national guidelines, National Environment Protection Measures (NEPM 2003). The criteria for dust emissions outlined in Table 9, apply to the Project, and adhere to the national reporting standards established by the National Environment Protection (Ambient Air Quality) Measure (AAQ NEPM) as reported by the Department of the Environment in 2016. The NSW EPA has established impact assessment criteria for PM10 and PM2.5 to evaluate the potential health implications of particulate matter levels. These criteria are to be applied at the closest existing or potential future sensitive receptors off-site. They consider the total concentrations, whether measured or forecasted, arising from both construction-related sources and pre-existing air quality conditions.

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Air quality measurements for the project should be assessed in accordance with the goals detailed in Table 13, considering both 24-hour and annual average periods.

Table 13: SWM3 dust emission goals

Pollutant	Averaging Period	Maximum Concentration
Particles as PM_{10}	• 24 - hours • Annual	• 50 µg/m3 • 25 µg/m3
Particles as $PM_{2.5}$	• 24 - hours • Annual	• 25 µg/m3 • 8 µg/m3

- Dis-4: Air quality exceedances
    - Exceedances are measured air emission or air quality levels above the goals due to construction activity. Recurring exceedances are defined as more than two of a similar type within a 12-month period. Major exceedances are defined as exceeding the air emission or air quality goals by more than 50%.
- Dis-4: Air quality targets

SWM3 Project (including BAC portion) contains minimal surface works within the rail corridor and no major earthworks are required. Improper stockpiling of materials and wastes may contribute to airborne dust levels. However, as earthworks, stockpiling and vehicle movements are scope limited, these impacts are expected to be localised to the Bankstown Station works.

As a precautionary measure, quantitative air quality monitoring via a Sitehive unit, will be employed at Bankstown Station, Bankstown Station Depot Place and Belmore Triangle. The monitoring data obtained through these monitors can be extracted and reviewed by the project.

If the goals outlined in Table 13 are exceeded, a review of the monitoring data would be conducted to determine if the exceedance is attributable to the project or has another cause. The following methods may be employed to conduct this review:

- Determine if the exceedance was an isolated incident at one site.
- Analyse wind speed and direction during the time of the exceedance to establish if prevailing winds were directing emissions from the project towards the monitoring stations
- Utilise the wind data to explore if the exceedance could have stemmed from nearby activities not associated with the project, such as other construction operations.
- Examine information from additional monitoring stations within the Department of Planning and Environment's (DPE) network, such as those at Lidcombe and Chullora, alongside online resources, to determine if a regional

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occurrence, like a dust storm or bushfire, led to heightened levels of particulate matter.

- Flora & Fauna ERAP:
    - As part of the Contract and MR-Sy requirements, JHLORJV must minimise vegetation clearing and establish native landscaping targets. This approach aims to preserve the natural environment, protect local ecosystems, and promote biodiversity.
- Spoil ERAP
    - To achieve an “Design & As-built” ISC Rating Scheme (V1.2) rating of at least 65 for the constructed SWM3 Works. Below is the list of ISC requirements related to this CSMP.
- Was-2: Diversion from Landfill
    - The following target for landfill diversion have been achieved or bettered: 80 to less than 100% by volume of Spoil, 50 to 90% by volume of inert and non-hazardous waste and 40 to 60% by volume of office waste.

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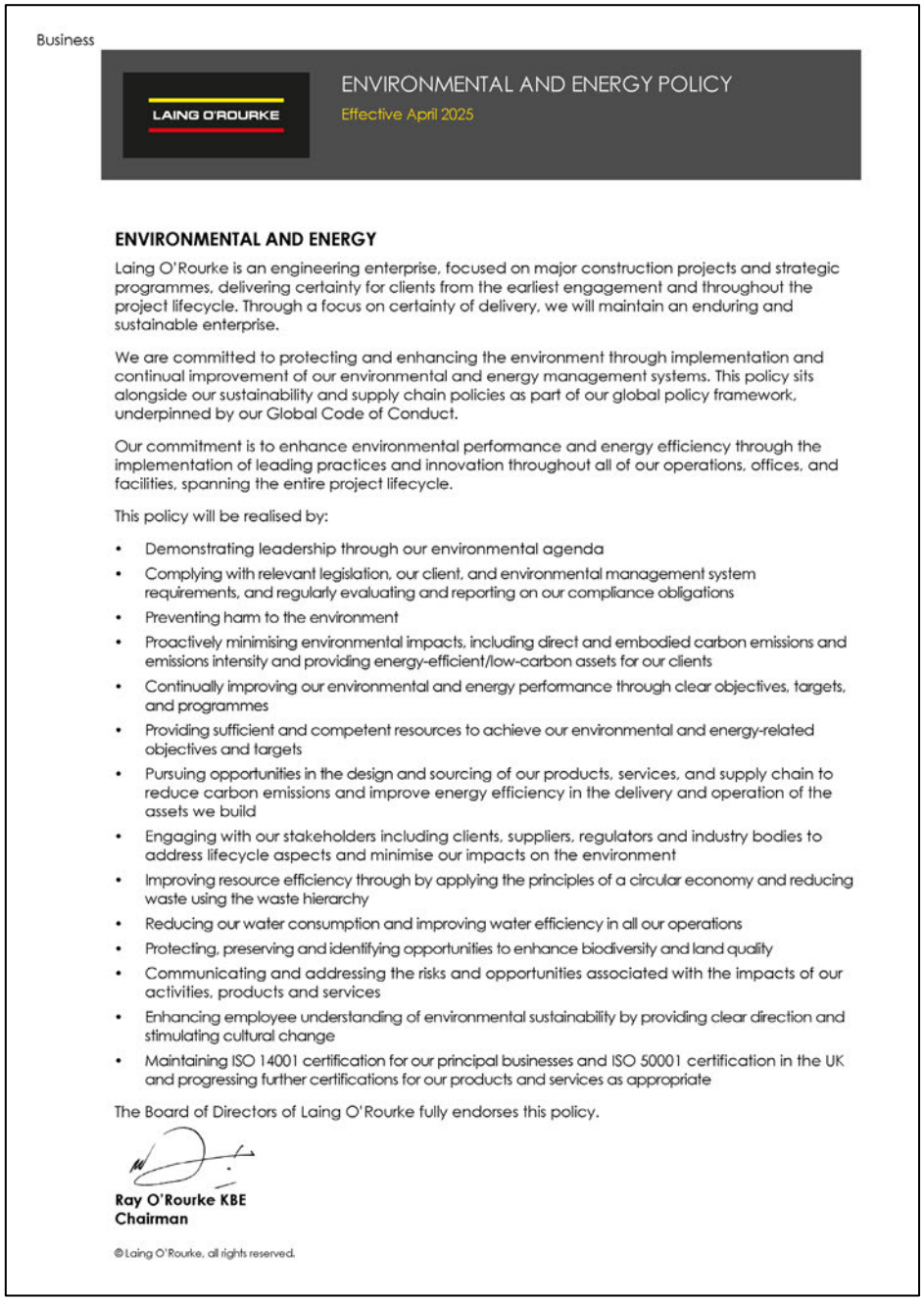
4. Environmental Management Plan

4.1. Policy

Laing O'Rourke maintains an Environmental & Energy Policy that will be:

- Displayed at prominent locations on the project site
- Communicated to site personnel during induction and training
- Made accessible to clients and interested members of the public.

All personnel associated with the project, including supply chain partners, must comply with the spirit and intent of the policy.



Business

LAING O'ROURKE

ENVIRONMENTAL AND ENERGY POLICY

Effective April 2025

ENVIRONMENTAL AND ENERGY

Laing O'Rourke is an engineering enterprise, focused on major construction projects and strategic programmes, delivering certainty for clients from the earliest engagement and throughout the project lifecycle. Through a focus on certainty of delivery, we will maintain an enduring and sustainable enterprise.

We are committed to protecting and enhancing the environment through implementation and continual improvement of our environmental and energy management systems. This policy sits alongside our sustainability and supply chain policies as part of our global policy framework, underpinned by our Global Code of Conduct.

Our commitment is to enhance environmental performance and energy efficiency through the implementation of leading practices and innovation throughout all of our operations, offices, and facilities, spanning the entire project lifecycle.

This policy will be realised by:

- Demonstrating leadership through our environmental agenda
- Complying with relevant legislation, our client, and environmental management system requirements, and regularly evaluating and reporting on our compliance obligations
- Preventing harm to the environment
- Proactively minimising environmental impacts, including direct and embodied carbon emissions and emissions intensity and providing energy-efficient/low-carbon assets for our clients
- Continually improving our environmental and energy performance through clear objectives, targets, and programmes
- Providing sufficient and competent resources to achieve our environmental and energy-related objectives and targets
- Pursuing opportunities in the design and sourcing of our products, services, and supply chain to reduce carbon emissions and improve energy efficiency in the delivery and operation of the assets we build
- Engaging with our stakeholders including clients, suppliers, regulators and industry bodies to address lifecycle aspects and minimise our impacts on the environment
- Improving resource efficiency through by applying the principles of a circular economy and reducing waste using the waste hierarchy
- Reducing our water consumption and improving water efficiency in all our operations
- Protecting, preserving and identifying opportunities to enhance biodiversity and land quality
- Communicating and addressing the risks and opportunities associated with the impacts of our activities, products and services
- Enhancing employee understanding of environmental sustainability by providing clear direction and stimulating cultural change
- Maintaining ISO 14001 certification for our principal businesses and ISO 50001 certification in the UK and progressing further certifications for our products and services as appropriate

The Board of Directors of Laing O'Rourke fully endorses this policy.

Ray O'Rourke KBE
Chairman

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4.2. Preparation and availability of the CEMP

4.2.1. 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.

4.2.2. Availability

This CEMP will be available to all personnel and subcontractors via the JHLORJV's Project document control management system. It is the responsibility of JHLORJV 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. Interface Contractors will ensure their personnel and subcontractors are informed of the requirements the Project's CEMP which is available from the project website.

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.

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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 Environment's Policy will be displayed on the Project websites, 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 JHLORJV JHLORJV's Quality Manager at the Project office. Copies of this CEMP will be distributed via the Project document management system to:

- The JHLORJV's Project Director;
- The JHLORJV's Construction Director;
- The JHLORJV's Environmental Manager;
- The JHLORJV's Public Liaison Manager;
- Sydney Metro;
- Interface Contractors; and
- The ER.

4.3. Planning

4.3.1. 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, 2022).

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 JHLORJV and Interface Contractors 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 3.10.4 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.*

Within 5 Business Days of each Calendar Quarter Date, CTR information will be submitted to the Principal's Representative to review in accordance with the relevant Contracts. The CTR information details progress, and evidence of compliance against each of the Environmental Compliance Requirements (ECR), and classifies each ECR as:

(i) Ongoing or Complete, to indicate their progress; and

(ii) Compliant or Non-compliant, to indicate compliance

Sydney Metro will produce Construction Compliance Reports (CCR) in accordance with the City and Southwest – Sydenham to Bankstown Compliance Monitoring and Reporting Program Report. The periods for the CCR reporting will be from 1st October - 31st March and 1st April - 30th September. JHLOR and Interface Contractors will be required to provide the

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requested information to assist Sydney Metro in compiling these CCR's at the end of each reporting period.

The CCR's will include:

1. a summary of results and analysis of environmental monitoring;
2. the number of any complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints;
3. details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;
4. a register of any consistency assessments undertaken and their status;
5. results of any independent Environmental Audits and details of any actions taken in response to the recommendations of an audit;
6. a summary of all incidents notified in accordance with CoA A36 of the Conditions of Approval; and
7. any other matter relating to compliance with the terms of this approval or as requested by the Secretary.

The Compliance Reports will be provided to the ER for information.

4.3.2. Environmental objectives and targets

Refer to Section 1.4. The environmental objectives and targets will be reviewed at the time of the 6 monthly update to ensure the objectives and targets remain relevant.

4.3.3. 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 in accordance with the Project's risk assessment protocols. 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 may be documented within Work Packs, Activity Method Statements or similar documentation with the intent to ensure that environmental risk management and mitigation measures are incorporated into construction activities.

EWMS' and/or SWMS' 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;

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- 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 3.11). 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 JHLORJV's Environment Manager (or delegate) or Interface Contractors Environmental Manager depending on the scope of work, such that the Project's scope of work is addressed by the ECM/s. The ECMs will be endorsed before being utilised. The latest ECM revision will be made available to the ER and Sydney Metro upon request or readily available from the project . The CEMP Appendix K will be updated with each revision of the ECM.

The Project ECM will be prepared in accordance with the LOR Environmental Primary Standard: Environmental Boundary Delineation and the CEMF Section 3.5c. Table 14 which addresses the requirements of the CEMF as well as describes the relationship of the ECM with other procedures used on the project.

Table 14: CEMF Section 3.5c - ECM Requirement Checklist

CEMF Section 3.5c - ECM Requirement Checklist:	How the CEMF requirement is addressed
i. Is a progressive document depicting a current representation of the site.	Revision 08 is the base revision that forms Appendix K. The ECM is a live document and will be updated as required. Appendix K will be updated on a 6 monthly basis. The newest revision of the ECM will be available on the project website from the time it is signed off by the Environmental Manager or Delegate.
ii. Indicates which environmental procedures, environmental approvals, or licences are applicable.	This ECM has been prepared for CSSI 8256, SWM3 Scope of Work. It is intended to be used in conjunction with; 1. The EPL 21147 Premise Map Boundary: https://sydenhamstationupgrade.com/sydenhamstationupgrade/

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	2. ERSED Plans prepared for specific work area and specific work scope, including Ancillary Facilities on a risk-based approach. The ECM is used to inform; 1. New Area Checklists 2. Excavation Permits 3. Possession Packs 4. Work Packs 5. Ancillary Facilities (as applicable)
iii. Illustrates the site showing significant structures, work areas and boundaries.	The significant structures and boundaries are featured as follows; 1. Project Area (Project Boundary) 2. Plant Community Types (PCTs) also referred to as Threatened Ecological Communities (TEC) 3. Heritage curtilages (captured as highest tier of status per station) 4. Heritage conservation areas & structures 5. Archaeological Management Zones (AMZs) 6. Potential Archaeological Deposits (PADs) 7. Plant parking 8. Waterways & large culverts (stormwater inlets captured in ERSED Plans) 9. EPL Water Discharge Points (Environmental Managers Approval Required) 10. Contamination Potential 11. Educational/medical/childcare centres and places of worship are differentiated from Residential Sensitive Receivers Note: the above features are generally constant/unchanging. Highly variable features such as ERSED controls, bunds, spill kits, concrete washouts, refuelling areas/bunds, flow lines, stormwater inlets, stabilised access/egress, consideration of minimising light spillage to surrounding properties in accordance with CoA E54 are captured in specific site/activity ERSED Plans as applicable.
iv. Illustrates environmental control measures and environmentally sensitive receivers.	The whole surrounding area of the 14km corridor is considered an environmental sensitive receiver, predominantly residential. Accordingly residential receivers have not been illustrated on the ECM. Environmentally Sensitive receivers such as educational/medical/childcare centres and places of worship have been differentiated from the residential sensitive receivers. ERSED Plans are prepared for specific work area and specific work scope and feature all applicable environmental controls.
v. Is endorsed by the Principal Contractors	JHLORJV Environmental Manager

<table>
<tr>
<td>Environmental Manager or delegate.</td>
<td>Interface Contractor Environmental Manager

<table>
<tr><th colspan="5">Latest Version Signed by Environment Manager and General Superintendent (or delegate)</th></tr>
<tr><th>Rev No.</th><th>Name</th><th>Date</th><th>Enviro Signature</th><th>Supervisor Signature</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Rev 08 is the base version in Appendix K of the CEMP</td>
</tr>
<tr>
<td>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.</td>
<td>The ECM is a practical working document used and referred to in the following procedures prior to commencing works on specific site locations and activities;

• Daily Prestart (all workers)
• Each worksite has a Daily STARRT Card (or equivalent) identifying environmental controls/risks/mitigations
• Possession/Work Pack
• Excavation Permits
• Ancillary Facility Checklists

Each of the above procedures are signed off by the relevant workers</td>
</tr>
</table>

4.3.4. Environmental Risk Assessment and Control

LOR has established a business-wide Environmental Aspects and Impacts Register in accordance with the HSEMS Environmental System Requirement Environmental Aspects and Impacts. The Register outlines the environmental aspects that need to be assessed and effectively managed to meet LOR's environmental obligations with respect to the context of the organisation and its projects. The register addresses JHLORJV's project aspect and impacts. The register is to be used to inform the development of the project-specific aspects and impacts register and associated risk and opportunity assessment.

The Environmental Risk and Opportunity Environmental System Requirement outlines the process by which environmental aspects and impacts are assessed at a project level. Project-wide environmental risks and opportunities are assessed in the project's Risk and Opportunity Register. Site specific environmental aspects and impacts have been identified and assessed in Appendix C of the CEMP.

This assessment must consider the following as a minimum as outlined in System Requirement – Risk and Opportunity:

- Obligations and requirements associated with the environmental approval conditions
- Emissions to air
- Releases to water
- Releases to land
- Waste management
- Contamination

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- Emission of noise including vibration
- Impact on the natural environment including wildlife, biodiversity and cultural heritage
- Resource efficiency and the use of materials
- Consumption of energy

Assessing significant environmental aspects is based on the risk and opportunity assessment matrix established in the Risk and Opportunity Management Procedure and the Risk and Opportunity Register.

Project risk and opportunity assessments must be reviewed and updated as the project progresses by responsible parties and as a minimum as part of the CEMP management review. The project's Risk and Opportunity Register must be maintained on a monthly basis or as required and must include project-wide environmental risks and opportunities.

By way of definition, the following applies to this environmental risk and opportunity assessment process and the associated matrix.

Green Risk – environmental impacts associated with the action are constrained to the project site and in accordance with the environmental assessment documentation. There is a rare to low probability of occurrence.

Amber Risk – environmental impacts associated with the actions have the potential to result in offsite impacts, where the environment recovers over the medium term. There is reasonable probability that the impacts would occur with the absence of suitable controls.

Red Risk – environmental impacts that have significant offsite impacts. The environment recovers over the long term, there is impacts to the local community. There is a high probability that the impact would occur. Environmental impacts occur offsite are considered major. Impacts have resulted in the destruction of protected species, sensitive habits or other impacts not envisaged as part of the environmental assessment process. The environment is not able to recover without substantial intervention.

Significant environmental issues will be controlled to a degree which is commensurate with the level of risk and the level of influence which the Company has over these issues.

Interface Contractors proposing to utilise an alternative risk and opportunity assessment process must ensure compliance with the requirements of this CEMP.

An ERAP or environmental issue specific Sub-plans must be developed for aspects or impacts representing an amber or red risk after the initial risk assessment. The ERAP or Sub-plan must reference and address the strategic mitigation and control measures determined following the initial risk assessment and as outlined in the LOR Environmental Primary Standards. In addition, an ERAP is to be developed and implemented where an environmental obligation, environmental mitigation requirement or legal requirement dictates issues specific controls are required even though there may be a low risk to the environment. Activities, aspects and potential impacts considered to represent an extreme risk following the application of the strategic mitigation and control measures must be redesigned or re-sequenced or have the approval of the relevant Environmental business leader or delegate.

If additional risks are encountered on site during the delivery phase, these will be addressed either by updating this CEMP or by using separate Environmental Risk Action Plans.

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4.3.5. Trigger Action Response Plans

Trigger Action Response Plans, or TARPs, are a crucial part of the LOR Environmental Management System and are designed to plan for an effective response to unexpected weather impacts.

A TARP outlines the minimum set of preventative actions required to be take when we face unpredicted weather impacts or deviations from normal weather conditions.

Unpredicted weather can cause various issues like increased dust, damage to works and equipment, and impacts on both on-site and off-site environments due to rainfall and flooding. The TARPs are a precursor to the JHLORJV emergency management procedures and The Incident Management Flow Chart (refer to Appendix J).

The TARP uses trigger values to indicate different levels of risk, Each level has specific actions that must be undertaken to minimise environmental impacts.

According to the Bureau of Meteorology October to April is the season for severe weather and is categorised as follows;

- **Severe thunderstorms;** Form along the east coast, including northern NSW and southern Queensland
- **Tropical cyclones;** form any time, however predominantly between November and April, at a general frequency of 4 per year in far North Queensland. These can result in flooding in the south, Sydney basin
- **Flooding**; Heavy rainfall can be caused by ex-tropical cyclones resulting in riverine and local flash flooding.
- **Heatwaves and bush fires**; Less applicable due to lower fuel loads in highly urbanised and rail corridor, however applicable as poor air quality may be a risk due to bush fires, hazard reduction or back burning activities around the Sydney basin.

The above sever weather categories typically materialise in localised flash flooding in relation to the S2B Project. As such the following trigger levels have been established for rainfall events and are quantified in Table 15 below.

Table 15: TARP Trigger level criteria

Severe weather	Normal	Trigger Level 1 (T1)	Trigger Level 2 (T2)	Trigger Level 3 (T3)
Tropical cyclones/severe thunderstorm/flooding	Rain >20mm in 24 hours Pre and post rainfall inspection.	Rain > 63.2% AEP forecast with potential to result in flash flooding.	Rain > 20% AEP forecast with potential to result in flash flooding.	Rain > 10% AEP forecast with potential to result in flash flooding.
Heatwaves and bush fires	Bushfire danger is less applicable to the Project due to lower fuel loads in highly urbanised and rail corridor area. Poor air quality as a result of bush fires in regional area and heatwaves effects on workers will be managed in accordance with the S2B Safety Management Plan.			

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Key personnel will download the BOM weather app and subscribe to the sever weather warning notification. The actions and responsibilities of the key personnel are listed in Table 16 below.

Table 16: Key Personnel actions and responsibilities

Position	Normal	Trigger Level 1 (T1)	Trigger Level 2 (T2)	Trigger Level 3 (T3)
Project Leader	No variation from standard managerial activities.	Communicate status to all managers and supervisors.	Conduct planning sessions, consider mobilizing the Project Emergency Management Team (PEMT), and communicate status to PEMT Leader.	Mobilize PEMT, conduct planning sessions, and communicate status to all section managers and PEMT Leader.
Package, Construction Managers, Supervisors	No variation from standard delivery management activities.	Communicate status to contractors and assess new environmental conditions.	Develop action plans with contractors, ensure emergency management plans are ready, and monitor progress.	Activate contractors' emergency management plans, develop additional action plans, and monitor progress.
Environmental Staff	No variation from standard HSE management activities.	Monitor and communicate weather information to Project Leader.	Provide advice on preparation works and conduct inspections.	Continue monitoring, advising, and inspecting as required.
HS/E Staff	No variation from standard HSE protocols	Ensure site emergency response protocols are followed.	Continue ensuring emergency response protocols are followed.	Ensure site emergency response protocols are followed.

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4.3.6. 30/60/90 Day Environmental Risk Review

The Laing O'Rourke 30/60/90 Day Environmental Risk Review Process has been developed to outline the approach for project level cyclical risk forecasting and management. The intent is to assess the environmental risks associated with activities over the full project lifecycle. The wider project team is to be involved such that environmental risks may be collectively managed. Wherever possible, meetings and collaboration activities to discuss environmental risks will be coordinated with other disciplines and their respective approach to risk forecasting and management.
The performance of the risk mitigation measures over the preceding 30 days should also be considered.
The steps associated with the strategy and approach for the 30/60/90 day risk review are outlined below.

1. Contract programme (i.e. P6 contractual programme) is reviewed each month for environmentally high-risk activities and or those that trigger the Severe Environmental Risk (SERs) protocols.

2. Update the project environmental risk assessment as necessary should previously unidentified risks, aspects or impacts be identified.

3. Consider the environmentally high-risk activities and identify proactive management measures and site assurance activities that are to be planned and completed to effectively mitigate the risk of the identified activities. Management measures would include additional training, toolbox talks, SER system review activities, development of activity specific method statements, reviews of SWMSs. Assurance activities may include SERs (system and field), additional site inspections, construction process audits

4. Identify high-risk environmental deliverables or submissions from the contract documents, licences and or environmental planning conditions. Develop plans to complete these deliverables accordingly, engaging other team members as necessary.

5. Update 30/60/90 day risk review form in Intelex with planned activities, proactive measures and potential site assurance activities.

6. Include site assurance activities and SERs in the Project's HSE Activity Schedule. Ensure tasks are assigned to relevant members of the wider project team.

7. Site assurance activities should be completed/documented in Intelex.

8. Review the effectiveness of the proactive management measures and assurance activities and their completion in terms of planned versus actual.

Further details are provided in the Laing O'Rourke Environmental System Requirement Risk and Opportunity.

4.3.7. Severe Environmental Risk Controls

The Severe Environmental Risks (SERs) Controls Standard describes the various minimum mandatory requirements which must be in place, demonstrated and working effectively with the intent of managing severe environmental harm risks on the project. Severe environmental risks relevant to the project are outlined in Appendix C.

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SERs relate to environmental harm caused by site operations which can result in long term damage to the environment. The focus of these risks is on high consequence environmental harm risks rather than regulatory exposure.

The SER Controls Standard provides clear guidance on the required controls and expectations for preventing high-consequence environmental impact. The SER Controls Standard describes the various minimum mandatory requirements that must be implemented and working effectively to manage severe environmental harm risks on all LOR projects. Additional SER controls have been included as necessary to address site-specific conditions.

The applicable SERs on this project as determined by the risk assessment are listed in Table 17.

Table 17: Applicable Severe Environmental Risk

Standard SERs	Project specific SERs
Biodiversity	None required - Standard SERs deemed sufficient.
Cultural and European Heritage	
Noise and Vibration	
Water Quality and Wastewater Storage	
Erosion and Sediment Control	
Surface Water Management	
Piling	
Spoil and Waste Management	
Contamination Management	

The required elements for the successful completion of the monthly SER activities are described below.

- The monthly field check should be recorded on the SER Field Report and form part of evidence to meet the monthly SER review. The field check is to be completed by the Package Manager or delegate from the operational team.
- System-based controls are to be reviewed for application and effectiveness on a monthly basis with the bounds of the Project's CEMP. System checks are assessed through the SER Planning and Control Report.
- The monitoring activity frequency will be dependent on occurrence of activities with the potential to cause high-consequence environmental impact on the project and reflect the current construction risk processes and methodologies.
- If all aspects of the performance criteria are working effectively in all areas where the risk applies, then the risk can be deemed to be managed and controlled.
- The SER Field Report and SER Planning and Control Report shall be completed on a monthly basis
- SER outcomes shall be monitored monthly during the Portion/Project Review
- Impact will be used to document the completed monitoring activities.

The SERs Control Adequacy Assessment Tool, found in the abovementioned SER Controls Standard will be used as guidance for the implementation of the standard.

The SERs Control Adequacy Assessment Work Instruction defines the procedural requirements for completing the monitoring activities.

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4.4. Resources, responsibilities and authority

In accordance with the contract for the Project, JHLORJV will perform certain roles and meet certain requirements under the Planning Approval. This includes consultation with key regulatory stakeholders, such as;

Table 18: Applicable standards and codes

Condition	Relevant government agencies to be consulted as per Infrastructure Approval 8256, 2018 or Staging Report Rev 8	Relevant government agencies as of 2024
C2/C7 CEMP	DPIE Approval ER Endorsement	DPHI Approval ER Endorsement
C3 (b) Soil & Water	**OEH**	NSW EPA
C3 (b)Soil & Water	Natural Resources Access Regulator (NRAR) (formerly **Department of Industry**)	DPHI Water
C3 (b)Soil & Water	Environment, Energy and Science Group (EESG) (formerly **OEH**)	NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)
C3 (d) Heritage	Heritage NSW (formerly **OEH**)	Heritage NSW & Heritage Council NSW
C3 (a to d excluding c) **Noise & Vibration** **Soil & Water** **Heritage** **C8 (a & b) Monitoring Programs Noise & Vibration, Water Quality**	Relevant Councils	Inner West Council (IWC) & Canterbury Bankstown City Council (CBCC)
Construction Traffic Management Plan	Relevant Councils RMS (consultation/information) Sydney Coordination Office TTLG	Inner West Council (IWC) & Canterbury Bankstown City Council (CBCC) TfNSW (consultation/information) Sydney Coordination Office TTLG
Construction Air Quality Management Plan **Construction Waste & Recycling, and Spoil Management Plans**	Procedure within CEMP as per Staging Report Rev 08	N/A
Visual Amenity Management Plan	Staging Report Rev 08 ER Endorsement	ER Endorsement

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Overarching Community Communication Strategy	Staging Report Rev 08 DPIE Approval ER Endorsement	DPHI Approval ER Endorsement
Business Management Plan	ER Information only	ER Information only
Tree Report	DPIE Information only ER Information only	DPHI Information only ER Information only

DPHI 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 DPHI approval, for an Independent ER for the Project. The Independent ER will perform the duties described within 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 19. 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 7. Interface Contractors will maintain an Organisation Chart relevant to their works.

Table 19: Roles and responsibilities

Position	Key Responsibilities and Authorities
Project Director (Project Leader)	• Reports to senior management within the 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 LOR'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.
Project Manager (Construction Lead/ Manager)	• Reports to the Project Director • Support the Project Director in environmental matters as required • Oversight of environmental requirements for design and Construction

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	• Must complete corporate and project induction covering environmental responsibilities and JHLORJV'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 JHLORJV's environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.
Engineer (Site/Project/Senior)	• Reports to the Project Manager • Support the Project Manager in environmental matters as required • Oversight of environmental requirements for design and Construction • Must complete corporate and project induction covering environmental responsibilities and JHLORJV'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 JHLORJV's environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.
Procurement Personnel	• 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 JHLORJV's environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.
Project Environmental Manager	• Reports to the Project Director • Ensure that the CEMP is effectively established, implemented and maintained • 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

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	• 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, including those identified within the Planning Approvals. The Project Environmental Manager will be the primary contractor contact for the Independent Environmental Representative • Must have tertiary qualifications in environmental engineering / science along with relevant experience working in environmental management roles in Australia. • Must complete corporate and project induction covering environmental responsibilities and JHLORJV'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.
Project Environmental Coordinator	• 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 the 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.
Communication and Stakeholder Relations Manager	• 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

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	• 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 JHLORJV (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.
Community Place Manager	• Build and maintain effective working relationship with community, businesses, and stakeholders • 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	• 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)	• 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	• 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 environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.

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All Personnel	• 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 the environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager.

Independent Environment Representative	• Receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI;
	• 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:
	  ○ 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 JHLORJV's environmental management system and other systems as necessary.

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Independent Certifier	• Assess and certify the Project for compliance, including environmental requirements.
Utilities Coordination Manager	• 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 coordinate intercepting, interconnecting and interrelated works and manage priorities as they may arise; • 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.

It is noted that;

- "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.
- The roles and responsibilities described above and the structure in Figure 7 is applicable to JHLORJV and the 3rd Party Interface Contractors operating in accordance with this CEMP on the project.
- 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.

It is the responsibility of Sydney Metro to engage an appropriate ER and seek approval from DPHI.

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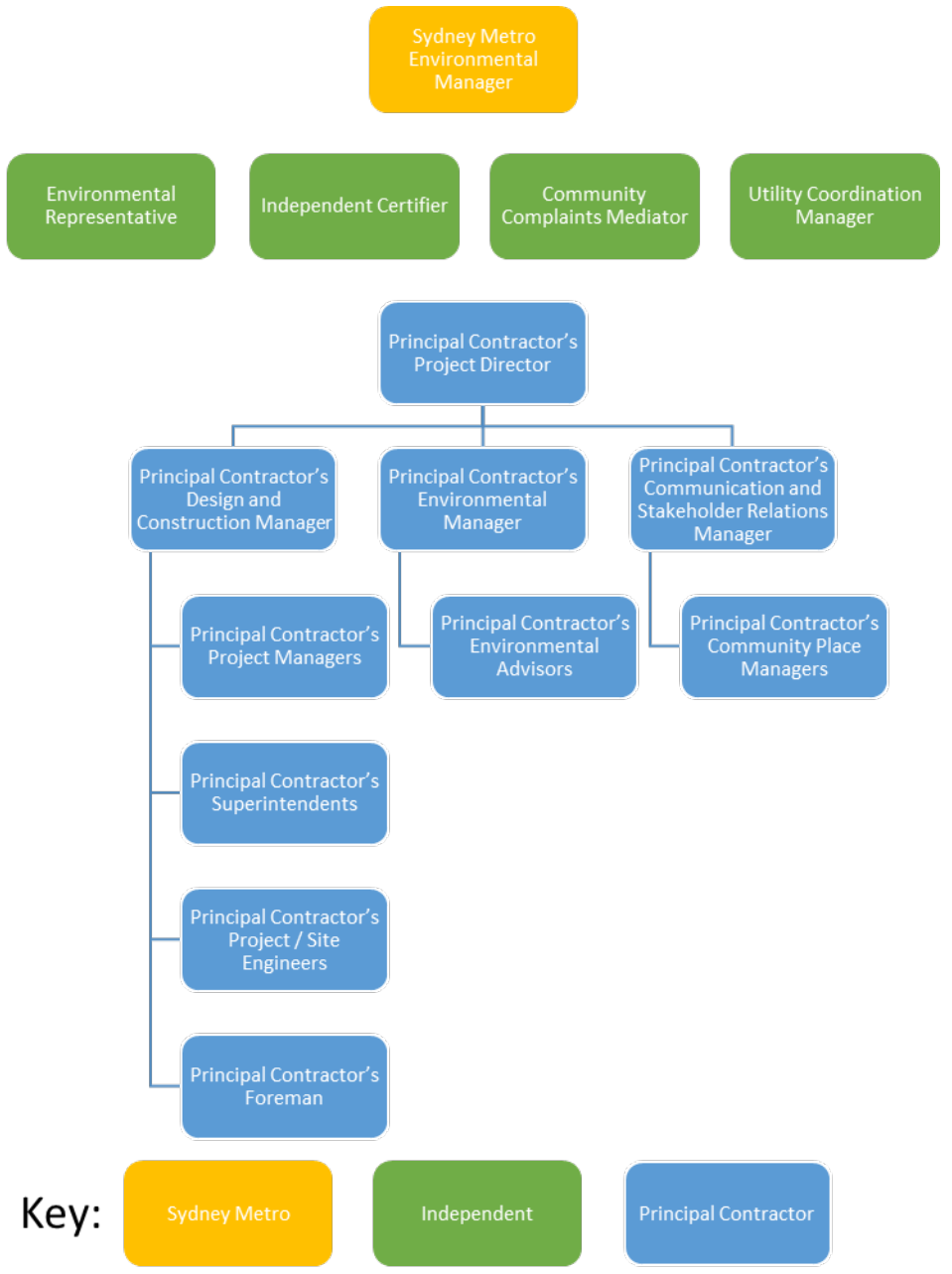


Figure 7: Organisation chart

4.5. Subcontractors & Interface Contractors

4.5.1. Selection and management of subcontractors

Environmental requirements and responsibilities are to be specified to subcontractors in the contract documentation. All subcontractors engaged by JHLORJV will be required to work in accordance with this CEMP.

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 organisations procuring the work for their ability to meet the project's environmental

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obligations. Environmental issues will be taken into account when selecting subcontractors and suppliers and as provided in the relevant 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 JHLORJV during site inspections and in accordance with the obligations in their agreements and contracts.

4.5.2. Interface Contractors working in accordance with the approved CEMP & Sub Plans

Interface Contractors are contracted to Sydney Metro. JHLORJV's relationship with various 3rd Party Interface Contractors is established through various Sydney Metro Contractor Cooperation and Integration Deeds. Interface Contractors operating in accordance with JHLORJV PC (WHS) will be responsible for implementing the requirements of the CEMP and Sub Plans,the Sydney Metro Compliance Documents, JHLOR Environmental Protection Licence (EPL) and ensuring they comply with the requirements of the obligations outlined in the project conditions of approval and;

- Sydney Metro City & Southwest Out of Hours Work Strategy / Protocol (SM ES-PW317);
- Environment Compliance Management Standard (SM ES-ST-202);
- Environmental Incident Classification and Reporting Procedure SM ES-PW-303;
- Water Discharge and Reuse Procedure SM ES-PW-309;
- Sydney Metro Construction Environmental Management Framework (CEMF) SM ESST-204 (compliance is required to the extent defined in Annexure 2);
- Sydney Metro City & Southwest Environmental Reporting Template SM ES-FT-421;
- City and Southwest Construction Noise and Vibration Strategy SM ES-ST-210;
- Environment & Sustainability Policy SM SE MM 102;
- Planning Approval Consistency Procedure SM ES-PW-314;
- Principal's General Specifications G10 - Traffic and Transport Management SM ESST-214;
- Construction Traffic Management Framework II; and

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- Web Content Accessibility Guidelines (WCAG 2.0) (available on internet).

The abovementioned environmental requirements and responsibilities are communicated through the Project Induction and interface management meetings. Each Interface Contractor in accordance with the JHLORJV PC (WHS) will assign the responsibility for the implementation of the CEMP to the Interface Contractor's Environment Manager, who will have appropriate experience. The Interface Contractor's Project Director will be accountable for the implementation of the CEMP to the extent of the Interface Contractor's works. The role of the JHLORJV Environmental Manager is to provide guidance when requested by the Interface Contractor or Sydney Metro, on the implementation requirements of the CEMP to achieve a positive environmental outcome.

The JHLORJV Environmental Manager may offer advice on continual improvement opportunities for interface contractors from time to time, when opportunities for improvement are observed. It is the responsibility of the Interface Contractor to raise the observation as a non-compliance with Sydney Metro and the Environmental Representative and JHLORJV Environmental Manager if it is determined a non-compliance has occurred.

4.6. Competence, training and awareness

4.6.1. Environmental induction

Requirements for training, awareness and competence for environmental aspects and impacts are outlined in System Requirement Onboarding, Training, Induction and Verification of Competency (VOC) and this management plan.

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 will 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.
- Emergency procedure and response (e.g. Spill clean-up)

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- Reporting procedures for environmental hazards and incidents
- Basic understanding of their legal obligations
- Relevant project specific and standard noise and vibration mitigation measures
- Relevant licence and approval conditions
- Permissible hours of work
- Any limitations on high noise generating activities
- Location of nearest sensitive receivers
- Designated loading/unloading areas and procedures
- Site opening/closing times (including deliveries).

A record of all environment inductions will be maintained and kept on site.

The 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.

4.6.2. Toolbox talks, training and awareness

The project will use Toolbox talks 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.

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To promote environmental awareness amongst the Construction team, organisations implementing this approved CEMP will issue environmental alerts as required to Project / Site Engineers and Supervisors. These will also 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 supervisory personnel 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 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 4.6.3) 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.

A Training Register is to be maintained on by all organisations with accountabilities for the implementation of this approved CEMP.

JHLORJV will maintain its training register and details withing the information management system.

The Project Environmental Manager will establish a schedule of environmental training in conjunction with the development of this CEMP.

Training in high-risk aspects shall be undertaken as the project progresses. The proposed training as identified through the Training Needs Analysis (produced by the Project Training Coordinator) is presented in Table 20 Training Needs Analysis below. The training shall be scheduled to reflect the requirements of the construction program.

Table 20 Training Needs Analysis

Aspect	Training Inclusion	Personnel Required	Timing / Frequency/Means
Leadership	• Effective leadership • HSEMS	Management	Frontline Leadership Modules – ongoing basis
Emergency Spill Response	• Use and location of spill kits • Spill control • Emergency response procedures • Presentation and assessment • Spill response drill • Identification of hydraulic hose fatigue	Operational personnel Management	Project Induction Project Toolbox Talks –Incident response Annual Testing of PIRMP (POEO Act, S153E)
Erosion and Sediment Control	• Standard erosion and sediment controls from the	Operational personnel Management	Project Induction Project Toolbox Talks Monthly basis/ Incident response

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	Landcom 'Blue Book' • Implementation of controls on site • Erosion and Sediment Control Plans		
Heritage Awareness	• Stop works and reporting protocols for discovery of previously unknown heritage and archaeological items • Identification of heritage items/areas and archaeological management zones	Operational personnel Management	Project Induction Project Toolbox Talks – Incident response Protocol posted on message boards
Contamination Awareness	• Contamination status of site • Stop works protocols for unidentified potential contamination (hydrocarbons, asbestos, etc)	Operational personnel Management	Project Induction Project Toolbox Talks – Incident response Protocol distributed to workers and posted on message boards
Environmental Legal Obligations	• POEO Act and other project requirements • Applicable fines and prosecutions	Operational personnel Management	Project Induction Project Toolbox Talks – with incident responses
Trigger Action Response Plans (TARP)	• Preventative actions needed to respond to unpredicted weather impacts or deviations from normal weather conditions.	Operational personnel Management	Project Induction Project Toolbox Talks- TARPs

4.6.3. 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.

Supervisory personnel 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 environmental and supervisory personnel, and will include any environmental issues that could potentially be

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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.

4.7. 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 & E24, 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

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- 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 DPHI 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 (Conditions L5.6, L5.7 or L5.10) or if they are undertaken as per the City and Southwest Out-of-Hours Work Protocol/Strategy (OOHW) as per CoA E25.

4.8. Plant and Equipment

The following plant and equipment is proposed to be utilised during construction. This information is indicative and will be updated as required to align with method and equipment selections.

Table 21 Indicative List of Plant and Equipment

Activity	Details	Timeframe	Plant
Bankstown Civil Works	*New, and modification to existing, infrastructure and systems to facilitate a new cross-corridor plaza between The Appian Way (north of the rail corridor) and Restwell Street (south of rail corridor) retail facilities and Station Precinct and Public Domain improvements.* Separation of the current Sydney Trains line at Bankstown into sections for Sydney Metro and Sydney Trains including demolition of platform	Sept 2024-May 2026	Excavators, mobile cranes, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, telehandlers, generators tipper trucks, non-destructive digging trucks. Jack hammering, saw cutting, CFA Piling Rig, telehandler, concrete truck, concrete pump, concrete vibrator, 24t excavator, powered hand tools (grinders etc), delivery trucks, 2t tipper, powered hand tools, EWP/scissor lift, 120t crane, Telehandlers, and delivery trucks, Excavators, mobile cranes, EWPs, compaction equipment

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	Construction of Turn back, fencing and rail adjustment to Sydney Metro area to facilitate testing. Bankstown Station and Precinct Works, to achieve the final station and precinct configuration		including rollers, paving & asphalt machines, hi-rail & non hi-rail plant (including excavators, mulitcranes, scissor lifts, crane trucks, vac trucks, hydremas, concrete agitators), telehandlers, non-destructive digging trucks. Jack hammers, demolition/concrete saws & concrete cutting equipment, bored piling rigs, Continuous Flight Auguring Piling Rig, telehandlers, concrete trucks, concrete pumps, concrete vibrators, powered hand tools (grinders etc), delivery trucks, generators, tipper trucks, light vehicles, powered hand tools, saw cutting, grinders, welding equipment, lighting towers.
Southwest Station Work	Equitable canopies and lifts, switchback ramps, landscaping, defect close out, station deep clean, heritage painting, final conversion scope (Platform Screen Doors), gap filler works	Sept 2024-end of Project 2026	Jack hammering, saw cutting, CFA Piling Rig, telehandler, concrete truck, concrete pump, concrete vibrator, 24t excavator, powered hand tools (grinders etc), delivery trucks, 2t tipper, powered hand tools, EWP/scissor lift, 120t crane, Telehandlers, and delivery trucks, Excavators, mobile cranes, EWPs, compaction equipment including rollers, paving & asphalt machines, hi-rail & non hi-rail plant (including excavators, mulitcranes, scissor lifts, crane trucks, vac trucks, hydremas, concrete agitators), telehandlers, non-destructive digging trucks. Jack hammers, demolition/concrete saws & concrete cutting equipment, bored piling rigs, Continuous Flight Auguring Piling Rig, telehandlers, concrete trucks, concrete pumps, concrete vibrators, powered hand tools (grinders etc), delivery trucks, generators, tipper trucks, light vehicles, powered hand tools, saw cutting, grinders, welding equipment, lighting towers.
Southwest Corridor Works	Corridor access stairs Screens fixed to CSR on bridges Veg management Acoustic treatment Boundary fencing Track monitoring, Cable hauling, signalling and comms equipment, radio mast and repeater install	Sept 2024-end of Project 2026	Excavators, mobile cranes, piling rig, concrete truck, concrete pump, compaction equipment, hand tools, grinders, welding equipment, tipper trucks Excavators, EWP, Mulcher, chainsaw, trucks
Asset Upgrades	Infringement and track rectification Bridge upgrades renewals	Sept 2024-end of Project 2026	Excavators, mobile cranes, concrete pump, concrete vibrator, light towers, EWPs, compaction equipment, hand

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	Civil asset upgrade renewal		tools, grinders, welding equipment, hi-rail plant, telehandlers, generators
Final Conversions	Sydenham junction final track configuration, fencing, wayfinding & signage (all stations), building management and control systems (BMCS), cable containment systems, cabinet installation and cable haul from Stations to MSBs, cable termination, testing and commissioning, low voltage power supplies, distribution systems and energisation, and lift conversions (Marrickville Station to Punchbowl Station) Earthing bonding, alteration works, insulated rail joints, redundant asset works Clean up work (final rail grind, final rail tamp, station refresh/deep clean) Station meal room alterations at 9 stations (btown not included) Fixed gap filler works Cable hauling, signalling and comms equipment, radio mast and repeater install	Sept 2024-Dec 2024	Excavators, tampers, mobile cranes, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, telehandlers, generators tipper trucks, non-destructive digging trucks.
ARTC Works	Temporary and permanent adjustments to ARTC operated and maintained infrastructure	Sept 2024-end of Project 2026	Excavators, tampers, mobile cranes, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, telehandlers, generators tipper trucks, non-destructive digging trucks.
Utility works	Qenos Pipe removal Non ST or SM assets (typically non-contestable works)	Sept 2024-end of Project 2026	
Property works	The Property Works comprises permanent adjustments to existing private properties required for, or as a consequence of the SWM3 Works and Temporary Works	Sept 2024-end of Project 2026	
Demolition of Punchbowl Candy Shop and Parcel Office, **Canterbury Signalling Building**	Canterbury Signalling Building (Care must be taken not to damage the heritage listed timber signal hut nearby) Demolition of Punchbowl Candy and parcel office which are with the S170 heritage curtilage, however non-significant elements.	Sept 2024-June 2025	Excavators, mobile cranes, light towers, EWPs, hand tools, grinders, generators, tipper trucks, non-destructive digging trucks, concrete saw, jack hammers, water carts, sweepers.

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Temporary site compound removal including Canterbury and North Terrace Road Bankstown	Removal of compound at Close St Canterbury Removal of compound within the carpark adjacent to North Terrace on the country (northern) side of Bankstown Station Ancillary facilities listed in Table 3 Temporary Construction facilities	Sept 2024-end of Project 2026	Excavators, rollers, front end loader, crane, telehandler, EWP, hand tools, power tools, jack-hammer, concrete saw, trucks, water cart, street sweeper Mobile Caravan Office and SWM3 satellite offices and laydown areas as required (in the process of investigation).
Temporary works	Geotech investigation, service searching, waste classification, bridge investigation, condition assessments other activities as per Section 1.1 of this CEMP.	Sept 2024-end of Project 2026	Drill rigs, excavators, trucks, concrete trucks (for stabilised sand backfill), compaction equipment, lighting towers, watercart, street sweeper, hand tools Vacuum trucks, hand tools, lighting towers Elevated work platforms, hand tools , lighting towers Survey equipment, hand tools

Environmental Primary Standard Dangerous Goods and Chemical Management includes requirements related to the fuelling and servicing of plant and equipment. These requirements represent the minimum requirements within LOR HSEMS. Additional project specific requirements and specific controls may be included in the issue specific Sub-plans or ERAPs.

Plant and equipment owned by Laing O'Rourke and/or John Holland and Interface Contractors will be maintained in a safe and serviceable manner in accordance with the Operators Manual of the specific plant. In particular the following requirements apply:

- Plant will be inspected prior to operation on site. In particular, fuel lines, hydraulic hoses or other items with the potential to impact the environment are to be inspected. Items found to be worn, damaged or otherwise degraded are to be replaced prior to operation
- Plant will be serviced, re-fuelled and washed-down only in approved areas where hydrocarbons can be captured and then properly disposed
- Fuelling will be carried out in bunded areas when fuelling from bulk tanks
- Plant and equipment will be maintained to prevent / fix oil leaks
- Plant will be driven and operated only in approved areas
- Plant will have effective pollution control and sound attenuation devices fitted

4.9. Communication

4.9.1. Internal communication

LOR's HSEMS includes specific organisational requirements related to communication and reporting within the System Requirement – Communication and Reporting. With respect to the functioning of the Project's environmental system, Company employees, the Client and other interested parties will be kept informed as necessary with specific requirements outlined in the section below.

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Internal communication methods include:

- Digital Contract Reviews
- Management reports
- Site inspection reports
- Audit reports
- Incident reports
- Noticeboards
- Site meetings
- Employee induction, training and toolbox sessions
- Briefings, notifications and alerts

External communication methods include:

- Site meetings with the Client
- All significant incidents notified to the Client
- Project reports to Client at progress meetings and in the Project Report
- Meetings and correspondence with interested parties (e.g. Local council and EPA) as necessary
- Discussions with adjoining land-owners / neighbours and the community who may be affected by the Project
- ER inspection reports and action close out tracking
- Consultation on the CEMP, Sub-plans and construction monitoring programs with external government agencies as shown in Table 7.
- Providing information for compliance tracking and any other external notifications under the Instrument of Approval.
- Any other measures as outlined within the Community Communication Strategy (CCS)

It is noted that a project website will be established in accordance with CoA B14. The website will be established prior to Work and will be maintained for a period of 12 months following the completion of construction. Details of the website will be made public by community notifications.

Section 2 and Section 3 of the CCS outline the approach to the community engagement and the consultation measures to be utilised.

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 project's environmental teams 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.

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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.

4.9.2. Liaison with government authorities or other relevant stakeholders

JHLORJV's Environmental Manager will be the authorised contact person for communications with the relevant stakeholders i.e. Sydney Metro, the ER, DPHI and the EPA (if required) on environmental matters related to JHLORJV's works. 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 4.12.8).

Liaison with government authorities and relevant stakeholder would be undertaken as per Section 8 of the OCCS.

4.9.3. Community liaison and/or notification

Sydney Metro has prepared an Overarching Community Communication Strategy (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 DPHI 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.

4.9.4. Cumulative impacts

Noise, air emissions and visual changes generated due to construction activities, construction traffic and redistribution of traffic, affect the amenity for the nearby residents and reduce the overall liveability and attractiveness of the area causing inconvenience, changes to lifestyle, disruption to daily life and activities. The cumulative impacts in interface zones where two contractors are working in adjacent areas will require effective coordinated management and consultation, particularly in regards to out of hours works.
Combined amenity impacts are likely to occur in residential areas adjacent to construction activities and construction compounds. However, different people would perceive amenity

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impacts differently. Vulnerable groups living close to construction activities would be more sensitive to change in amenity. These include older people, children, people with a disability or special needs, or people with medical conditions.
Consultation with, and the provision of information to, the surrounding community is regarded as a major factor in controlling the negative reaction to the inevitable noise and other potential impacts emanating from the construction site. Through mitigation and management measures detailed in the Project management plans, the Project team will effectively manage interfaces and coordinate with road authorities, RTOs, councils, and other projects to minimise disruption to transport networks, businesses and the broader community and support consistent messaging. We recognise that stakeholders, businesses and the community will be sensitive to engagement and construction fatigue over the life of the Project, and we will regularly review processes, materials and activities to ensure they remain effective in communicating project information, eliciting feedback and building support for the Project.
To address specific sensitivities of residents to visual, noise and air quality amenity impacts during construction, a Communications and Community Engagement Plan has been developed. The plan details how residents would be engaged before and during construction so as to inform them of project activities and provide a feedback mechanism for residents.
Laing O'Rourke will minimise construction light spillage to protect the amenity of adjacent neighbourhoods, parks, community facilities and any known significant native fauna habitat to the extent practicable.
The management of environmental aspects will be managed in accordance with the relevant sub-plans.

4.9.5. 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.

4.10. Emergency and incident response

4.10.1. 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 Project will enact the JHLORJV 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:*

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- *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;
- DPHI;
- The NSW Ministry of Health;
- The SafeWork NSW;
- Inner West Council and Canterbury Bankstown City
- Fire and Rescue NSW on 000.

Environmental emergencies will be handled as follows:

- Immediately report all incidents to the Project Leader and Site/Construction Manager who will assess the situation and manage the following steps:
- Immediately take all reasonable steps to contain further damage or danger to personnel, public, property and the environment
- Inform relevant authorities in accordance with the regulatory requirements
- Contact emergency service personnel as necessary (e.g. fire dept., spill clean-up services, etc.). Site emergency response team will also be contacted.
- Provide notification to the relevant organisations Environmental Leader, General Manager and Head of Legal immediately via phone and email as necessary.

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- Inform the Client's Representative and ER as necessary and in accordance with contractual requirements
- Complete a detailed report of the incident using Impact.
- Liaise with the Client's Representative regarding corrective and preventive actions required and the timeframes within which these actions must occur.
- The designated personnel will undertake the corrective and preventive actions.
- Reporting will also occur in accordance with Section 6.3 Crisis Communication of the Community Communications Strategy.

The Project Environmental Manager (or delegate) will be available 24hours per day, 7 days per week to respond to environmental related emergencies, primarily by phone. The Project Environmental Manager (or delegate) is able to stop work if an Environmental Emergency occurs.

Information on the handling of hazardous substances is contained in the SDS file.

Emergency Services contact numbers are to be displayed in the main site office.

The emergency response process is to be periodically tested via an environmental emergency drill at intervals not exceeding 12 months.

Specific system requirements related to environmental emergencies are outlined in System Requirement Emergency Planning and Response.

Project Emergency contact numbers are included in Table 22 below.

Table 22 Emergency Contact details

Contact	Phone Number	Address
EPA Pollution Hotline	131 555 or (02) 9995 5555 (if calling from outside NSW).	City of Parramatta, 10 Valentine Ave, Parramatta NSW 2150
Ministry of Health	(02) 9391 9000	73 Miller Street North Sydney NSW 2060
SafeWork NSW	13 10 50	92-100 Donnison Street, Gosford NSW 2250
Fire and Rescue NSW	000	211-217 Castlereagh St, Sydney NSW 2000
City of Canterbury Bankstown	(02) 9707 9000	Bankstown Civic Tower, 66-72 Rickard Rd, Bankstown NSW 2200
Inner West Council	(02) 9392 5000	7-15 Wetherill St, Leichhardt NSW 2040
Sydney Metro City and Southwest	-	PO Box K659, Haymarket, NSW 1240.
Sydney Metro 24-hour Enquiries Line	1800 171 386	22 Giffnock Avenue, Macquarie Park NSW

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 3.11 and Appendix F).

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4.10.2. Site Shutdown Planning

Site shutdown periods must be planned and coordinated to ensure the risk of environmental impact is minimised. Shutdown periods are considered to be any period in which construction activities are not planned to take place on the site for more than 3 consecutive days. This includes public holiday and Rostered Day Off (RDO) periods. Site shutdown planning must be undertaken in accordance with System Requirement Environmental Planning. Planning activities must ensure that inspections, resources and contingency measures are agreed and implemented for the shutdown period.

4.11. Monitoring, inspections, reporting and auditing

4.11.1. Environmental inspections

Ongoing inspection of environmental mitigation measures will be undertaken by supervisory personnel in accordance with the organisational assurance program. Weekly site environmental inspections will be undertaken by the 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 in accordance with the Project TARP.

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 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 Supervisor for actioning. Actions will be assigned an implementation priority by the Environmental Coordinator based on environmental risk. Actions are closed out by Supervisor 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 Environmental Manager, an Environmental Improvement Notice (EIN) may be issued to either the Supervisor or the subcontractor supervisor in charge of the work activity and/or an individual. The individual receiving the improvement notice will be required to respond to the agreed corrective action as outlined on the notice. The timeframe to respond will be determined by the Environmental Manager on a risk based approach and documented in the EIN. Examples of observations deemed to be of a significant nature will include, but are not limited to, those that require immediate action due to potential environmental risk or recurring issues.

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

4.11.2. Environmental monitoring

Key characteristics of the project operations and activities which have a significant impact on the environment will be regularly monitored and measured.

This will include:

- recording of information to track performance
- monitoring operational controls and relevant environmental indicators
- level of conformance with objectives and targets

The Environmental Inspection Report will be used to monitor environmental issues on site and issued to the Project Leader. The report will be completed on a weekly basis. The Environmental Inspection Report may be updated for Project specific risks.

The Management Site Safety and Environment Inspection Report (or suitable equivalent to document environmental inspections not undertaken by environmental personnel) will be completed each week by the project's Supervisors to monitor environmental issues on site. The reports will be issued to the Project Leader/ Site Manager for review and signing.

Issues identified during environmental inspections requiring further action beyond normal practice or maintenance (i.e. where an issue cannot be addressed within a reasonable timeframe, based on the risk associated with the issue, or where an issue is re-occurring) are to be logged into Intelex as defined in the Project procedures. Organisations responsible for the implementation of this CEMP to utilising Intelex (Impact or Fieldview) will monitor and manage the action to close out inspection items in accordance with their own systems. The explicit intent being to raise and monitor actions to completion within the agreed timeframes.

Further details on non-conformances are presented in Section 4.12.

Intelex is LOR software application which records, collates and distributes Health, Safety and Environmental (HSE) data. HSE Dashboards in Intelex will be included as part of a Monthly Project Review and issued to the John Holland and Laing O'Rourke Business Unit Managers on a monthly basis. Where environmental inspection or monitoring outcomes are required to be logged into Intelex, a workplace visit is to be created and the associated actions generated.

Interface Contractors will utilise their own incident and assurance management software and report to Sydney Metro in accordance with their contractual requirements.

Where deemed necessary by the Project Environmental Manager and as a result of revisions to project scope or changes to project risks, additional ERAPs to control potential impacts will be developed.

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Regular site inspections will be completed by the ER and Sydney Metro representatives at a frequency to be agreed with by all parties.

As required under CoA-C8, Construction Monitoring Programs will be prepared in consultation with the relevant government agencies. The Programs must be endorsed by the ER and submitted to the Planning Secretary at least one month prior to commencement of Construction. Construction must not commence until the Planning Secretary has approved the required Programs. Each construction monitoring program has been incorporated into the relevant CEMP Sub-plan and are listed below:

Table 23 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	CNVMP – 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	CSWMP – Section 6	Submitted to the Planning Secretary and relevant regulatory authorities for information at a frequency as specified in the monitoring program.

The Construction Monitoring Program will include:

- Details of baseline data (including dates of when the data will be obtained)
- Details of all monitoring to be undertaken
- The parameters, frequency and location of monitoring
- Details of reporting of monitoring results (including to the Planning Secretary and relevant regulatory agencies)
- Procedures to identify and implement mitigation measures (based on results)
- Details of consultation

The Construction Monitoring Programs, as approved by the Secretary including any minor amendments reviewed 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 Secretary, whichever is the greater.

The Environmental Manager (or delegate) will be in attendance at any ER site inspections and will be responsible for actioning and responding to any identified corrective actions in accordance with the Corrective Action Request (CAR) Register timeframes outlined in Section 4.12.3 and as agreed with the ER.

The results of any monitoring undertaken as a requirement of the EPL will be published on the project website within 14 days of obtaining the results.

If monitoring and measuring equipment is required, it must be calibrated, maintained and controlled in accordance with the procedures in iGMS and requirements outlined in the project Quality Management Plan. Records of calibration will be kept in the document management system.

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4.11.3. Environmental Management System Auditing

4.11.3.1. Sydney Metro Auditing

Sydney Metro's *City and Southwest Compliance Monitoring/Tracking and Reporting Program Report* (Sydney Metro 2022) 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 undertaken by JHLORJV and Interface Contractors in accordance with the respective contract requirements; 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.

4.11.3.2. Environmental Management System Audit

JHLORJV Management System Audits

Auditing of the project HSEMS will be carried out in accordance with the System Requirement Compliance, Review and Assurance. The audit will evaluate compliance with this CEMP and associated documentation including legal, contractual and other requirements.

The audits will be conducted by either the LOR Environment Leader (or delegate), the John Holland Regional Manager (or delegate) or the Project Quality Manager.

JHLORJV will undertake internal Environmental Management System Audits on a 6-monthly basis. The scope of these audits will alternate between covering the general implementation of the HSEMS, and how the CEMP and Sub-plans are implemented (noting that the CEMP and Sub-plans dictate how the HSEMS is applied to the Project). The audit schedule is contained in Appendix M.

It is expected that the project will be audited within 3 months of commencing on site and approximately every 6 months thereafter and in accordance with the Audit Schedule. The relevant HSE Leader, in consultation with the project leadership team, will decide on the frequency, scope and timing of project/site audits.

An audit report will be issued to management for action. Actions will be followed up for close-out of actions within 1 month of the issue of the audit report.

Audits shall be captured within the Assurance application in Intelex. Actions associated with audits shall also be logged in the Assurance application in Intelex.

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3rd Party Interface Contractor Management System Audits

Auditing of the 3rd Party Interface Contractor environmental management system requirements will be undertaken by the relevant 3rd Party Interface Contractor in accordance with their contractual and environmental management system requirements. Records of these audits will be maintained by each 3rd Party Interface Contractor and as documented in their management systems.

In addition to internal audits as described above, the Project will be subject to independent audits in accordance with CoA-A33 to A35. The Independent (Environmental) Audit Program will be managed by Sydney Metro. Sydney Metro will submit a copy of the Independent Audit Program to DPHI no later than one month before the commencement of Construction. JHLORJV and Interface Contractors will participate in these audits as required by the audit program.

4.11.4. 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 contractor's will undertake quarterly reviews of the compliance requirements contractually allocated to them by Sydney Metro. These reviews are a collaborative exercise undertaken between JHLORJV, Interface Contractors, 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 relevant contractor. The relevant contractor shall be JHLORJV or the Interface Contractor with responsibilities documented in the associated contract. The 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 contractor will 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, JHLORJV or the Interface 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). JHLORJV or the Interface Contractor will 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. 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 JHLORJV or the Interface Contractor.

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- Within five working days of receiving the final completed CTR (and any evidence requested), 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 JHLORJV and the Interface 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).

4.11.5. Monthly Environmental Reporting

The LOR HSEMS outlines the approach to environmental reporting in the Environmental System Requirement Communication and Reporting.

Internal (JHLORJV or 3rd Party Interface Contractor) monthly environmental reporting is to be completed through the Contract Review process. The Project Leader/Project Director is responsible for ensuring environmental performance information is included in each months the Contract Review such as the following as necessary:

- Summary discussion on project risks and opportunities – to be read in conjunction with the risk register
- Environmental performance outcomes, improvement initiatives or corrective measures
- Client and stakeholder engagement and interface. In particular, client feedback on project environmental performance.
- Environmental incident and event management including the outcomes from incident investigations and corrective actions
- Content for the environmental project dashboard

JHLORJV and 3rd Party Interface Contractors will complete a monthly report using the Sydney Metro City & Southwest Environmental Reporting Template SM ES-FT-421. Each report is to be included in the Monthly Project Review. The reporting will be completed by the Project Environmental Manager (or delegate).

Subcontracts and supply chain agreements must include supply chain reporting requirements as necessary. This may include the following:

- Environmental management reporting requirements and key performance indicators
- Waste management reporting
- Project specific conditions of approval or environmental compliance reporting requirements
- Greenhouse gas and life cycle reporting

Supply chain environmental performance reporting shall be used as necessary to inform project and workplace environmental reporting.

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4.11.6. Environmental System Self-check

On a monthly basis, the project will assess the performance and implementation of the project environmental system through the project Environmental System Self-check. Outcomes of the project environmental system self-check are to be retained in the project records. Table 24 outlines the requirement and criteria to be revised and the relevant frequency.

Table 24 Project Environmental System Checks

System Requirement	Criteria	Frequency
SER Program	Program implemented and actions complete	Monthly
Site inspection implementation	Site inspections have been completed in accordance with the environmental management plan requirements.	Monthly
Event management	Environmental incidents have been reviewed, investigations completed and actions closed out.	Monthly
Environmental Monitoring Program	Environmental monitoring has been completed and reviewed for compliance. Non-compliances have been actioned and closed out	Monthly
Waste management	Project waste management register is up to date including spoil management and disposal	Monthly
Conditions of Approval tracking	Conditions of approval compliance matrix has been reviewed and updated demonstrating compliance with conditions	Quarterly
Environmental Licences	Environmental licence compliance has been reviewed and reporting completed as nominated.	Quarterly

4.11.7. Supply Chain Environmental Compliance Obligations Review

Suppliers and subcontractors operating on the Project will be subject to environmental performance requirements including compliance with the CEMP.

Environmental performance requirements will apply to all suppliers and subcontractors in accordance with the supply or subcontract agreements.

To ensure supply chain environmental performance requirements are being met on the project the following will be implemented:

- Supply chain audits - audits of the implementation of supply chain environmental systems on projects will be undertaken. Supply chain audits will verify implementation of the environmental requirements from their respective agreements.
- Environmental inspections on the project will review supply chain performance.
- Monthly Environmental Reports - as required to report on environmental performance and as outlined in supply chain agreements.
- Waste disposal reporting - all supply chain partners operating on site with obligations for waste disposal will maintain waste disposal records and provide reports on a monthly basis.
- Environmental Monitoring - where required by their supply chain agreement environmental monitoring to verify environmental performance targets are being met is to be undertaken and reported.

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If contractor work on the site is being performed contrary to the contractor's plan and / or applicable legislative requirements, action will be taken immediately. This may include a direction to stop work and issuing a relevant site instruction to address the non-compliance to works procedures and environmental controls.

4.12. 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).

4.12.1. Environmental incidents

The management, investigation, reporting and notification process for environmental events, including positive events, is to be undertaken in accordance with the Environmental System Requirement, Event Management and Reporting and Appendix F: Environmental incident investigation guidelines.

The Environmental Incident Report shall be completed and issued to the Project Leader for all Potential or Actual Class 1 or Class 2 incidents. The completion of the Environmental Incident Report for Class 3 incidents is at the discretion of the Project Leader. Notwithstanding Class 1, Class 2 and Class 3 incidents are to be recorded in Intelex.

Table 25 Event Definitions

Event	Sydney Metro Definition	LOR HSEMS Definition	Instruments of Approval Definition
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance with this approval. Adverse environmental impact includes contamination, harm to flora and fauna (either individual species or communities), damage to heritage items, or adverse community impacts.	Same as instruments of approval definition, defined further based on Class. Refer Table 26	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.
Non-Conformance		A failure to comply with a requirement, standard or procedure.	As above.
Non-Compliance	A breach of any Environmental Requirement	A failure to adhere with an Act or its Regulations, including	As above.

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Event	Sydney Metro Definition	LOR HSEMS Definition	Instruments of Approval Definition
	originating from Planning Approvals, Environment Protection Licenses, lease agreements, and other requirements documented in environmental management plans.	licences and approvals granted under an Act.	

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

Reporting to Sydney Metro, the ER and DPHI will occur in accordance with the Sydney Metro definition of 'non-compliance'.

Non-compliance to operational control procedures or to the HSEMS that cannot be rectified immediately relating to JHLORJV's work activities must be recorded and addressed by raising a Non-conformance Report and logged into the Assurance application in Intelex.

Interface Contractors will record non-compliance in accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure SM-17-00000096.

Non-compliances can arise out of monitoring, inspections or audits.

The Non-compliance report includes details of the project, the cause of the non-compliance, proposed remediation action (and approval), and close-out. Sydney Metro or the ER may raise non-compliances against environmental requirements.

The following environmental issues are to be included within Intelex as corrective actions;

- Internal inspection outcomes that cannot be rectified immediately – actions nominated on the Environmental Inspection Report and Management Site Environmental Inspection Report
- Incidents and associated corrective actions
- Internal audit observations/non-compliance
- Sydney Metro audits or other notice of non-compliance
- Notices or action from regulatory authorities

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 and/or legislative requirements depending on the severity of the consequence described where Class 3 represents minor consequences and Class 1 represents major consequences.

All incidents and complaints (including potential incidents) must be reported so that they can be investigated and prevented from recurring.

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Class 3 Incidents

Where a Class 3 incident has occurred, the works supervisor is to be informed. Class 3 incidents must be logged directly into Intelex or Interface Contractor system and SAI Global 360.

Actual or Potential Class 2 Incidents

Where an actual or potential Class 2 incident has occurred, Management is to be informed via the Project Leader. Class 2 incidents are to be investigated using a recognised investigation protocol and must be logged directly into Intelex or Interface Contractor System and SAI Global 360.

Actual or Potential Class 1 Incidents

Where an actual or potential Class 1 incident occurs the Environmental Leader, HSE General Manager and the Head of Legal are to be informed immediately. The requirements of the flow chart in Appendix F are to be applied to all actual or potential Class 1 environmental incidents.

The classifications are explained in detail with examples in the LOR Environmental Incident Classification Guidelines which is available in the System Requirement Event Management and Reporting.

Class 1 incidents shall be subject to an ICAM or Tap Root investigation and must be logged directly into Intelex or the relevant Interface Contractor system and SAI Global 360.

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 10).

Table 26 Classification System for Environmental Incidents

LOR Incident Classification					
Class 3		Class 2		Class 1	
Class Three Environmental Incidents typically cause short term or nuisance damage. The damage is easily rectified usually within one day. Class 3 incidents do not cause medium- or long-term damage		Class Two Environmental Incidents create short to medium term damage to the environment. This damage will result in the environment taking up to 12 months to return to pre-existing conditions. Potential for prosecution or infringement notice.		Class One Environmental Incidents create permanent or long term damage to the environment. This damage will result in the environment taking 12 months or more to return to pre-existing conditions. Major environmental investigation and potential for large prosecution.	
Corresponding Sydney Metro Incident Classification					
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

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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). 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 this CEMP.

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 8 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.

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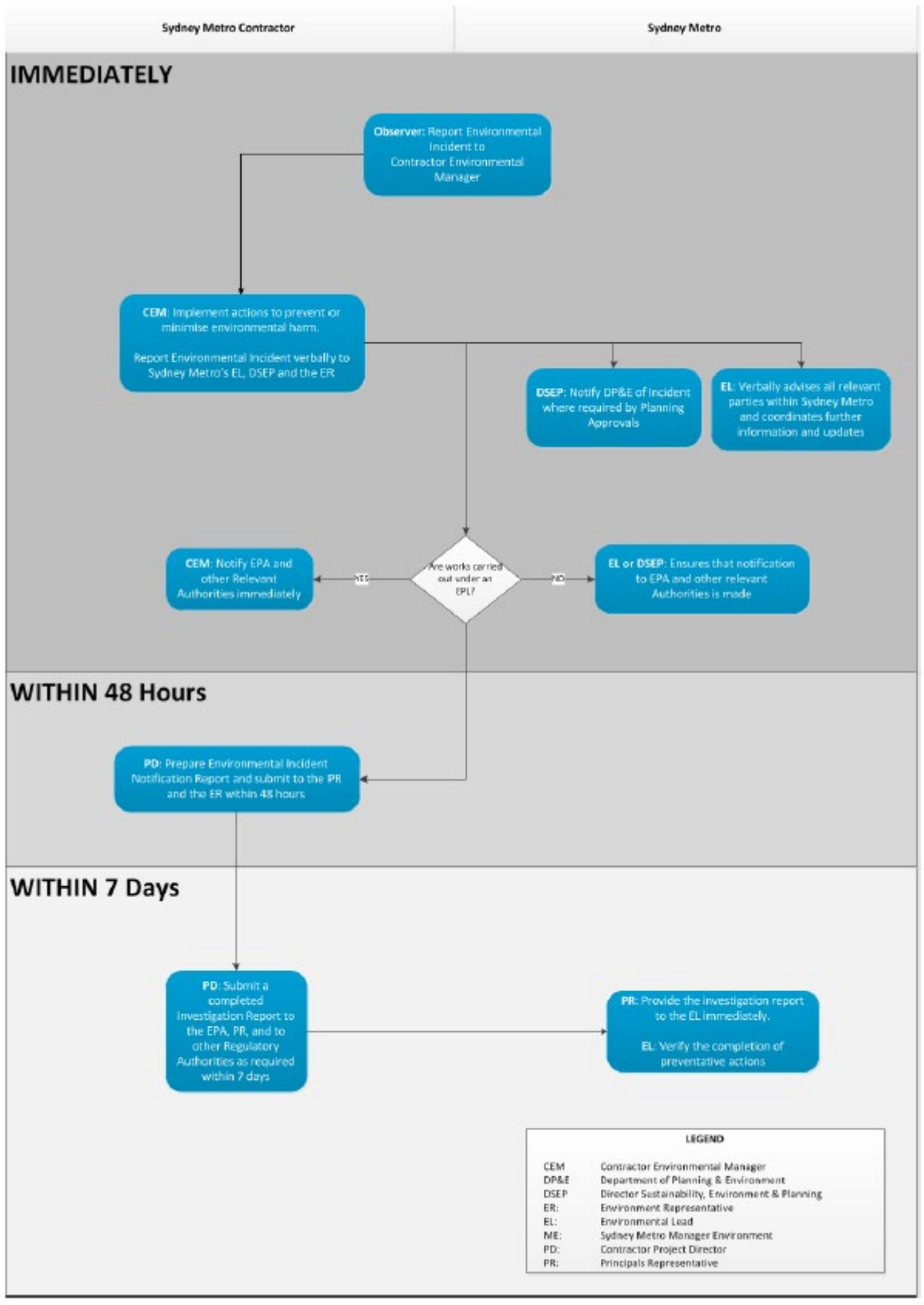


Figure 8: Environmental incident notification process for Class 1 and 2 Incidents

4.12.2. External incident notification

4.12.2.1. State matters

The EPA must be notified immediately of all pollution incidents that cause or threaten material harm to the environment.
Harm to the environment is 'material' if the effect (or potential effect) from an incident on the health or safety of humans or ecosystems is not trivial and/or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000.
Incidents requiring notification to the EPA must also be immediately notified to the Environmental Leader. Consultation with the client must occur prior to external reporting to government bodies.
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 must 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
- 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:

- NSW Ministry of Health, via the local public health unit – (02) 9391 9000
- The SafeWork NSW – 13 10 50
- Inner West Council - 02 9392 5000
- Canterbury Bankstown City Council - 02 9707 9000
- Fire and Rescue NSW – 000.

Regardless of the actual or potential impact, these authorities must be notified 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.

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4.12.2.2. Federal matters

Environmental incidents relating to the *Environmental Protection and Biodiversity Conservation Act 1999* must be notified to the Secretary of the Department within seven days of the event.
These types of incidents include the death of or injury to the following:

- Migratory bird species
- Listed marine species
- Threatened species or listed ecological community (includes taking these species).

4.12.3. Corrective Action

Management system non-conformances and recurring environmental incidents will be handled in accordance with the LOR HSEMS – Corrective and Preventative Action Procedure by the Environmental Manager. The Environmental Manager is responsible for the investigation, tracking and ensuring appropriate closeout of non-compliances, corrective and preventative actions.

Corrective and preventative actions may include:

- Site remediation and rehabilitation
- Increased site inspections and monitoring
- Increased environmental awareness (re-training, tool-box meetings)
- Review and improve existing environmental controls and job safety analyses/work method statements

Corrective actions are differentiated by risk ranking. The nominated timeframes to resolve items on the CAR Register are presented in Table 27.

Table 27 CAR Risks and Resolution Timeframes

CAR Risk Ranking	Timeframe for resolution
1	Action needs to be commenced immediately to resolve the issue
2	Action needs to be resolved within 1 week.
3	Action needs to be resolved within 1 month.

4.12.4. Incident and Complaints Reporting

Environmental incidents and complaints are to be investigated, documented, actioned and closed out as per the details provided in the investigation and notification process above.

Environmental incidents and complaints must be recorded in Intelex within two working days of the incident.

The responsible party, JHLORJV or the relevant Interface Contractor will provide notification of the incident to the Sydney Metro Representative as required and in accordance with the contract.

On this project and in accordance with the contract requirements, Sydney Metro is to be notified as detailed in Figure 7.

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Class 1 & Class 2 reportable incidents shall be reviewed by the Environmental Leader or Regional Environmental Manager, SE General Manager and Head of Legal from both John Holland and LOR prior to the issue of formal correspondence to external parties or regulatory authorities.

Management system non-conformances and recurring environmental incidents will be handled in accordance with the Continual Improvement Corrective and Preventative Action Procedure in iGMS.

Where an environmental non-conformance or incident is identified, Corrective and preventive actions shall be developed and may include:

- Review and improve existing environmental controls and job safety analyses/ work method statements
- Site rehabilitation
- Increased site inspections and monitoring
- Modify construction or installation methods
- Increase environmental awareness including re-training and tool-box meetings

Each incident must be sufficiently investigated to allow specific and detailed corrective and preventative actions to be identified, actioned and closed out.

Specific procedures relating to heritage finds are outlined in the SWM3 Construction Heritage Management Plan.

Note: where an actual or potential Class 1 Incident has occurred the SE General Manager will initiate the investigation and allocate responsibilities, an external consultant may be engaged. Authorities are to be notified in accordance with the legislative time frames.

4.12.5. Client Complaints

All communications from the Sydney Metro (including CAR's and Audit reports) expressing concern or dissatisfaction with the implementation or operation of the CEMP shall be documented in the Assurance application in Intelex. Sydney Metro complaints cannot be rated risk ranking 3.

Public complaints must be documented in the project's complaints management system and as outlined in the Sydney Metro Community Consultation Strategy and contract requirements. Public complaints are to be responded to in accordance with the Sydney Metro Community Consultation Strategy (CCS). Environmental management related complaints will be forwarded to the Environmental Manager.

Management system non-conformances and recurring environmental incidents will be handled in accordance with the Environmental System Requirement Inspections, Audits and Corrective Actions.

Corrective and preventive actions may include:

- Site remediation and rehabilitation
- Increased site inspections and monitoring
- Increase environmental awareness (re-training, tool-box meetings)

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- Review and improve existing environmental controls and job safety analyses/ work method statements

4.12.6. Senior Leaders Environmental incident review

For all Class 1 & Class 2 incidents, within 3 days the Project Leader will convene a briefing with the relevant Senior Business Leader/Area/Operations Manager to provide an update on the incident investigation and to allow the Area/Operations Manager to be actively involved in the investigation process. The briefing will include discussion on the progress of the investigation and any specific initial findings. A status report on any rectification work or maintenance activities to the relevant environmental controls will also be provided.

The following information relating to the incident investigation shall be forwarded to the Senior Business Leader/Area/Operations Manager and Environmental Leader:

- The condition of the environment and the status of any rectification or remediation works;
- The completed incident investigation report, including appropriate causal analysis and corrective actions;
- Program for the implementation of the corrective actions and any maintenance activities;
- A completed HSE Learning Bulletin template to be included in the monthly Learning Bulletin;
- Any other relevant information.

4.12.7. 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. LOR HSEMS definition is similar as follows; A non-conformance is a failure to comply with a requirement, standard or procedure. A non-compliance is the failure to adhere with an Act or its Regulations, including licences and approvals granted under an Act.

For internal reporting purposes, reporting will occur in accordance with these definitions. 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.

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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.

4.12.8. Department of Planning, Housing & Infrastructure 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 19. Any incidents will be notified to the Planning Secretary in accordance with these requirements.

Table 28: Incident notification to DPHI

CoA/Requirement	Details
CoA 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).
CoA 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.
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.
Appendix A - 2	Written notification of an incident must: (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.
Appendix A - 3	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.
Appendix A - 4	The Incident Report must include:

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CoA/Requirement	Details
	(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.

4.13. Work in environmentally sensitive areas

Addressed in Section 3.2.3 of this CEMP.

4.14. Ancillary site facilities

Ancillary site facilities used as part of the Project are discussed in Section 1.1 and Table 3.

4.14.1. Ancillary facilities approval pathways

Ancillary facilities proposed to be used as part of the Project are discussed in Section 1.1 and Table 3. 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 or A19 as applicable. 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 will 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:

g) are located within the Construction boundary; and

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h) 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.

Where an Ancillary Facility or Minor Ancillary Facility is required, JHLORJV or the responsible Interface Contractor will prepare an “Ancillary Facility Checklist” for ER review and endorsement. The checklist will include a review of impacts and will address the requirements of the relevant Conditions of Approval and any other relevant Planning Approval requirements. The Checklist will be available on the project website.

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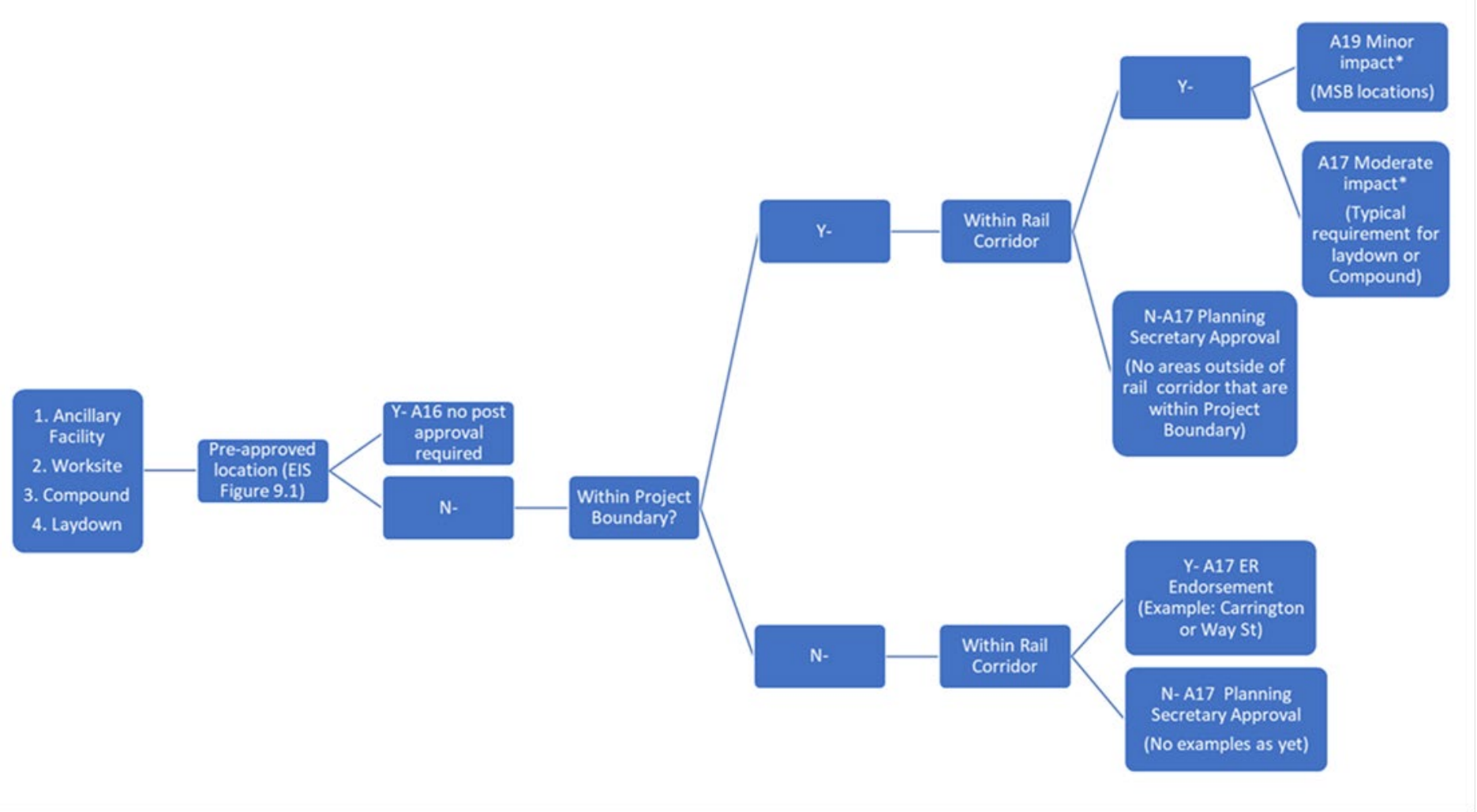


Figure 9: Flow chart to the general approach to ancillary facility approval pathway

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4.14.2. Trees and Vegetation

A number of trees, as defined by the Planning Approval, are located within the design footprint of the SWM3 works. These trees will be subject to assessment under a Tree Report under CoA-E5 and will be trimmed or removed accordingly.

The tree removal process is as follows;

1. Project Arborist updates Arboricultural Impact Assessment Report to ensure all trees proposed for removal or pruning are described as a result of design or access impacts. The trees are numbered and impact assessed as follows;
    a. Conduct a visual assessment of all significant trees located within 10 metres of development works from ground level. For the purpose of this report, a significant tree is a tree with a height equal to or greater than 5 metres.
    b. Determine the trees estimated contribution years and remaining, useful life expectancy and award the trees a retention value.
    c. Provide an assessment of the potential impact the proposed development is likely to cause to the condition of the subject trees in accordance with AS4970 Protection of trees on development sites (2009).
    d. Specify tree protection measures for trees to be retained in accordance with AS4970-2009.
2. A Tree Report is submitted for endorsement to the ER and Sydney Metro. The report provides the number of trees subject for removal and pruning and the Arboricultural Impact Assessment Report is appended.
3. Once endorsed, the report is issued to DPHI for information. Works do not commence until a receipt is provided from DPHI.
4. Prior to commencing works the JHLORJV Environmental Manager or Interface Contractor Environmental Manager identifies and marks out trees for removal, pruning or protecting as part of the Tree Removal Permit. For hollow bearing trees or native trees, an ecologist must be present.

In addition to the trees to be removed, SWM3 will also remove other vegetation, including;

- Grasses and weeds
- Shrubs and small plants

This vegetation is generally healthy in nature.

In accordance with REMM LV4 the management of trees during detailed design and construction planning would be guided by the project's Tree Management Strategy, which will 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 2:1 ratio.

Opportunities to retain and protect existing trees will be defined during detailed design and construction planning, in accordance with the project's Tree Management Strategy. The design will aim to reduce tree removal to the extent practicable, particularly where they contribute to screening vegetation or landscape character.

Also, in accordance with REMM LV12, trees to be retained will 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.

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Any tree pruning will be undertaken in accordance with the project's Tree Management Strategy, guided by a tree report prepared by a qualified arborist.

4.14.3. Site Restoration

Consultation will be undertaken with Sydney Metro, stakeholders and, where appropriate, the community in regard to site reinstatement.

JHLOR will implement the following measures in regard to site reinstatement following construction:

- All contractors required to implement this approved CEMP 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 (including provision of groundcover)
- Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction.

4.14.4. 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 will be consistent with the requirements identified in the Construction Noise and Vibration Impact Statement's (CNVIS) (refer to CNVMP). All fencing and hoarding will be in accordance with the requirements of the OCCS.

4.15. Hold points

The activities outlined in Table 20 are not to proceed without objective review and approval by the nominated authority. These activities are considered hold points. The hold points will be incorporated into the working plans for the project (EWMS, work instructions, Construction methodologies, etc.) as applicable.

Table 29 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, Housing and infrastructure
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

Item	Process Held	Acceptance Criteria	Approval Authority
New Area Checklist	New activity in a new or previous* area *Previous= work activities previously commenced as part of the Project	Site Inspection to identify environmental risks and constraints prior to works commencing. Refer to Section 4.3.3 EWMS & ECMs.	Environmental and Safety Managers with Site Engineer
Project Boundary	Site activities, prior to Construction commencement and subject to change management	Boundaries must be clearly delineated where the boundary is not evident through a physical feature such as an existing fence line or easement. Project Boundary must be documented in the ECMs and the project's GIS. The Project Boundary is to be managed in accordance with the following LOR Primary Standard: 1. Environmental boundary delineation 2. Biodiversity and Biosecurity 3. Heritage	Environment Manager (or delegate)
Specific Environmental Control Maps (ECMs) & Geographic Information Systems (GIS)	Construction activities in those specific areas or where ground disturbance is required.	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) and updated as part of the change management process. Project GIS to be updated as part of the change management process.	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 CSWMP, prior to any discharge off the premises or reuse within the premises.	Environmental Manager or Coordinator
Wet Weather Inspections	Ensure control measures are inspected and maintained as the works progress and also prior to and post rainfall events. Ensure control measures are inspected and maintained as the works progress and also prior to and post rainfall events forecasted >20mm, in 24 hours.	Site Inspections	Environmental Manager/ Coordinator/Supervisor/Engineer

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Item	Process Held	Acceptance Criteria	Approval Authority
Sediment and erosion control Plans (ESCPs)	Construction activities involving ground disturbance.	Sediment and Erosion Control Plan has been developed, reviewed, approved and implemented.	Environment Manager (or delegate)
Vegetation removal- Pre-clearing surveys	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- Clearing limits	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 as part of the tree removal permit and Arborist Report. Tree Report has been completed and submitted to the DPHI.	Environment Manager (or delegate)
Vegetation removal- Ecologist	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)
Spray Seal	Spray sealing and prime spraying (bituminous pavement treatment) multiple occasions and or exceeding 5000m² in a single instance	Completion of the Permit to Spray Seal and a pass on the 'Pre-Planning for Activity Readiness' section of the Permit.	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)	OOH Approval under JHLORJV EPL 21147	Environment Manager (or delegate)
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)

Item	Process Held	Acceptance Criteria	Approval Authority
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/orders or has been classified as VENM/ENM. A statement of compliance will be issued by the supplier to S2B subcontractor and include testing results to demonstrate the material if free from asbestos. Upon arrival to the site, the S2B subcontractor will need inspect the material with an appropriately qualified project representative to confirm and document by visual inspection no asbestos identified.	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.	DPHI (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 DPHI at least one month prior to the commencement of Construction.	DPHI
Construction Monitoring Programs	Construction Works	Endorsement of the programs by the ER and submission to the DPHI for approval at least one month prior to the commencement Construction Relevant baseline data for the specific Construction activity has been collected.	ER DPHI

4.16. 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:

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- All contractors with responsibility for the implementation of this approved CEMP 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.

4.17. Records of environmental activities

4.17.1. Environmental records

The relevant contractor's (JHLORJV or Interface Contractors) Environmental Manager is responsible for maintaining all environmental management documents and records as current at the point of use for their respective works. 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 contractors with responsibilities for the implementation of this approved CEMP 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.

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4.17.2. Document control

Laing O'Rourke's integrated HSEMS is part of a business wide management system which is known as IGMS. The core elements of the system are described in this CEMP with reference to relevant HSEMS Requirements, Primary Standards and SER Protocols.

JHLORJV, Interface Contractors, 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.

Contractors will implement a Project document control management system to control the flow of documents within and between JHLORJV, Interface Contractors, Sydney Metro, stakeholders and subcontractors using Asite and Teambinder.

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.

4.17.3. Environmental Schedules and Forms

Below is a list of relevant Environmental schedules and forms that will be utilised on the project. These records are to be kept electronically.

- Weekly Environmental Inspection
- Management HSE Inspection form
- Sydney Metro City and Southwest Environmental Reporting Template
- Sydney Metro Water Reuse or Discharge Form
- Non-Conformance Report
- Environmental Incident and Complaint Report
- Corrective Actions Register
- Noise and Vibration Monitoring Form
- Water Monitoring Form
- Environmental Training Register
- Waste Spoil Register

Refer to Appendix L for a copy of the schedule templates. Note that these templates may evolve over the duration of the project to maximise environmental outcomes. Additional schedules and forms may be developed as required over the course of the project.

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4.18. Management review

JHLORJV will check the status and adequacy of the CEMP to ensure that it meets current requirements as well as relevant environmental standards. Updates to this approved CEMP will be coordinated by JHLORJV with input from and consultation with the Interface Contractors.

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 JHLORJV's standard system;
- Updates on requirements and approve by Interface Contractors;
- 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, review and continuous improvement of the Project E&SMS 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 Project E&SMS by JHLORJV'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.

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

In the event of any project changes or refinements, the PEAOR and the Environmental Risk and Opportunity Register will be assessed to determine if a consistency assessment is required and whether amendments to conditions (or management measures listed within these documents) are required.
The Laing O'Rourke HSEMS System Requirement Change Management addresses changes that have a reasonable potential to impact health, safety or environment are effectively risk managed to eliminate or mitigate risks and ensure health, safety and environmental regulatory, certification and client requirements can be maintained prior to implementation of the change.
Changes that have potential environmental impacts are varied. They may include changes to design or construction methodology, changes to legislation, approvals or other planning matters or changes resulting from improvements in industry, community consultation or environmental incidents. There are various processes and forms that support risk analysis, management and communication of change. These include Design Change, Project Risk Assessment, Safe/Environmental Work Method Statements, Collective Insights, Plant Hazard Assessments, Chemical Risk Assessments, pre-start meetings and toolbox meetings.

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Where these do not effectively support the change management, then the workplace is to identify a suitable alternative such as implementing a Change Request Notice. Consultation is necessary so persons affected by the change may express their opinions on whether the change is warranted and how things may best be arranged and carried out to effectively implement the change.

4.19.1. CEMP revision

Continual improvement is achieved through regular measurement, evaluation, audit and review of the effectiveness of the CEMP, project environmental outcomes and LOR HSEMS. 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 4.19 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 DPHI 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 JHLORJV's Environmental Manager or Environmental Coordinators to prepare the revised documents.

This CEMP, and subsequent revisions, must be authorised by JHLORJV'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.

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

4.19.2. Changes to the Project

Refinements to the Project may result from detailed design refinements or changed circumstances throughout Construction. The contractor responsible for the scope of work 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 3.4).

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 will 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.

4.19.3. Project Boundary

The project boundary (referred to in the EIS as the ‘Project Area’) is the area within which the project activities are approved to be undertaken. Approval of project activities and scope of work is in accordance with the relevant local environmental planning legislation and associated planning instruments. It is also the area that has undergone environmental assessment and defines the area that may be impacted by the Project.

Environmental Boundary Delineation will be managed in accordance with the LOR Primary Standard (PS). The Boundary Delineation Primary Standard aims to standardise the approach to managing environmental boundaries on projects, ensuring compliance with local environmental planning legislation and associated planning instruments.

Key Requirements of the primary standard include updated processes for project boundary management during the project lifecycle, change management requirements, project specific controls and a standardised approach to the physical delineation of project boundaries and environmental no-go areas.

The boundary is to be clearly delineated on the project’ geospatial model as well as on site where the boundary is not evident through a physical feature such as an existing fence line or easement.

The requirement for work to occur outside of the project boundary may arise from design change requests, changes to methodology, altered access requirements, or the inclusion of additional work scope.

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During the project mobilisation phase, the project boundary will be reviewed to confirm that sufficiently detailed information has been provided for accurate identification and documentation. Accurate documentation of the project boundary means there is sufficient geospatial information available so the survey team can establish the boundary in the field. The approved project boundary is to be documented on the ECPs/ECMs and within the project GIS.

Work outside the approved project boundary generally has not been assessed for environmental impacts and any associated impacts and is therefore not approved.

Utilities such as water, power, sewer and telecommunications would need to be supplied to work areas. Generally, these utilities are located close to the sites (such as the adjacent footpath) and the supply is considered 'business as usual' for utility companies. The proposed approach to utilities management is described in S2.10 of the SPIR and refers to the 'Utilities Management Framework' adopting a risk-based approach to avoiding and/or minimising impacts associated with the relocation and/or adjustment of public utilities affected by the preferred project. As such a consistency assessment is not required for utility works.

The process for the documentation of the approved project boundary and a process for working outside of the approved project boundary is outlined below. The process for undertaking work outside of the approved project boundary is a hold point and is to be implemented by all contractors who have responsibilities for the implementation of this approved CEMP.

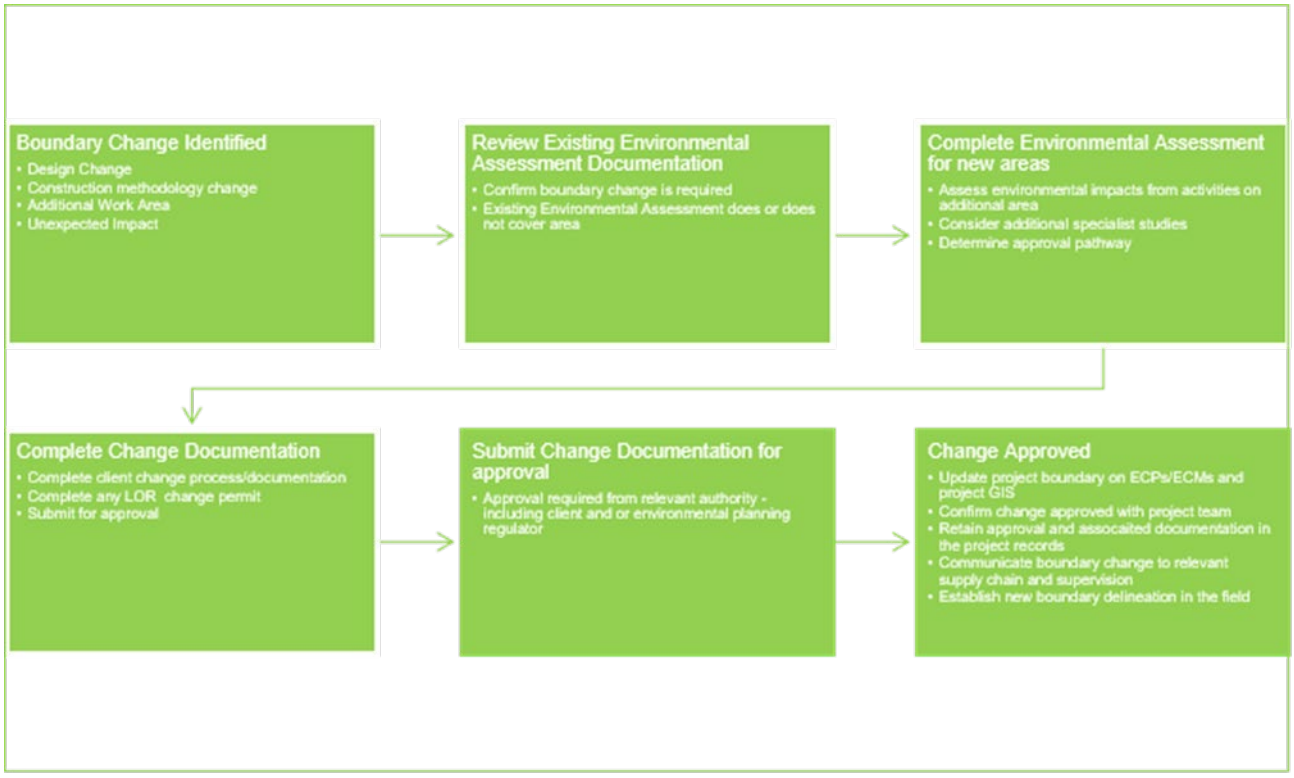


Figure 10: Process for the documentation of the approved project boundary and a process for working outside of the approved project boundary

4.19.4. Design

Environmental design requirements are to be managed in accordance with System Requirement Environmental Design.

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The following environmental issues must be considered during the design phase as applicable:

- How to minimise any adverse impacts on the environment including energy efficient operation, incorporation of sustainable or recycled materials
- How to improve design efficiency to conserve natural resources
- Address the requirements of the Project's and relevant organisational sustainability agendas
- How to meet environmental codes, regulations and other requirements
- Conditions of approval and development consent requirements
- Mitigation measures outlines in the environmental assessments
- Contractual environmental design requirements and Scope of Works and Technical Criteria (SWTC)

These issues should be considered, while taking into account the environmental, economic and social aspects of the project.

It is noted that in accordance with Revised Environmental Mitigation Measure (REMM) HSR1 a hazard analysis will be undertaken during the detailed design stage to identify risks to public safety from the project, and how these can be mitigated through safety in design. This assessment will be included within the Design report package.

4.19.5. Procurement

The supply of goods and/or services by suppliers and subcontractors will be managed in accordance with the Environmental System Requirement Procurement and Supply Chain and the business processes. In particular:

- During the tender phase, supply chain partners will be evaluated 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 and using for example, ITT Part E HSES Supply Chain Evaluation.
- Supply, subcontract and consultancy agreements must address the relevant environmental compliance.
- Agreements will outline the contractual requirements to be delivered by the supply chain through their scope of works and as outlined in the System Requirement Procurement and Supply Chain.
- Suppliers of chemicals and hazardous substances will be required to submit Safety Data Sheets (SDSs) 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 SWMS must address the environmental risks associated with their site activities.
- The environmental performance of subcontractors will be monitored during site inspections and in accordance with the obligations in their agreements and contracts.

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4.19.6. Handling, Storage, Packaging and Transport

The handling, storage, packaging and transport of goods will be managed in accordance with the project Quality Management Plan.

Dangerous Goods/Hazardous Substances will be stored and handled in accordance with SDS and the requirements of the Australian Dangerous Goods Code.

The Dangerous Goods (Road and Rail Transport) Act 2008 includes specific requirements in relation to the transport of dangerous goods. Where dangerous goods are to be transported as a result of the project, the requirements of the Act must be complied with by JHLORJV, Interface Contractors and third parties.

In particular, regardless of the quantity, appropriate transport documentation must be included with each load unless a specific exemption exists.

Transport documentation must include the following:

- Project/workplace name, contact number
- Transporter name, contact number
- Transport date, origin and destination
- Product name, classification, container type, quantity

Form E-T-8-1232 Dangerous Goods Transport Note may be used.

These materials will be stored in a safe area (e.g. bunded and/or store) which will prevent or contain accidental spillage and harm to the environment. Further details are provided in Appendix E in the ERAP - Delivery and Storage of Chemicals, Fuels & Oils and including Dangerous Goods requirements.

SDS's must be stored along with or at the point of storage.

4.19.7. Manufacture, Construction and Fabrication Processes

These processes will be controlled in accordance with Laing O'Rourke Primary Standards and management processes.

Environmental requirements, relating to manufacture, construction and fabrication processes, are defined in:

- Construction methodologies, SWMS
- Inspection and Test Plans, Task Complete Checklists and associated documents
- Contract documents
- Environmental Control Procedures

4.19.7.1. Life cycle perspective

The life cycle approach (or life cycle perspective) means understanding the relevant stages of a product or service system, from raw material acquisition or generation from natural resources to final disposal. LOR System Requirement Life Cycle Perspective outlines the process for ensuing this approach is taken on our projects.

From a project perspective, the life cycle approach applies to the following:

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- Work Winning (estimating & cost planning, business development, bids & proposals)
- Commercial (head & sub-contract formation)
- Engineering (feasibility studies, concept design, front-end engineering design, detailed design)
- Procurement (supply and delivery of goods and services)
- Delivery (construction, commissioning)

At each stage of project delivery the project will determine the aspects and opportunities to influence lifecycle outcomes including but not limited to:

- Stage in the life cycle of the product or service
- Degree of control the business has over the life cycle stages
- Degree of influence it has over the life cycle
- Life of the product
- Ability to influence on the supply chain

The lifecycle approach is a function of the project sustainability management and is included within this plan for information only.

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5. 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 11 and key environmental management documents are discussed below.

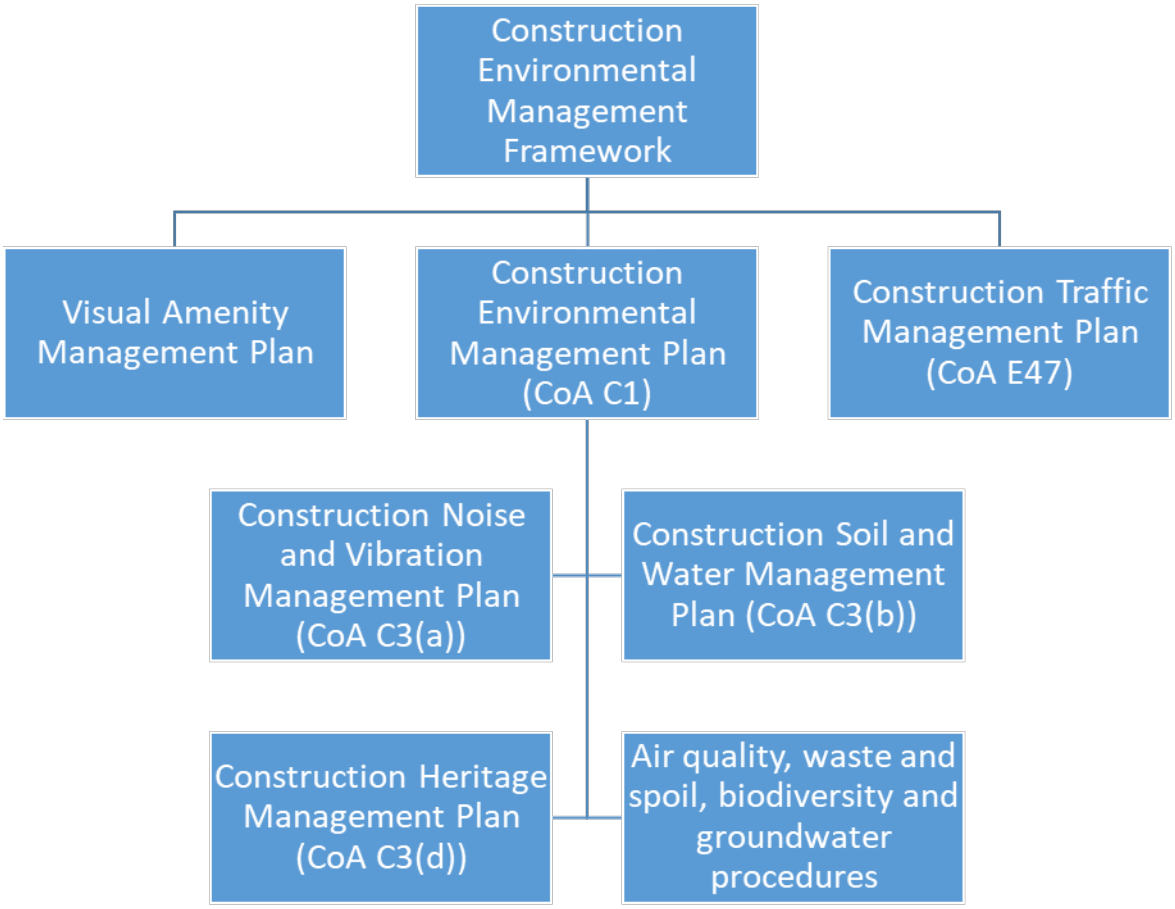


Figure 11: CEMP structure overview

5.1. Noise and vibration

A Construction Noise and Vibration Management Plan (CNVMP) has been developed to manage the noise and vibration risks during Construction of the Project. The CNVMP 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 CNVMP.

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 CNVMP.

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5.2. Soil and water

A Construction Soil and Water Management Plan (CSWMP) has been developed to manage soil and water quality risks during Construction of the Project. The CSWMP 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 CSWMP.

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 CSWMP.

5.3. Heritage

A Construction Heritage Management Plan (CHMP) has been developed to manage the risks from Construction of the Project. The CHMP 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 CHMP refer to Section 2.2 and Appendix A of the CHMP.

5.4. Waste and spoil

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

5.5. Visual Amenity

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

5.6. Traffic

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

5.7. 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.

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5.8. 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.

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Appendix A: Compliance Matrix

Conditions of Approval compliance matrix

CoA	Condition requirements	Document reference
A16	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: 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 4.14.1
A17	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.	Section 4.14.1
A18	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.	Section 4.14
A19	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: 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 (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 4.14.1
A20	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.	Section 4.14.4
A21	Boundary screening required under Condition A20 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive	Section 4.14.4

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 4.4
A23	The Planning Secretary's approval of an ER must be sought no later than one (1) month before the commencement of Work.	Section 4.4
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 4.4
A26	For the duration of the Work until the commencement of Operation, or as agreed with the Planning Secretary, the approved **ER** must: 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: 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 4.4
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 4.11 and 4.11

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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 4.11 and 4.11
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 4.11 and 4.11
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 4.11 and 4.11
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 4.11.3
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 4.11.3
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 4.11.3
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 4.12.4
A37	Subsequent notification must be given, and reports submitted in accordance with the requirements set out in **Appendix A**	Section 4.12.4
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. *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.*	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 tress must be determined in consultation with the relevant council(s).	Biodiversity
E5	The Proponent must commission an independent experienced and suitably qualified arborist, to prepare a comprehensive Tree Report(s) before removing any tress 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: (a) assess compliance with the requirements of this approval; (b) a description of the conditions of the tree(s) and its amenity and visual value; (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 (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. 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.	Appendix E – Procedure 1: Biodiversity
E6	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). *Note: For the purposes of Conditions E5 and E6, consultation with relevant council(s) encompasses consultation undertake with those councils on the Station Design and Precinct Plan required by Condition E56, and any agreements reached on replacement pot sizes during consultation.*	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 *Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting* and relevant Australian Standards in the series *AS/NZ 1158 – Lighting for Roads and Public Spaces.*	Refer to VAMP Section 3.2.3
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.*	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 dockets retained for audit purposes.	Appendix E – Procedure 4: Waste and Spoil

CEMF compliance matrix

Clause	Requirement	Document Reference
1.3	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: • 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.	Section 1.2 Appendix D
2	The key environmental obligations to be addressed are contained within: • Legislative requirements. • Project approval documentation. • Conditions of Approval. • Environment Protection Licences. • Other permits, approval and licences. • Standards and guidelines.	Section 3

Clause	Requirement	Document Reference
2.1	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.	Section 3
2.2	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: • 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). 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. 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: • Sydney Metro City and Southwest – Chatswood to Sydenham • Sydney Metro City and Southwest - Sydenham to Bankstown 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.	Section 3 Appendix A
2.3	Sydney Metro projects often meet the definition of a number of scheduled activities under Schedule 1 of the Protection of the Environmental 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. Where required, Sydney Metro Principal Contractors will: 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 3.7
2.4	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: • ISO14001 Environmental Management System – Requirements with Guidelines for Use	Section 3.8

Clause	Requirement	Document Reference
	• 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)	Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will: (i) Be consistent with JHLORJVs 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 JHLORJV will be required to work under JHLORJV's E&SMS.	Section 4.5
3.1(d)	The relationship between key documents within the Sydney Metro Environment and Sustainability Management System and JHLORJV's Environment and Sustainability Management System is shown in Figure 2 (of the CEMF).	This Plan
3.1(e)	JHLORJVs 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
3.4(a)	Subject to Section 3.3(b) and Section 3.2(b) JHLORJV 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. Issue specific Sub-plans will include:	Refer to Section 1.2, Section 5 and Staging Report

Clause	Requirement	Document Reference
	(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.	
3.5(a)	JHLORJV 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-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.	Appendix E
3.5(b)	The procedures will include; (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)	Progressive Environmental Control Maps (ECM's) will be prepared and implemented in accordance with the requirements of the approved CEMP which as a minimum: (i) Is a progressive document depicting a current representation of the site; (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 Environmental Manager or delegate; and	Section 4.3.3, Appendix K

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Clause	Requirement	Document Reference
	(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 3.4
3.7(a)	Prior to the commencement of construction JHLORJVs 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 from JHLORJV activities. If accepted, JHLORJV 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 JHLORJV will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles for its activities.	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 4.15
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 4.15
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: • 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;	Section 4.6

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Clause	Requirement	Document Reference
	• Communication protocols. 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 iii. Topic specific environmental training, e.g. erosion and sediment control training will be undertaken for relevant site personnel as determined by each project contractor	
3.9(b)	Principal Contractors will conduct a Training Needs Analysis which: 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 4.6
3.10(a)	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: 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, DPHI or OEH that are made by the Contractor or TfNSW.	Sections 4.12 and 4.10
3.10(b)	The Contractor will make all personnel aware of the plan and their responsibilities.	Section 4.4
3.11(a)	Independent Environmental Representatives a. TfNSW will engage Independent Environmental Representatives (ERs) to undertake the following, along with any additional roles as required:	Section 4.4

Clause	Requirement	Document Reference
	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 DPHI 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)	In relation to Roles and Responsibilities the CEMP will: i. Describe the relationship between JHLORJV, Interface Contractors, 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 JHLORJV 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 4.4
3.12(b)	All sub-contractors engaged by JHLORJV or Interface Contractors will be required to operate within the EMS documentation of that Principal Contractor (as defined in this approved CEMP)	Section 4.5
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 JHLORJV's, or a project specific, website within 14 days of obtaining the results	Section 3.7
3.13(c)	Environmental inspections will include: i. Surveillance of environmental mitigation measures by the Site Foreman. ii. Periodic inspections by JHLORJV's / Interface Contractors Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record.	Section 4.11.1
3.13(d)	Regular site inspections by the ERs and TfNSW representatives at a frequency to be agreed with JHLORJV	Section 4.11.1

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Clause	Requirement	Document Reference
3.13(e)	Principal Contractors will be required to undertake internal environmental audits. Internal audits will include: 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 4.11.3
3.13(f)	TfNSW (or an independent environmental auditor) will also undertake periodic audits of the project's environmental management system and compliance with the environmental aspects of contract documentation, including this Construction Environmental Management Framework.	Section 4.11.3
3.14(a)	Environmental Non-compliances 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	Section 4.12
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 4.12
3.14(c)	TfNSW or the Environmental Representative may raise non-compliances against environmental requirements.	Noted
3.15(a)	Principal Contractors will maintain appropriate records of the following: 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 4.17
3.15(b)	Records will be retained onsite for the duration of works	Section 4.17
3.15(c)	Additionally records will be retained by JHLORJV 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 4.17
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 Environmental Manager or delegate. These reports will be submitted to TfNSW at an agreed frequency	Section 4.11.4
3.16(a)	Principal Contractors will ensure the continual review and improvement of the E&SMS. This will generally occur in response to:	Section 4.18 and 4.19

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Clause	Requirement	Document Reference
	i. Issues raised during environmental surveillance and monitoring ii. Expanded scope of works iii. Environmental incidents iv. Environmental non-conformances.	
3.16(b)	A formal review of the project E&SMS by JHLORJV'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 4.18
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: 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 4.7 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: 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 v. Aim to minimise the requirement for reversing, especially of heavy vehicles.	Noise and Vibration Management Plan
5.3(a)	Mitigation measures for reinstatement will be produced in consultation with TfNSW, the community and stakeholders.	Section 4.16
5.3(b)	Mitigation measures required for reinstatement will be incorporated into the CEMP and will include as a minimum: i. Principal Contractors will clear and clean all working areas and accesses at project completion	Section 4.16

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Clause	Requirement	Document Reference
	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.	
6.1 (a)	The following spoil management objectives will apply to the construction of the project: 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: 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: 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.
7.2 (b)	JHLORJV'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: i. Implementing all feasible and reasonable mitigation measures to limit groundwater inflows to stations and crossovers; and	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.

Clause	Requirement	Document Reference
	ii. Undertaking groundwater monitoring during construction (levels and quality) in areas identified as 'likely' and 'potential groundwater dependent ecosystems.	
11.1 (a)	The following flora and fauna objectives will apply to construction: 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)	JHLORJV'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)	JHLORJV'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 organisation responsible for the works such as JHLORJV or Interface Contractors: 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: 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: - Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and - 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.	Appendix E – Procedure 1: Biodiversity
16.1 (a)	The following air quality management objectives will apply to construction:	Appendix E – Procedure 3: Air Quality

Clause	Requirement	Document Reference
	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.	
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 JHLORJV: […]	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
16.3 (a)	Examples of air quality mitigation measures include: 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.	Appendix E – Procedure 3: Air Quality 16.3 (a) iv. Is not relevant to this Project as no tunnel excavation works or deep excavations are proposed
17.1 (a)	The following waste objectives will apply to construction: i. Minimise waste throughout the project life-cycle; and ii. Waste management strategies will be implemented in accordance with the *Waste Avoidance and Resource Recovery Act 2001* management hierarchy as follows: - Avoidance of unnecessary resource consumption; - Resource recovery (including reuse, reprocessing, recycling and energy recovery); and - Disposal.	Appendix E – Procedure 4: Waste and Spoil
17.1 (b)	Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by JHLORJV and or Interface Contractors.	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.

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Clause	Requirement	Document Reference
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 JHLORJVs in relation to waste management including records of inspections and waste dockets for all waste removed from the site for its works.	As outlined in the Sydenham to Bankstown Staging Report (rev 4) this is not applicable to the Project.
17.3 (a)	Examples of waste management and recycling mitigation measures include: 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	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.	Design/pre-construction	Appendix E – Procedure 1: Biodiversity

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REMM No.	REMM Requirement	Timing	Document Reference
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.	Construction	Appendix E – Procedure 1: Biodiversity
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.	Design/pre-construction	Appendix E – Procedure 1: Biodiversity
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.	Design/pre-construction	Appendix E – Procedure 1: Biodiversity
B3	Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	Construction	Appendix E – Procedure 1: Biodiversity
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

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Appendix B: Legal and Other Requirements

Legal requirements

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Commonwealth requirements		
Environment Protection and Biodiversity Conservation Act, 1999	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
National Greenhouse and Energy Reporting Act 2007	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 JHLORJV 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.
Ozone Protection Act 1989	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		
Biodiversity Conservation Act 2016	The *Biodiversity Conservation Act 2016* 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 *Biodiversity Conservation Act*. Species listed within the act are recognised and are to be protected.

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Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
	Note: The Biodiversity Offsets Scheme (BOS) underwent major reform in 2024-2025. Existing approved offset strategies remain valid, however: • Post-approval management may be altered (e.g., revised BMP/BOS compliance). • Modification to applications involving biodiversity may trigger updated assessment rules.	
Biosecurity Act 2015 ***Biosecurity Regulation 2017***	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 are listed in Schedule 8 of the Biosecurity Regulation 2017. This act repeals the *Noxious Weeds Act 1993*.	**Low Relevance** 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 JHLORJV and Interface Contractors 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. JHLORJV and Interface Contractors will need to review and ensure Dangerous Goods requirements are addressed where transported by its vehicles, plant and equipment.
Environmental Planning and Assessment Act 1979	This Act establishes a system of environmental planning and assessment of development proposals in NSW. Note: Recent amendments (2025) streamline the planning processes but do not alter existing CSSI approval conditions.	**High Relevance** The Project has been declared Critical State Significant Infrastructure (CSSI) by virtue of Schedule 5, clause 4 of *State Environmental Planning Policy (State and Regional Development) 2011*. The development consent conditions and obligations are incorporated into the CEMP.

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
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 works enters streams, creeks and waterways. In addition this Act also has relevance for the removal of marine vegetation.	**Low Relevance** Along with the POEO Act water discharging from the site must not pollute the adjacent streams or watercourses. Projects assessed under Division 5.2 of the EP&A Act are exempt from permits required under sections 201, 205 or 219.
Heritage Act 1977	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. 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. 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.	**Low Relevance (unless relic is found)** Division 8 of Part 6 of the Heritage Act 1977 does not apply to prevent or interfere with the carrying out of approved State significant infrastructure. In accordance with Sections 115ZG and 115ZH of the EP&A Act, some environment and planning legislation does not apply to critical State significant infrastructure, and therefore this project. This includes approvals under Part 4, and excavation permits under Section 139 and Division 8 of Part 6 of the Heritage Act. Notification of the Heritage Council is required in writing if any relics are uncovered during construction, in accordance with the requirements of Section 146.
National Parks and Wildlife Act 1974	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. Secondly it is an offence under Part 8A of this Act to pick or harm threatened species.	**Low Relevance** 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.
Pesticides Act 1999 ***Pesticides Regulation 1995***	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.	**Low Relevance** It is not envisaged that pesticides will be used on the project by JHLORJV.

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Protection of the Environment Operations Act 1997	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. Amended by the Environment Protection Legislation Amendment (Stronger Regulation and Penalties) Bill 2024. Key changes: •Maximum penalties doubled: Up to $10 million for corporations and $2 million for individuals for Tier 1 offences. •New powers for the EPA: Including issuing Recall Notices, Preliminary Investigation Notices, and Prohibition Orders. •Illegal dumping offences expanded. •EPA's role expanded to include climate change action The Protection of the Environment Legislation Amendment (FOGO Recycling) Act 2025 is a significant reform in NSW aimed at reducing organic waste going to landfill. There is little tangible change for the Project as organic waste separation will continue. The definition of "material harm to the environment" has been updated under the Protection of the Environment Operations Act 1997 (NSW). The threshold for reporting pollution incidents causing material harm has increased from $10,000 to $50,000. This change aims to provide a more reasonable threshold for triggering incident reporting obligations, as incidents below this new threshold are usually contained and more easily remedied.	**High Relevance** The POEO Act provides for the issuing of environmental protection notices to control work and activities not covered by licences. 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. Sydney Metro's Contractor's may choose to apply for an EPL from NSW EPA. EPL requirements will be incorporated within this CEMP and Sub-plans to reflect the EPL's requirements. Project activities may be carried out under the Sydney Trains EPL 12208, where they are required as part of a Sydney Trains rail possession.
Roads Act 1993	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.	**Medium Relevance** 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.

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Rural Fires Act 1997	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.	**Low Relevance** The Project's work sites and surrounding areas are not prone to bush fires.
Sydney Water Act 1994 ***Sydney Water Regulation 1994***	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.	**High Relevance** Coordination will be required with Sydney Water during the works.
Waste Avoidance and Resource Recovery Act 2001	This Act repeals the *Waste Minimisation and Management Act 1995*. 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 *Protection of the Environment Operations Act* to wilfully or negligently dispose of waste in a manner that harms or is likely to harm the environment. WARR Act has partially been replaced by the Product Lifecycle Responsibility Act 2025. The PLR Act Introduces a mandatory product stewardship framework for products posing environmental or health risks, initially targeting batteries, with broader applications expected in due course. The change is predominately relevant to suppliers. The Project will continue to priorities materials in accordance with the waste hierarchy.	**High Relevance** 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).
Water Act 1912	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.	**Low Relevance** It is not proposed that Construction water will be obtained from surface (e.g. creeks, lakes etc.) or artesian sources.
Water Management Act 2000 ***Water Management (General) Regulation 2025***	This Act repeals the Rivers and Foreshores Improvement Act, 1948 and the Water Act, 1912. The provisions of both the aforesaid Acts are progressively rescinded as Water Management Plans are prepared and gazetted for catchment areas within the state.	**Low Relevance** Under Section 64(1) and Schedule 4 – section 49 of the Act the exemption applies to any kind of controlled activity carried out by a body wholly owned by the State or the Commonwealth and established or continued for a public purpose.

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
	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.	The exemption only applies if: • The activity does not cause a change in the course of a river • The body has considered the environmental impact of the activity and is satisfied that the activity is not likely to significantly affect the environment. • There is no effect of the activity on any wilderness area, as defined in the Wilderness Act 1987, within the locality of the proposed activity. Refer to the CSWMP for further details regarding assessment of exemption.

Other requirements

Approval / Licence	Requirement	Relevant section of CEMP
EPL 21147	Required for activities listed in Schedule 1 of the POEO Act	Section 3.7
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 3.2 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, JHLORJV 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. JHLORJV 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.

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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. Pre-construction Compliance Report	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 CNVMP and CNVIS 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. Accurately model predicted noise impacts 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 CNVMP. The Sydney Metro Construction Noise and Vibration Strategy is to be implemented Where high impact noise is required, it will be restricted to the conditions of EPL 21147 with respite periods implemented.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Noise during works required to be undertaken out of standard construction hours	Disturbance to residents or neighbouring businesses with potential for complaints.	L2	C5	18	Implement noise mitigation strategies for OOHW including assessment for sleep disturbance. Monitor noise for compliance to project goals. Control Measures as per the CNVMP and CNVIS are to be implemented. Employ a Work Coordination Register (WCR), customised for OOH works and reviewed by Construction Managers as an additional step to confirm accuracy on multiple work fronts. Standardised noise and OOH terminology to avoid ambiguity Validate noise predictions in accordance with EPL 21147, Condition R4.4 Validation Reporting Refine noise modelling (input) based on validation reporting (output) to close the gap on real world occurrence with predictions.	L3	C4	11	Noise performance will be continually monitored as per the requirements of the CNVMP. The Sydney Metro Construction Noise and Vibration Strategy (CNVS) is to be implemented Where high impact noise is required, it will be restricted to the conditions of EPL 21147 with respite periods implemented.
Vibration									
Vibration intensive activities undertaken on the site such as hammering, vibratory rolling, etc	Disruption, annoyance and nuisance to residents. Potential damage to adjacent residential and commercial residences and heritage structures. Disruption to businesses as a	L3	C5	12	Mitigation measures as per the CNVMP are to be implemented. Determine vibration limits and structure/receiver offset distances. Consult with potentially affected parties prior to commencement of works on their upcoming activities that may be impacted by construction vibration. Ongoing vibration monitoring during vibration intensive works.	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.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	result of vibration nuisance				Prior to commencing vibration intensive works review Stage 3 HIAs within the station curtilage areas (both S170/LEP and SHR), especially for demolition works such as the Punchbowl Parcel Office and Candy Shop, and Canterbury Signalling Hut Assess and mitigate vibration impacts as part of any EWMS and Demolition Management Plan				
Flooding, Water Quality, Erosion and Sedimentation									
Flooding	Impeding floodwaters Construction equipment and materials washed away at the following flood zone locations: •Bankstown Station compounds •Existing rail corridor and surrounds near Marrickville Station •Existing rail corridor located east of Canterbury Station •Existing rail corridor 100m west of Canterbury Station •Existing rail corridor 100m west of Campsie Station	L4	C4	11	Any site offices, ancillary facilities or hazardous goods storage containers will be located on piers or stilts above the known 1% AEP flood level Long term laydown or storage will be on piers or stilts above the 1% AEP, short term laydown will not occur within 3 days of potential storms. No stockpiling of spoil within flood zones within 3 days of potential storms Follow S2B TARP and keep updated, undertake a TBT	L5	C4	8	Follow S2B TARP; • Mobilizing the Project Emergency Management Team (PEMT) • Communicate status of the unpredicted weather impacts to all levels • Ensure site emergency response protocols are followed • Monitor and communicate weather information, provide advice on preparation works and conduct inspections.
Sediment laden runoff from construction works leaving site	Degradation of local watercourses. Increased turbidity in local water ways	L4	C4	11	Mitigation Measures as per CSWMP and any ESCP to be implemented.	L5	C4	8	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		
	resulting in impact on aquatic life. Fines for sediment escaping site. Materials washed away during flood events at the following locations: •Bankstown Station compounds •Existing rail corridor and surrounds near Marrickville Station •Existing rail corridor located east of Canterbury Station •Existing rail corridor 100m west of Canterbury Station •Existing rail corridor 100m west of Campsie Station				Install erosion and sediment controls within the project area. Ensure measures are inspected and maintained as the works progress and also prior to and post rainfall events. Provide training and awareness on the need to prevent pollution. Relevant people to undertake Erosion and Sediment Control training. Ensure measures are inspected and maintained as the works progress and also prior to and post rainfall events forecasted >20mm, in 24 hours. Long term laydown or storage will be on piers or stilts above the 1% AEP, short term laydown will not occur within 3 days of potential storms. No stockpiling of spoil within flood zones within the North Terrace compound at Bankstown within 3 days of potential storm				
Stockpiling of vegetation and topsoil	Wind and water erosion causing weed/seed dispersion offsite. Location of stockpiling next to waterways causing weeds/seeds to disperse from construction site. Materials washed away during flood events at the following locations:	L4	C3	17	Develop Environmental Control Maps to show stockpile areas. Utilise appropriate locations for stockpiling (away from waterways, watercourses, drains where feasible and reasonable). Designated vegetation stockpiling areas. Minimise stockpiling / Use temporary stockpiling Cover stockpiles if left for extended Periods No stockpiling of spoil or vegetation within flood zones within 3 days of potential storms	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.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	•Bankstown Station compounds •Existing rail corridor and surrounds near Marrickville Station •Existing rail corridor located east of Canterbury Station •Existing rail corridor 100m west of Canterbury Station •Existing rail corridor 100m west of Campsie Station								
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 on site and from site. Discharge water in accordance with EPL 21147 conditions and TfNSW Water Discharge Guidelines 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									

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
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 will only be undertaken by a licensed 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) and disposed of at an appropriately licenced facility.	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 form the worksite.
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 will 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. Ensure all spoil generated on site to be appropriately tested and classified	L4	C5	7	Regular inspections of work areas 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		
					against the Waste Classification Guidelines (NSW EPA, 2014) and disposed of at facility that can legally accept the waste classification. Avoid importing materials from Queensland. In the event this cannot be avoided, in accordance with the NSW Government biosecurity alert and associated emergency order for fire ants, Plant Health Certificates must be provided. Review Fire Ant Emergency Order for updated locations periodically.				
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. Statement of compliance will include testing results to demonstrate the imported material if free from asbestos. Upon arrival to the site, the subcontractor will need inspect the material with an appropriately qualified project representative to confirm and document by visual inspection no asbestos identified.	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 waterways. Decrease in health of nearby ecosystems, noting	L3	C4	16	Implement contamination management procedures from within CSWMP. Identify any contamination hotspots and incorporate procedures for these locations into construction documentation.	L4	C4	11	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		
	North Terrace carpark at Bankstown Station is a known former service station and has potential for contamination.				Apply the unexpected finds procedure within the CSWMP. Induct personnel on unexpected finds procedure.				
Potential for discovery of unexpected contaminated spoil during construction/ piling.	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 CSWMP to be implemented. Induct personnel on location, type, nature, concentration of contaminants on site if found. Monitor piling spoil for unexpected contamination in accordance with the Unexpected Finds Procedure and separate as required Re-visit Sustainability Hierarchy from base case for alternatives to disposal of extensive contamination is identified In the event extensive contamination is identified, refer to Schedule A of NEPM for progressive approach to contamination investigation to determine if a RAP and SAS may be required	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. Disperse asbestos fibres using inappropriate	L3	C4	16	Inspections of excavated and filled surfaces will 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.	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.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	investigation techniques				Refer to Safe Work NSW and Sustainability Hierarchy for management of Asbestos Contaminated soils will not be stockpiled on the structural fill layer or formation layers to avoid cross contamination. Complete investigation works following the requirements of the exemption when working within known asbestos contaminated area Refine mapping of known asbestos contaminated areas				
Hazardous Materials									
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. Flooding of storage containers at potential flood zone locations such as at the following locations: •Bankstown Station compounds •Existing rail corridor and surrounds near Marrickville Station	L3	C4	16	Induction, toolbox talks and training on appropriate handling and storage of liquids. All storm water drains must be identified prior to works and protection installed. Storage areas to be away from sensitive areas and appropriately bunded. SDS approved prior to bringing hazardous substances on site including risk assessment. Environmental Control Maps show storage locations and associated controls e.g. spill kits, etc. Training in use of spill kits. Contingency plans will be developed to deal with any spills which might occur during Construction. Clearly label containers. Regular auditing and inspection of storage areas and materials. Make storage areas restricted access areas.	L5	C4	8	Regular inspections of storage areas Monitoring of weather predictions

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	•Existing rail corridor located east of Canterbury Station •Existing rail corridor 100m west of Canterbury Station •Existing rail corridor 100m west of Campsie Station				Reduce/eliminate need for hazardous substances. Ensure all work sites are secure before leaving the site. All liquids i.e. paint etc. are to be securely locked away at the end of each day Any hazardous goods storage containers at Bankstown in flood zones will be located on piers or stilts above the known 1% AEP flood level.				
Fuel contaminated runoff from construction works leaving site	Fuel contaminated runoff entering stormwater or waterways (i.e. polluting – not compliant with discharge criteria).	L3	C4	16	All storm water drains must be identified prior to works and controls implemented. Appropriate bunding/storage of substances. Toolbox on site procedures for sediment controls and chemical storage. Educate site staff on requirements and consequences of prosecution.	L4	C4	11	Regular inspections of works site to ensure all controls are in good condition and working.
Acid Sulfate Soils									
Disturbance of Potential Acid Sulfate soils (PASS) and Actual Acid Sulfate 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 sulfate soils, and if the risk is determined to be high then implement the Acid Sulfate Soils Procedure (refer to CSWMP). Awareness training in the identification and management of ASS. Provide containment and treatment facility on site. In accordance with Sustainability Hierarchy, 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									

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Unexpected heritage items encountered.	Work delays, additional studies, approvals required, damage to heritage item.	L3	C4	16	Implement the mitigation measures within the CHMP. 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
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 buildings and / or structures, specifically Punchbowl Station Parcel Office and Candy Shop, Bankstown	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.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					platform and Canterbury Signalling Hut will be developed to minimise direct and indirect impacts to adjacent and / or adjoining heritage items. Heritage specialist/architect to review demolition EWMS/demo plan for Punchbowl Station Parcel Office and Candy Shop, Bankstown platform and Canterbury Signalling Hut Review and maintain heritage register for: •salvage, recycling •Moveable heritage •Inventory of Significant Heritage Elements Review and check works against the Stage 3 HIAs as applicable at each station in accordance with the CHMP. Maintain heritage register for recommendations from HIAs Implement the Heritage Interpretation Strategy				
Biodiversity (flora and fauna)									
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 will be undertaken in accordance with the CEMF and CoA. If trees require trimming or removal, the requirements of CoA E5 will 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.

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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 CSWMP. 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 will be undertaken in accordance with the CEMF and CoA. If trees require trimming or removal, the requirements of CoA E5 will 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 will 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	Implement the controls within Appendix E – Procedure 1: Biodiversity All personnel attending site will be advised of controls and management during the onsite induction. 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. If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment will be undertaken in accordance with the CEMF and CoA. If threatened flora or fauna species are identified on site, work in the vicinity of these species will stop immediately. spotter/catcher/botanist will be engaged to survey the	L5	C3	13	Implement Vegetation Removal Permit System. Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Air Quality									
General Construction works; site establishment, excavations, piling, exposed surfaces or lack of ground cover	Dust activity in close proximity to residential and commercial premises, complaints received.	L3	C5	12	Implement the controls within Appendix E – Procedure 3: Air Quality Toolbox training on dust and air quality Management. Provide dust mitigation measures through water sprays/misting as required. Cover stockpiles that are not to be worked on for a period of greater than 10 days. Erosion and Sediment Control Plans approved before works commence.	L4	C5	7	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		
					AQ monitoring subject to ERAP/SER/ Sustainability				
Exhaust from plant and equipment.	Emissions resulting in air pollution.	L3	C5	12	Inductions and toolbox training on dust and air quality management. Well maintained plant/ equipment and prestart checks and servicing. Non-compliant vehicles removed from site / repaired. AQ monitoring subject to ERAP/SER/ Sustainability	L4	C5	7	Review plant check list prior to operating on site. Undertake verification checks as required.
Abrasive Blasting Activities	Uncontrolled/uncontained airborne fines from abrasive blasting process resulting in air pollution	L3	C5	12	Inductions and toolbox training on Dust and Air Quality Management. Encapsulation on abrasive blasting activities Monitoring and inspections of encapsulation	L4	C5	7	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
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	Community notifications in accordance with the OCCS. Site vehicles shall be parked within the rail corridor or corridor side of the street and not affect public parking area where possible. Develop CTMP / Traffic control procedures and follow parking restrictions as per ECM.	L4	C5	7	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets. Supervisor and traffic controller to enforce traffic management requirements
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	L3	C5	12	Deliveries of plant and materials shall be undertaken outside of peak periods where possible. Site vehicles shall be parked within the rail corridor and not affect public parking areas.	L4	C5	7	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets.

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Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	resulting in complaints.				Scheduled road movements shall be minimised where possible. Oversized deliveries will be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services. Only use authorised heavy vehicle haulage routes as per EIS Approved Traffic Management Plans in consultation with relevant authorities. Detour routes to be advertised/ notified. Approved access routes, detailed Traffic Control Plans. Clear notifications / signage				
Management of heavy vehicles / access routes.	Complaints from sensitive receivers due to increased level and frequency of traffic volume.	L3	C5	12	Deliveries of plant and materials shall be undertaken outside of peak periods where possible & booked in via Datascope Datascope to be used as the vehicle & plant onboarding system Plant drop off and pick up (in relation to CoA E51) • In the first instance park within the rail corridor (Protection Officer required) • If parking not available in rail corridor; • Must be legally parked • Parking only permitted on the rail corridor side (not residential side) • If within 400m of a station contact Environmental team • Council Plant Parking permit may be required (responsibility of S2B Supply Chain Partner to enquire)	L4	C5	7	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Permits from local council and/or TfNSW

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		

					• No parking:
					  • In informal verge, Council verge, grass area or garden (must be on bitumen/hardstand or compacted DGB)
					  • Under tree drip line (ie on top of root zone)
					  • On top of service such as high pressure gas or fuel line
					  • Under overhead wires (unless mitigations or agreement in place)
					  • That would impact pedestrian or cycle networks
					Only use authorised heavy vehicle haulage routes as per EIS
					Scheduled road movements shall be minimised where possible.
					Oversized deliveries will be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services.
					Designated access routes.
					Approved CTMP.
					Community Notifications.
					Pedestrian management with traffic controller in place where required.
					AQ monitoring subject to ERAP/SER/ Sustainability requirements				

Truck deliveries out of normal working hours	Un-approved deliveries resulting in non-conformance with project requirements.	L3	C5	12	Deliveries of plant and materials shall be undertaken outside of peak periods where possible & booked in via Datascope.	L4	C5	7	Delivery drivers provided with haulage routes prior to travelling to site and delivery times. Complete regular toolbox talks on how to minimise impacts in relation to traffic.

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Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	Noise impact to community / potential complaints.				Datascope to be used as the vehicle & plant onboarding system Site vehicles shall be parked within the rail corridor and not affect public parking areas. Plant drop off and pick up (in relation to CoA E51) • In the first instance park within the rail corridor (Protection Officer required) • If parking not available in rail corridor; • Must be legally parked • Parking only permitted on the rail corridor side (not residential side) • If within 400m of a station contact Environmental team • Council Plant Parking permit may be required (responsibility of S2B Supply Chain Partner to enquire) • No parking: • In informal verge, Council verge, grass area or garden (must be on bitumen/hardstand or compacted DGB) • Under tree drip line (ie on top of root zone) • On top of service such as high pressure gas or fuel line • Under overhead wires (unless mitigations or agreement in place) • That would impact pedestrian or cycle networks				

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Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					Personnel training of noise awareness to community included in induction and toolboxes. Induction on Construction Hours for deliveries. Communication of delivery times to suppliers. Community Notifications on project activities occurring locally. Code of conduct / selection criteria in place for subcontractors. Out of hours works approval where required. Approved traffic/access routes. Planning and staging of works in approved hours as much as practical. No deliveries to Belmore Triangle before 7am outside of possession work.				
Pedestrian/Cyclist access	Loss or disruption of pedestrian and/or cyclist access around the project site	L3	C5	12	Construction Traffic Management Plan to be in place Traffic Control Plans to be in place Clear signage Appropriate barriers, fencing or other to direct pedestrians and cyclists	L4	C5	7	Regular inspections of work fronts
Visual Amenity									
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 Refer to Visual Amenity Management Plan Shade cloth	L4	C5	7	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		
					Screening on double stack buildings where possible and in consultation with impacted residents.				
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-A19). Use of site compounds will comply with the requirements of the CEMP and Sub-plans, CoA, REMM and CEMF to ensure environmental impacts are adequately managed. Any site offices, ancillary facilities or hazardous goods storage containers will be located on piers or stilts above the known 1% AEP flood level Temporary use of the compounds for laydown unless raised on piers or stilts above the known 1% AEP flood level No stockpiling of spoil within flood zones at the following locations within 3 days of potential storms: • Bankstown Station compounds • Existing rail corridor and surrounds near Marrickville Station • Existing rail corridor located east of Canterbury Station • Existing rail corridor 100m west of Canterbury Station • Existing rail corridor 100m west of Campsie Station	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Canterbury Compound appropriate management of the ancillary facility with consideration of	Noise from compound Light pollution from the compound	L4	C4	11	If permitted, install double stack office to provide noise attenuation and to block light where possible	L5	C4	8	Toolbox talks to workers and staff on being sensitive to neighbours. Toolbox talks/pre-starts on archaeological management requirements

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
community sensitive issues	Impacts to trees Privacy/Visual amenity Archaeology				Add louvers or shading to windows for privacy where possible Tree protection and signage Shade cloth Screening on double stack buildings where possible and in consultation with impacted residents. Undertake works in accordance with S2B Archaeological Method Statement *It is noted that community consultation is ongoing and some control measures may change in response to this or as the project progresses				
Bankstown Compounds appropriate management of the ancillary facility with consideration of community sensitive issues and flood	Noise from compound Light pollution from the compound Impacts to trees Privacy/Visual amenity	L4	C4	11	Tree protection and signage Shade cloth Screening on double stack buildings where possible and in consultation with impacted residents. Undertake works in accordance with S2B Archaeological Method Statement It is noted that community consultation is on going and some control measures may change in response to this or as the project progresses Any site offices or ancillary facilities will be located on piers or stilts above the known 1% AEP flood level Any laydown of materials or equipment will be temporary or raised out of potential flood levels. Monitoring of extreme weather events Removal of equipment and materials out of potential flood areas	L5	C4	8	Toolbox talks to workers and staff on being sensitive to neighbours.
Utilities									

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
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 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.	L5	C4	8	Permit to Disturb Service searching Detailed Site Survey management

Sydney Metro Consequence Criteria

	ENTERPISE 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 Insignificant	C5 Minor	C4 Moderate	C3 Major	C2 Severe	C1 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

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Appendix D: Sydney Metro Environment and Sustainability Policy

Environment & Sustainability Statement of Commitment

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Sydney Metro will deliver great services, places and transport infrastructure for our customers while protecting the environment, contributing to economic prosperity and delivering social benefits for the communities we serve. We have a duty to undertake our activities in the interest of the greater good, to move beyond compliance and be a genuine leader in both environmental management and sustainability.

Sydney Metro is committed to:

- Minimising our impacts and leaving a positive environmental and social legacy;
- Delivering a resilient asset and service for our customers;
- Collaborating with stakeholders to innovate and drive sustainable outcomes; and
- Embedding sustainability into our activities;

To deliver on these commitments Sydney Metro will:

Leave an environmental and social legacy

- Protect the environment, prevent pollution and comply with legal and other requirements.
- Manage resources and waste efficiently, exploring opportunities to minimise waste, use recycled and low impact materials and reduce our environmental footprint.
- Promote a diverse and inclusive workforce and supply chain, build capability and capacity within industry, and increase Aboriginal participation.
- Responsibly minimise environmental and social risks in our supply chain.
- Take reasonable steps to ensure that the goods and services we procure are not the product of modern slavery.
- Create liveable places that are well integrated and promote active and sustainable transport.
- Conserve and enhance the natural environment and our built and cultural heritage.
- Work collaboratively with delivery partners to provide social benefits to the communities in which we work.

Drive resilience

- Tackle climate change and contribute to the NSW Government target of net zero emissions.
- Deliver Sydney Metro assets and operations that are resilient to a changing climate, and work with stakeholders to proactively respond to emerging challenges and opportunities.
- Promote the greening of our cities to help combat the 'urban heat island' effect.

Collaborate to deliver sustainable outcomes

- Align with and respond to Transport for NSW policy and other NSW Government priorities.
- Establish and maintain positive relationships with communities and stakeholders to harness local knowledge and maximise opportunities to add value across the project lifecycle.
- Collaborate and consult with Aboriginal stakeholders to understand how we can best respect and celebrate Aboriginal cultural values including Designing with Country.
- Provide industry leadership by setting benchmarks, encouraging innovation and driving continual improvement with our delivery partners.
- Increase environmental awareness amongst staff and customers to drive more sustainable behaviours.

Embed sustainability

- Establish robust objectives and targets that are measurable and take into account whole-of-life considerations.
- Maintain an environmental management system that is integrated into our projects and continually improved to enhance environmental performance.
- Apply effective assurance processes to monitor environment and sustainability performance including ensuring accountability, incentivising beyond compliance behaviours and implementing corrective actions as required.
- Embed sustainability considerations into key project decisions across the project lifecycle.
- Provide appropriate training and resources to meet our obligations and commitments.
- Publicly report on sustainability performance.

Peter Regan
Chief Executive, Sydney Metro

This Statement of Commitment supersedes previous versions of the Sydney Metro Environment & Sustainability Policy and aligns with the cluster wide Transport for NSW Environment & Sustainability Policy which has been adopted by Sydney Metro. It applies to all people working for Sydney Metro.

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Appendix E: Environmental Procedures- Environmental Risk Action Plan

Procedure 1: Environmental Risk Action Plan- Biodiversity

Impact: Biodiversity impacts related to the Project are expected to be minor. There will be some removal of trees and vegetation associated with S2B-SWM3 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
	Spreading of pathogens, specifically myrtle rust	L4	C3	17

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 *Noxious Weeds Act 1993.*	Applicable	Environmental Manager Construction Manager Site Supervisor
EPO Biodiversity 3 – The biodiversity outcome is consistent with the *Framework for Biodiversity Assessment* (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 *Biosecurity Act 2015*. Weeds of national environmental significance would be	Applicable	Environmental Manager Construction Manager

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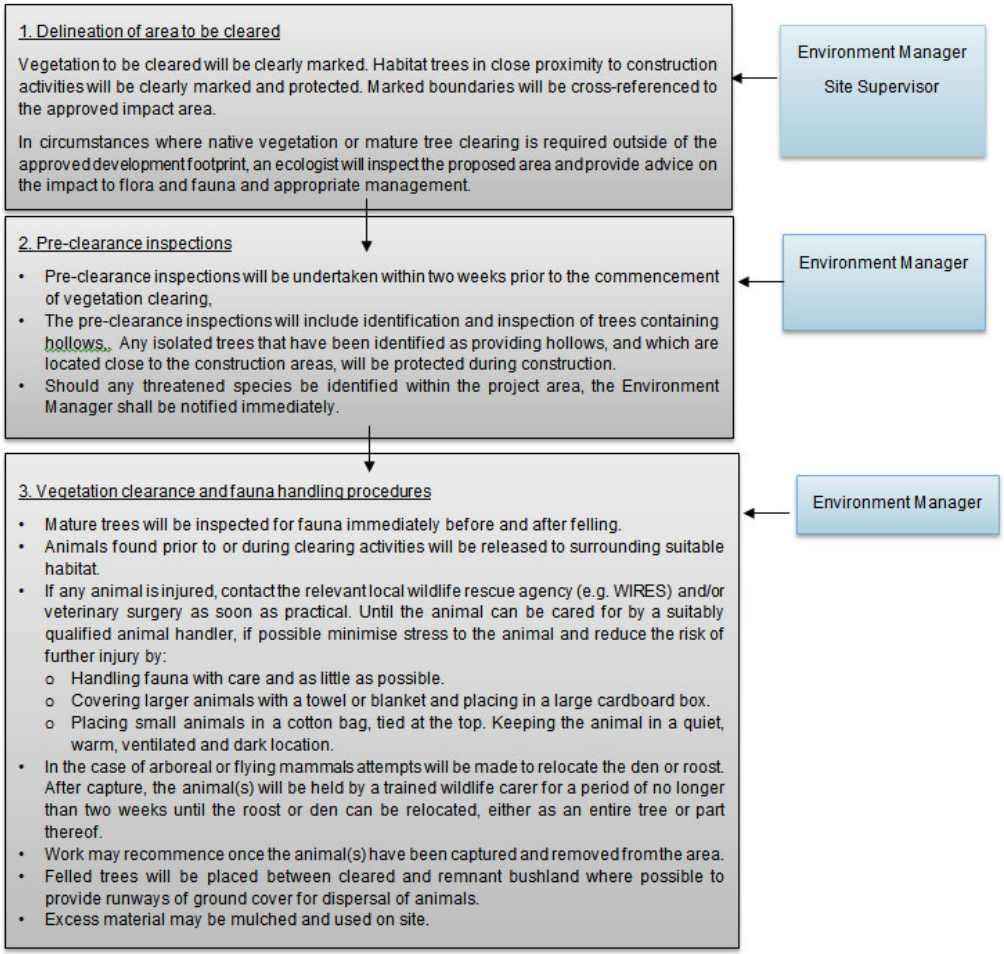
managed in accordance with the Weeds of National Significance Weed Management Guide.		Site Supervisor
REMM LV4 - The management of trees during detailed design and construction planning would be guided by the project's Tree Management Strategy, which would be developed in consultation with councils and 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.	Applicable	Environmental Manager Construction Manager Site Supervisor
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.	Applicable	Environmental Manager Construction Manager Site Supervisor

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

Mitigation Measure	Responsible
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	Design Manager Environmental Manager
A Tree Report will be produced by a qualified arborist in consultation with the design team and Environmental Manager.	Environmental Manager Construction Manager
Appropriately trained and qualified tree removal contractors will be used.	Construction Manager Site Supervisor
Awareness training in the need to preserve vegetation to be retained.	Environmental Manager Construction Manager
Barricading or other suitable protection measures for trees to be retained will be provided	Construction Manager Site Supervisor
Biodiversity offsetting will occur in accordance with CoA E3 where impacts to threatened ecological communities or endangered species cannot be avoided.	Environmental Manager
Where required in accordance with the design some trees will be removed and offset in accordance with requirements of CoA E4 and CoA E6.	Environmental Manager Site Supervisor

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If native fauna is identified within the disturbance footprint, JHLORJV's Environmental Manager will be contacted immediately. All necessary steps to minimise harm and mortality to such animals is required.	Construction Manager Site Supervisor
Open excavations and storage areas will be inspected regularly for the presence of fauna species.	Site Supervisor
No clearing or vegetation removal will occur without approval.	Environmental Manager Construction Manager Site Supervisor
All vegetation to be retained will 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.	Environmental Manager Construction Manager Site Supervisor
Works will only be undertaken in designated areas.	Construction Manager Site Supervisor
JHLORJV will identify and remove any weeds within their work area. Any weeds will be lawfully disposed of to a licenced facility.	Environmental Manager Construction Manager Site Supervisor
Segregate weed impacted waste material and will be dispose of to a licenced facility.	Construction Manager Site Supervisor
Plant and machinery before entering and leaving worksite to ensure no dirt remains as it may cause weeds to spread.	Construction Manager Site Supervisor
Educate work force on common weeds within Bankstown rail corridor.	Environmental Manager
Plant and equipment brought on to site must be cleaned and free of deleterious material, mud and other material that may harbour weed seeds.	Site Supervisor
Construction plant, equipment and materials are not to be stored within the dripline of any trees or vegetation to be retained.	Construction Manager Site Supervisor
Certain environments are more susceptible to pathogens like Myrtle rust, chytrid fungus, and Phytophthora due to specific conditions that favour their growth and spread. Myrtle rust Prefers warm, moist environments with temperatures between 15-25°C and high humidity. Less applicable due to the conditions within the project area is the spread of chytrid fungus, and Phytophthora due to prevalence in aquatic environments or wet, poorly drained soils and environments with standing water. inspect plants for symptoms of Myrtle rust, such as yellow spores on leaves and stems sterilize tools and equipment with alcohol or a disinfectant before and after use in areas identified as a risk for myrtle rust.	Environmental & Construction Manager Site Supervisor
The following clearing procedure will be implemented should additional clearing be required.	**See flow chart**



Timeframe	Duration of the works.
Monitoring & Reporting	Tree Report Weekly inspections

	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: Environmental Risk Action Plan-Groundwater

Impact: There is some potential for piles and underline crossing to intersect the groundwater table

<table>
<tr><td>Objective</td><td colspan="4">• 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</td></tr>
<tr><td>Targets</td><td colspan="4">All groundwater to be tested before dewatering occurs</td></tr>
<tr><td>Legal, Contractual & Other Requirements</td><td colspan="4">• 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</td></tr>
<tr><td>Site specific planning / approval conditions / licence conditions</td><td colspan="4">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.</td></tr>
<tr><td rowspan="2">Potential impacts and Initial Risk Rating
Refer to Appendix 3 for Risk Matrix</td><td>Potential impact</td><td colspan="3">Initial Risk Rating</td></tr>
<tr><td></td><td>P X</td><td>C</td><td>Risk</td></tr>
<tr><td></td><td>Inappropriate dewatering of groundwater impacting on receiving environment or groundwater source</td><td>L4</td><td>C5</td><td>7</td></tr>
<tr><td>Controls (means and resources)</td><td colspan="4">Commitments & Mitigation Measures outlined in the EIS / SPIR
<table>
<tr><th>Mitigation Measure</th><th>Applicable to the Project</th><th>Responsible</th></tr>
<tr><td>N/A</td><td>N/A</td><td>N/A</td></tr>
</table>
Site Specific Mitigation & Control Measures developed as part of this CEMP:
<table>
<tr><th>Mitigation Measure</th><th>Responsible</th></tr>
<tr><td>A dewatering permit will be in place for all dewatering activities, including the dewatering of any groundwater.</td><td>Environmental Manager
Site Supervisor</td></tr>
</table></td></tr>
</table>

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		Awareness training will be provided to workers as required.	Environmental Manager Site Supervisor
		Water treatment units will be utilised and maintained where water testing indicates treatment is required.	Environmental Manager Construction Manager Site Supervisor
		Dewatering is only permitted to occur on site or to licenced discharge points	Environmental Manager Construction Manager Site Supervisor
Responsibilities	• 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 • JHLORJV'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	• 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 P X	C Risk
	Inappropriate dewatering of groundwater impacting on receiving environment or groundwater source	L5	C5 4

Procedure 3: Environmental Risk Action Plan-Air Quality

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

<table>
<tr><td>Objectives</td><td colspan="4">• 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.</td></tr>
<tr><td>Targets</td><td colspan="4">• No dust impacting on offsite activities or surrounding residences
• No release of contaminants, (odour, smoke etc.) into the air.
• No recurring or major exceedances of SWM3 dust emission goals attributed to Project Works.</td></tr>
<tr><td>Legal, Contractual and Other Requirements</td><td colspan="4">• Planning consent conditions – SSI 8256
• CEMF Section 16
• Protection of the Environment Operations Act 1997
• Protection of the Environment Operations (Clean Air) Regulation 2010
• ISC Dis-4 Air quality requirements (Sustainability)</td></tr>
<tr><td>Site specific planning / approval conditions / licence conditions</td><td colspan="4">• CoA E2
• Mitigation measures committed in the EIS & SPIR
• EPL 21147 Condition O3.1</td></tr>
<tr><td rowspan="4">Potential impacts and Initial Risk Rating
Refer to Appendix 3 for Risk Matrix</td><td rowspan="2">Potential impact</td><td colspan="3">Initial Risk Rating</td></tr>
<tr><td>P X</td><td>C</td><td>Risk</td></tr>
<tr><td>Dust or plant emission impacting on the receiving environment and human health</td><td>L3</td><td>C5</td><td>12</td></tr>
<tr><td>Abrasive blasting waste emissions impacting on the receiving environment and human health</td><td>L3</td><td>C4</td><td>16</td></tr>
<tr><td></td><td>Odour from works causing disturbance to local receivers</td><td>L4</td><td>C5</td><td>7</td></tr>
<tr><td>Controls (means and resources)</td><td colspan="4">Commitments & Mitigation Measures outlined in the EIS / SPIR
<table>
<tr><th>Mitigation Measure</th><th>Applicable to the Project</th><th>Responsible</th></tr>
<tr><td>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>Applicable</td><td>Environmental Manager
Construction Manager
Site Supervisor</td></tr>
</table>
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.</td></tr>
</table>

Mitigation Measures	Responsible
All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.	Construction Manager Site Supervisor
Machinery will 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 will be limited to designed entries and exits, haulage routes and parking areas.	Construction Manager Site Supervisor
Dust generation will 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 will be covered to reduce dust generation in transit.	Site Supervisor
Access points will 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 will 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 will 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) will 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	• 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. • Environmental Manager (or delegate) to review quantitative dust monitoring data in response to complaints.			
Timeframe	Duration of Construction			
Monitoring and Reporting	• Weekly inspections. Incidents or complaints to be recorded on form Environmental Incident and Complaint Report • Quantitative dust monitoring – Reviewed in response to complaints. Continuous dust monitoring (PM10 and PM2.5) is being undertaken at locations within the project boundary (where possible closest to sensitive receivers) where earthworks and dust emitting activities are occurring. If a complaint is received, the monitoring data will be reviewed to determine if the air quality goals were exceeded (section 2.8). A monitoring report may be composed, and additional mitigation measures will be implemented to reduce further impacts.			
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: Environmental Risk Action Plan-Waste, Spoil & Recycling

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

<table>
<tr><td>Objectives</td><td colspan="4">• 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 Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows:
○ Avoidance of unnecessary resource consumption
○ Resource recovery (including reuse, reprocessing, recycling and energy recovery)
○ Disposal.</td></tr>
<tr><td>Targets</td><td colspan="4">• 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.</td></tr>
<tr><td>Legal, Contractual and Other Requirements</td><td colspan="4">• Planning consent conditions – SSI 8256, CoA C3(c)
• CEMF Section 6 and Section 17
• Protection of the Environment Operations Act 1997
• Protection of the Environment Operations (Waste) Regulation 2014</td></tr>
<tr><td>Site specific planning / approval conditions / licence conditions</td><td colspan="4">CoA – E73 to E76
REMM – WM1 to WM7
Mitigation measures committed in the EIS & SPIR
EPL 21147 Conditions O4.1- O4.10</td></tr>
<tr><td rowspan="2">Potential impacts and Initial Risk Rating
Refer to Appendix 3 for Risk Matrix</td><td>Potential impact</td><td colspan="3">Initial Risk Rating</td></tr>
<tr><td></td><td>P X</td><td>C</td><td>Risk</td></tr>
<tr><td></td><td>Inappropriate waste disposal impacting on environmental receivers</td><td>L3</td><td>C5</td><td>12</td></tr>
<tr><td>Controls (means and resources)</td><td colspan="4">Commitments & Mitigation Measures outlined in the EIS / SPIR
<table>
<tr><th>Mitigation Measure</th><th>Applicable to Project Locality</th><th>Responsible</th></tr>
</table></td></tr>
</table>

	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.	Applicable	Construction Manager Site Supervisor
	CoA 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.	Applicable	Environmental Manager Construction Manager Site Supervisor
	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 *Protection of the Environment Operations (Waste) Regulation 2014*, or to any other place that can lawfully accept such waste.	Applicable	Environmental Manager Construction Manager Site Supervisor
	CoA E76 - All waste must be classified in accordance with the EPA's Waste Classification Guidelines 2014, with appropriate records and disposal dockets retained for audit purposes.	Applicable	Environmental Manager Construction Manager Site Supervisor
	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.	Applicable	Design Manager Sustainability Manager Environmental Manager Construction Manager
	REMM WM2 - A recycling target of at least 90 per cent would be adopted.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor
	REMM WM3 - Spoil would be managed in accordance with the spoil management hierarchy.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor
	REMM WM4 - Target 100 per cent reuse of reusable spoil.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor

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

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	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 CSWMP).	Environmental Manager Construction Manager Site Supervisor
	Implement the mitigation measures within the Construction 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 dockets	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

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	The material imported to site will require a statement of compliance from the supplier of the material to link the actual material imported to site with a tested stockpile or batch (routine and continuous testing). The statement of compliance will include testing results to demonstrate the material if free from asbestos. Upon arrival to the site, the subcontractor will need inspect the material with an appropriately qualified S2B project representative to confirm and document by visual inspection no asbestos identified.	Environmental Manager Construction Manager Site Supervisor		
Responsibilities	• 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 until all Principal Contractor waste obligations are met			
Monitoring and Reporting	• 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 JHLORJV's Waste Register.			
Potential impacts and Residual Risk Rating Refer to Appendix 3 for Risk Matrix	**Potential impact**	Residual Risk Rating		
		P X	C	Risk
	Inappropriate waste disposal impacting on environmental receivers	L4	C5	7

Procedure 5: Environmental Risk Action Plan- Delivery and Storage of Chemicals; Fuels and Oils including Dangerous Goods Requirements

Impact – There is a low risk associated with the delivery and storage of chemicals on the South West Metro Corridor Project. JHLORJV will provide appropriate storage facilities on the project site and will engage companies that are reputable (and licenced where required) to transport such chemicals.

Objective	• To comply with contractual and legislative requirements in relations to the transport of dangerous goods • To comply with contractual and legislative requirements in relation to the storage of chemicals, fuels and oils on the site. • To ensure contractual and legislative requirements in relation to hazardous substances and dangerous goods are adequately addressed for all operations – there are specific additional requirements relating to the storage and transport of dangerous goods
Targets	• Minimise spills or uncontrolled release of fuel, oils or chemicals associated with JHLORJV's Operations. • Compliance with relevant transport and storage requirements • All vehicles transporting dangerous goods have appropriate placards, licenses and emergency equipment and procedures

<table>
<tr><td>Legal, Contractual & Other Requirements</td><td colspan="4">• AS/ NZS 1940: 2015 – The Storage and Handling of Flammable and Combustible Liquids
• Dangerous Goods (Road and Rail Transport) Act 2008
• Dangerous Goods (Road and Rail Transport) Regulation 2008
• Australian Dangerous Goods Code, 7th Edition
• Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005)
• Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011)</td></tr>
<tr><td>Site specific planning / approval conditions / licence conditions</td><td colspan="4">N/A</td></tr>
<tr><td rowspan="4">Potential Impacts and Initial Risk Rating*

*Refer to CEMP – Appendix 3 for Risk Rating Matrix</td><td rowspan="2">Potential impact</td><td colspan="3">Initial Risk Rating</td></tr>
<tr><td>P X</td><td>C</td><td>Risk</td></tr>
<tr><td>Fuel or chemical leaks impacting on receiving environment</td><td>3</td><td>3</td><td>9</td></tr>
<tr><td>Inappropriate transport and handling of dangerous/hazardous substances leading to impacts to human health or environment</td><td>2</td><td>4</td><td>8</td></tr>
<tr><td></td><td>Inappropriate spill management</td><td>3</td><td>3</td><td>9</td></tr>
<tr><td>Controls (means and resources)</td><td colspan="4">Commitments & Mitigation Measures outlined in the EIS / PIR
<table>
<tr><th>Mitigation Measure</th><th>Applicable to S2B Locality</th><th>Responsible</th></tr>
<tr><td>REMM HRS4 - All hazardous substances that may be required for construction and operation would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005) and the Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011).</td><td>Applicable</td><td>Safety Manager
Environmental Manager
Construction Manager
Site Supervisor</td></tr>
</table>
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.
<table>
<tr><th>Mitigation Measures</th><th>Responsible</th></tr>
</table></td></tr>
</table>

	Minimise storage of fuel, oil, chemicals or other dangerous goods on site, though efficient and timely ordering.	Construction Manager Site Supervisor
	The SDS and material risk assessment and including any specific control measures are to be submitted where required to the Client's Representative for each and every substance to be brought on to site.	Safety Manager
	A risk assessment relating to the use of these materials will be completed in accordance with the Construction Health and Safety Plan prior to the arrival of these goods to site.	Safety Manager
	SDS and associated documentation for each material will be reviewed prior to the completion of the risk assessment for the relevant construction process. A copy to be included with the SWMS.	Safety Manager Environmental Manager Construction Manager Site Supervisor
	Ensure SDSs are available on site for all fuels, oils, chemicals and dangerous goods. Suppliers are to provide SDS prior to dispatch of the material.	Construction Manager Site Supervisor
	Chemicals, fuels and oils to be stored in a securely bunded area with appropriate signage, at all times when not specifically in use.	Construction Manager Site Supervisor
	Chemicals fuels, oils and chemicals to be stored inside impervious bunds of sufficient capacity to contain 110% of the stored volume. Bunded areas must have sufficient cover to prevent ingress of rain.	Construction Manager Site Supervisor
	Materials removed from the bunded storage area for use are to be returned to the bund at the end of each shift	Construction Manager Site Supervisor
	Storage sites are to be > 20m away from operational facilities, drainage lines, and areas prone to flooding or on slopes > 1V:10H.	Construction Manager Site Supervisor
	Driver or Supervisor to be in attendance at all times when unloading of fuel, oil or chemicals takes place on site.	Site Supervisor
	No water to be discharged from bunded areas into site drainage system. Contaminated water to be removed by appropriately licensed contractor & discharged to a suitably licensed waste facility.	Construction Manager Site Supervisor
	Delivery drivers are to be provided with specific drop off and storage instructions.	Construction Manager Site Supervisor
	Spill kits & absorbent material to be located adjacent to storage bunds.	Environmental Manager Construction Manager Site Supervisor

	Training is to be provided to the workforce in the application of this ERAP and the use of spill kits.	Environmental Manager Construction Manager Site Supervisor
	Absorbent material used to clean up spills to be disposed of in accordance with the EPA Waste Classification Guidelines, 2014.	Environmental Manager Construction Manager Site Supervisor
	A register of Chemicals, Fuels/Oils and Hazardous substances is to be kept onsite and maintained for the duration of the project.	Safety Manager Construction Manager Site Supervisor
	Each construction method statement shall identify the use of chemicals, fuels & oils and hazardous substances.	Safety Manager Construction Manager Site Supervisor
	SWMSs to address the specific requirements relevant to the work will be undertaken and document relevant site control measures.	Safety Manager Construction Manager Site Supervisor

Dangerous Goods

Mitigation Measures	**Responsible**
Ensure transporters of these materials are appropriately licensed. This includes relevant licenses for vehicles and drivers.	Safety Manager Construction Manager Site Supervisor
Dangerous goods that are to be transported in receptacles greater than 500lt or 500kg may require specific licenses and shall not be transported by JHLORJV without the Project Manager/Workplace Manager's approval.	Safety Manager Construction Manager Site Supervisor
Where dangerous goods are transported by JHLORJV, a SWMS must be developed and include dangerous goods requirements.	Safety Manager Construction Manager Site Supervisor

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Transport information/manifest is required to be included with any quantity of Dangerous Goods transported by JHLORJV – Form 1232 Dangerous Goods Transport Note is to be used unless it can be demonstrated that the activity is exempt.	Safety Manager Construction Manager Site Supervisor
The SWMS statement must address the requirement for Licensing, Placards or other specific regulatory requirements	Safety Manager Construction Manager Site Supervisor
• Transport activities in quantities that trigger the requirements of a "Placard Load" under the regulations require the following: • Transport vehicle to have appropriate Dangerous Goods Placard • Transport documents including manifests • Emergency procedures and information in an appropriate holder • 30B fire extinguisher • Double-sided reflectors • Driver safety equipment and PPE • Goods must be secured and where required segregated from incompatible goods. • Dangerous goods must be appropriately marked in accordance with the Australian Dangerous Goods Code	Safety Manager Construction Manager Site Supervisor

Typical dangerous goods associated with our operations include the following:

Type of Goods	DG Class	Type of Goods	DG Class	Type of Goods	
LPG Gas	2.1	Epoxy paint including hardener	8	Plumbing adhesive	3
Open Gear Lubricant	2.1	Chemical Anchor - parts A & B	8	Diesel	3
Marker Paint	2.1	Chemical Anchor	8	Joint/gap sealant	3
Silicone Lubricant	2.1	Chemical Anchor	8	Dry Film Lubricating Paint	3
Fuel Gas for welding/cutting	2.1	Adhesive Mortar	8	Joint/gap sealant	5.2
Fuel Gas for welding/cutting	2.2	Acid	8	Sealant	6.1
Air Operated Tool Lubrication	3	Degreaser (Pile Rigs)	9	Flocculent	8

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	Zinc Primer Paint	3	Engine Coolant	9	Rail Welding Consumables	1.4 S
	Air tool lubricant - workshop	3	Antifreeze	9	Adhesive	3
	Petrol-Unleaded/Diesel	3	Grout	9		
	Sealant	3	Form Oil	9		

Dangerous Goods Storage

Mitigation Measures	Responsible
Dangerous goods storage on site must comply with the requirements of AS 1940:2017 including maintaining separation distances for incompatible materials.	Safety Manager Construction Manager Site Supervisor
The proposed materials need to be assessed for compatibility and required separation distances or control measures implemented.	Safety Manager Construction Manager Site Supervisor
Flammable materials storage is to be >20m from site facilities, officers, amenities or protected places.	Construction Manager Site Supervisor
Quantities to be stored must be assessed to determine if they are considered manifest quantities - manifest quantities will require notification to WorkCover.	Construction Manager Site Supervisor
A storage location plan is required and needs to include internal layout, location of registers/manifests for the storage location.	Safety Manager Construction Manager
Bunding to be impervious and of sufficient capacity to contain 110% of the stored volume	Construction Manager Site Supervisor
Appropriate spill containment material and fire extinguishers are also required.	Safety Manager Environmental Manager Construction Manager Site Supervisor

Timeframe	Duration of operations. The requirements apply to goods transported by JHLORJV and third parties.

Monitoring and Reporting	• Plant / project risk assessments • Inspections as required. • Register of Chemicals, Fuels/Oils and Hazardous Substances • Incidents or spills to be recorded on form Environmental Incident Report (Environmental Incident Report). • Storage areas are to be inspected by the Supervisory personnel on a weekly basis.			
Potential Impacts and Residual Risk Rating* ***Refer to CEMP – Appendix 3 for Risk Rating Matrix**	**Potential impact**	Residual Risk Rating		
		P X	C	Risk
	Fuel or chemical leaks impacting on receiving environment	1	3	3
	Inappropriate transport and handling of dangerous/hazardous substances leading to impacts to human health or environment	1	4	4
	Inappropriate spill management	1	3	3

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

Environmental Incident and Non-compliance Reporting Procedure

SM-17-00000096

Metro Body of Knowledge (MBoK)

Applicable to:	Sydney Metro
Document Owner:	Manager, Environment
System Owner:	Executive Director, Safety, Sustainability & Environment
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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 cans include conversations, inspections, incidents, or failures of process.
Environmental Harm	Includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution.
Environmental Incident	An occurrence or set of circumstances, as a consequence of which pollution (air, water, noise, and land) or an adverse environmental impact has occurred or is likely to have occurred.
Environmental Issue	An occurrence or set of circumstances where Environmental Harm or Non-compliance could occur if not rectified.
Environmental Non-compliance	A breach of an Environmental Requirement originating from Planning Approvals, Environment Protection Licenses, lease agreements, and other requirements documented in environmental management plans.

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

Terms and jargon specific to this procedure are defined within SM-17-00000203 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 SM-17-00000105 Environmental Incident and Non-compliance Notification Report Form and Environmental Issues are recorded through environmental inspection reports using SM-17-00000107 Environmental Inspection Report Template. These paper based records are subsequently entered into the Sydney Metro Compliance Register (Section 6.7) which is used to disseminate the data and facilities reporting internally and externally. Note where a Principal Contractor has submitted alternative processes and these have been approved by Sydney Metro they may also be used.

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

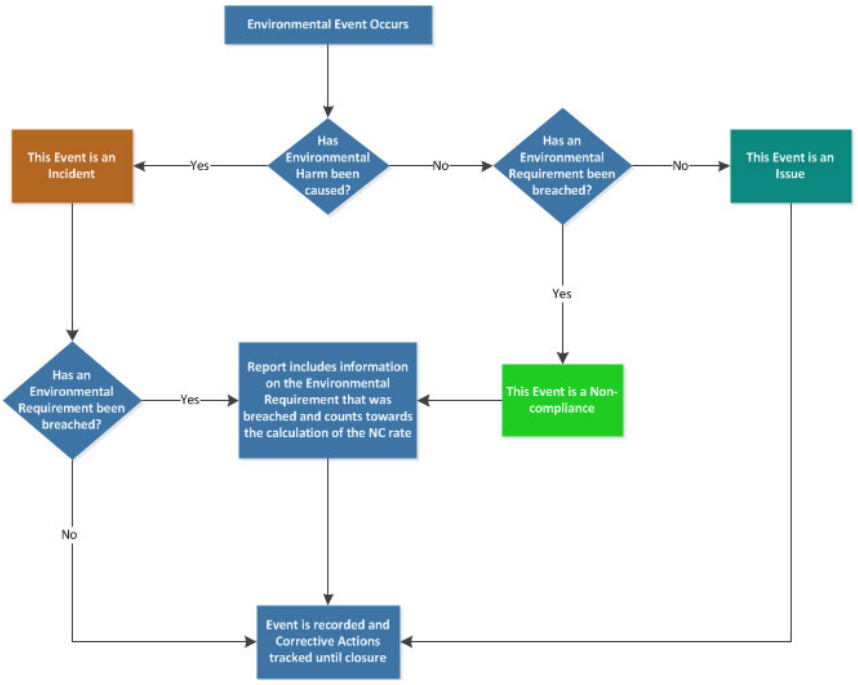


Figure 1: Environmental Event Classification Process

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

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

5.1. Worked Example – Classifying Environmental Events

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

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

5.1.1. Soil and Water Issue

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

5.1.2. Soil and Water Non-compliance

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

5.1.3. Soil and Water Incident

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

5.2. Notifiable Events

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

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

Table 1: Examples of Notifiable Events

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

5.3. Event Types

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

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

Table 2: Environmental Event Types and their descriptions

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

6. Environmental Incident Classification and Management

Sydney Metro has defined an Environmental Incident as:

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

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

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

Table 3: Examples of Environmental Incidents

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

6.1. Incident Classification

Environmental Incidents are classified into one of three Classes that are based upon the consequence descriptors for environmental risks in the Sydney Metro Risk Matrix (refer to SM-17-00000182 Risk Management Standard). Each of these classifications trigger a variety of management actions and/or legislative requirements depending on the severity of the consequence described where Class 3 represents minor consequences and Class 1 represents major consequences.

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

Table 4: Classification System for Environmental Incidents

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

6.1.1. Class 3 Incidents

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

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

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

6.1.2. Class 2 Incidents

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

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

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

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

6.1.3. Class 1 Incidents

Class 1 Environmental Incidents are managed in the same manner as Class 2 Incidents expect where a determination is made by the Chief Executive (or delegate) that a Crisis Management Team should be activated. In this situation SM-19-00053243 Crisis Management Procedure is followed.

6.2. Incident Notification

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

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

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

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

6.2.1. Principal's Representative (PR)

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

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

6.2.2. Environmental Lead (EL)

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



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

6.3. Incident Notification Reports

For all Incidents an Incident Notification Report must be completed and submitted to Sydney Metro within 48 hours. These reports satisfy the requirement for written communication to Sydney Metro and are completed using SM-17-00000105 Environmental Incident and Non-compliance Notification Report Form 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 SM-17-00000040 Health & Safety Incident Reporting & Investigation Standard.

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 SM-17-00000105 Environmental Incident and Non-compliance Notification Report Form within 48 hours by the party responsible for the breach.

7.1. Non-compliance Rate

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

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

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

8. Corrective and Preventative Actions

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

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

Actions must:

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

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

- Monitor corrective action status;
- Escalate issues to the executive where progress on a corrective action is inadequate; and
- Retain all corrective action responses for recording purposes.

8.1. Action Status

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

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

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

9. Related documents and references

Related documents and references
• SM-17-00000022 Environmental & Sustainability Management Manual • SM-17-00000182 Risk Management Standard • SM-17-00000040 Health & Safety Incident Reporting & Investigation Standard • SM-19-00053243 Crisis Management Procedure • SM-17-00000105 Environmental Incident and Non-compliance Notification Report Form • SM-17-00000107 Environmental Inspection Report Template • SM-17-00000203 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

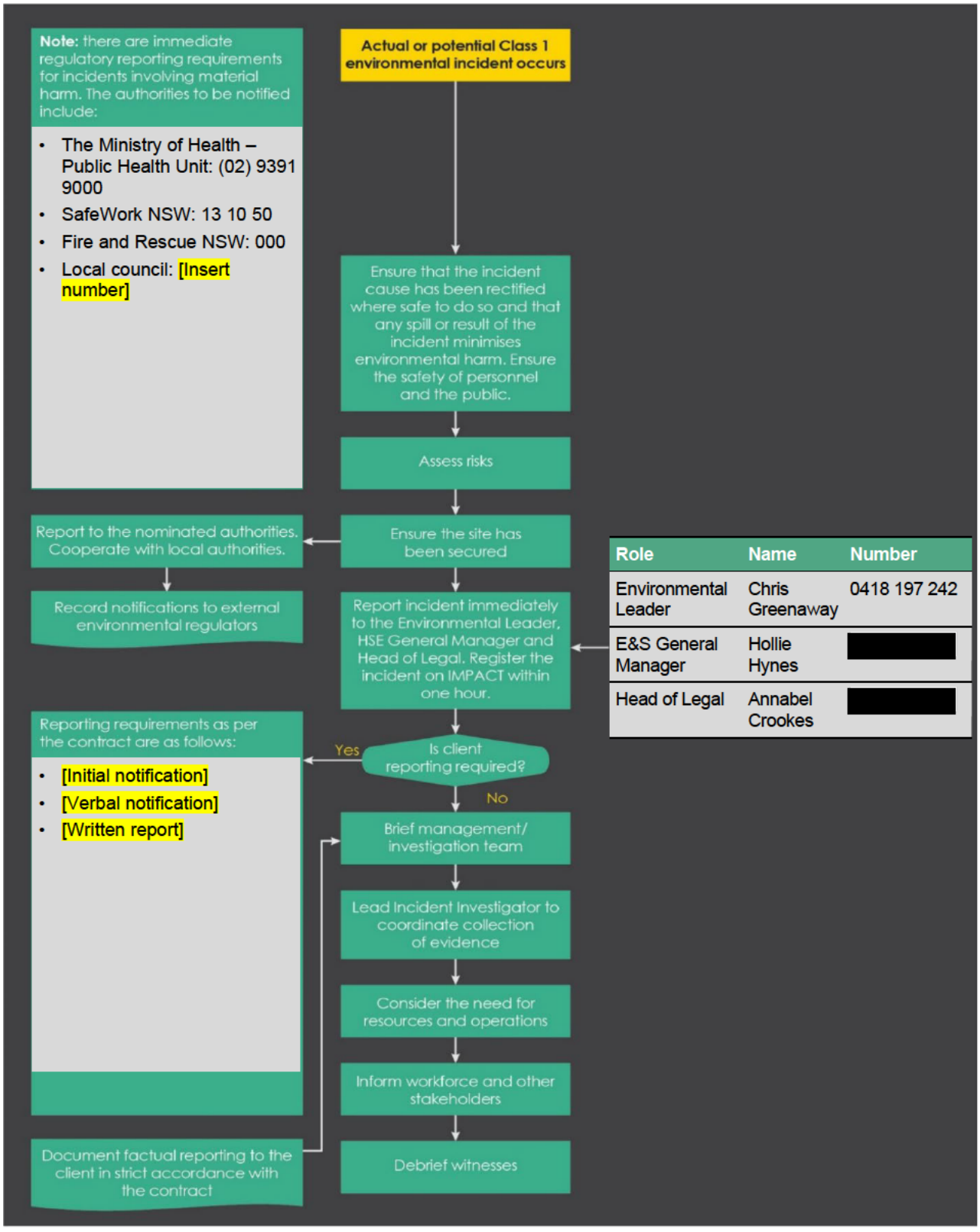
Appendix G: Noise and Vibration Management Plan

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Appendix H: Soil and Water Management Plan

Appendix I: Heritage Management Plan

Appendix J: Class 1 Incident Management Flow Chart and incident investigation guidelines



Actual and potential Class 1 incidents will be subject to an ICAM or TapRooT investigation. The following guidelines outline the environmental incident and complaint investigation procedure. The actual detail required will vary depending on the class of the incident. The Environmental Incident and Complaint Report can be used to document the incident.

Step 1: Identify the class of incident and obtain the incident or complaint details

Step 2: Observe and gather information

The first priority is to understand the incident and how the incident occurred.

- Take samples or obtain results (required for actual Class 1 and 2 incidents), such as laboratory results or in situ samples. For Class 1 and 2 incidents, NATA-certified laboratory results may be required.
- For actual or potential Class 1 and 2 incidents Interview persons involved – such as witnesses, supervisors and experts – where required.
- Inspect the incident scene. Take measurements (do not guess), photos and videos and make drawings, diagrams and sketches.
- Collect related documentation. Attach additional material as appropriate such as work method statements, JSEAs, ERAPs, Erosion and Sediment Control Plans, risk assessments, induction records, toolbox talks, prestart records, environmental training records, subcontractor and client incident reports, relevant design documentation and maintenance records.

Step 3: Give a detailed description of the incident

Outlined exactly what happened and give the following details as applicable:

- Area or people affected and pollutant type if appropriate
- Time, date and weather conditions
- Plant, equipment and organisations involved
- Potential stakeholders involved

Describe the nature of the incident, including:

- Breach of licence condition, Act or regulation
- Discovery of cultural heritage item
- Unauthorised release of harmful substance to environment
- Penalty or fine imposed or protection order or notice issued
- Performance of the environmental controls.

Describe the immediate remedial actions undertaken:

- Notification of relevant parties
- Containment of pollution or clean-up of affected area
- Repair to environmental controls
- Rectification of damage and remediation of the affected area.

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Step 4: Undertake basic level incident analysis

List the elements involved including people, equipment and environment (weather conditions), procedures and organisational elements involved in the incident. List the essential and contributing factors for these items.

Step 5: Identify the corrective and preventative actions

Identify corrective and preventative actions, which may include:

- Changing equipment or machinery design or maintenance
- Improving environmental control measures
- Implementing additional resources
- Changing work methods, procedures or processes
- Changing or adding to induction training
- Addressing organisational issues.

Step 6: Implement the corrective and preventative actions

Implement the corrective and preventative actions identified in Step 5. This includes:

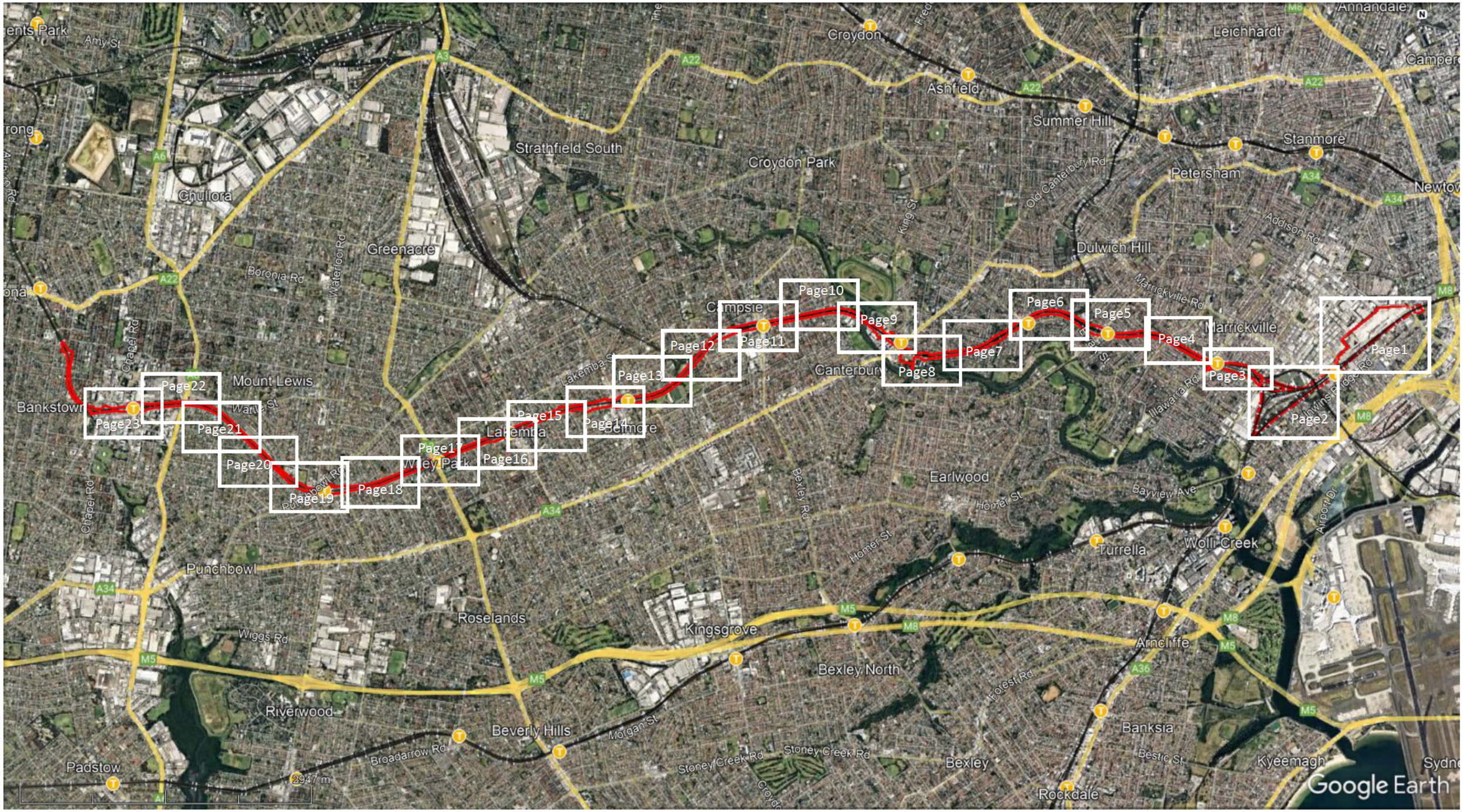
- Outlining responsibilities and accountabilities
- Obtaining relevant approvals for the corrective and preventative actions (such as regulatory authority or client approval)
- Providing proposed completion dates for the approved actions
- Documenting actions implemented and closed out.

Where a Class 1 Incident has occurred, the E&S General Manager will initiate the investigation and allocate responsibilities; an external consultant may be engaged. Authorities are to be notified in accordance with the legislative time frames in NSW.

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Appendix K: Environmental Control Maps (ECMs)

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REV	DESCRIPTION	DATE	REV	DESCRIPTION	DATE
0	Initial Submission	26/09/22	4	Including Minor Ancillary Facility for MSB PC taking over	29/06/2023
1	Added Plant Offloading Locations	18/05/23	5	Including Heritage Garden Bed at Wiley Park Station City Side	15/12/2023
2	General Updates: Plant Parking, Heritage Bridges & Contamination Areas	18/05/23	6	Including TfNSW CA56 and Ancillary Facility for SWM3	12/08/2024
3	Including Station Bracket Scope and possession plant parking at Canterbury	23/06/2023			

LAING O'ROURKE

JOHN HOLLAND

SITE OVERVIEW

SWMC

ENVIRONMENTAL CONTROL MAP

Cover Sheet | A3

Notes applicable to all areas:

1. Report any visual or olfactory (smells) signs of contamination – stop works in immediate vicinity if contamination is suspected
2. Report any unexpected heritage finds – know the limits of the AMZ; particularly at the following stations
    a. Marrickville
    b. Canterbury
    c. Belmore
    d. Lakemba
3. Avoid areas that are Threatened Ecological Communities TEC (including overhang branch & roots damage). No-go zones to be setup at per notes in this plan
4. ATF panels are to be installed around tree drip line as a tree protection zone (TPZ). DO NOT Park plant, equipment & materials under tree drip lines.
5. Ensure any erosion and sediment controls are installed as per the relevant ERSED Plan/Spot location
6. Use a watercart to suppress dust as required
7. Call street sweeper as required
8. Ensure a spill kit is available at each work front
9. Be aware of the 'close' proximity of residents to work areas
10. Project Boundary is the limit of construction activities
11. Plant offloading outside the site boundary are limited to areas shown (short durations prior to and after possessions).
12. Possession plant parking for Canterbury Compound is shown in **Appendix 1**

Hours of Operation:

Unless permitted by Project Environment Manager, construction works and activities must:

(a) only be undertaken between the hours of 0700 and 1800 Monday to Friday; and

(b) only be undertaken between the hours of 0800 and 1800 Saturday; and

(c) not be undertaken on Sundays or Public Holidays.

Station Bracket scope includes installation of bracket to station structures at the following stations:

- Marrickville Station
- Canterbury Station
- Wiley Park Station
- Dulwich Hill Station
- Belmore Station
- Campsie Station
- Hurlstone Station
- Lakemba Station
- Punchbowl Station

The design of the station brackets was prepared by DesignInc specifically to minimise any impacts upon the significant heritage fabric of the railway station buildings. In the context of the overall works, the brackets will have no physical impact and a negligible visual impact upon the railway station buildings.

The station bracket impact has been assessed in a Memorandum (Appendix F of the SWMC Construction Heritage Management Plan) which provided by Sydney Metro.

Metro Service Building (MSB) PC scope includes deploy mobile caravan office (Minor Ancillary Facility, MAF) at the following stations:

- Marrickville Station MSB MAF (CoA - A16)
- Dulwich Hill Station MSB MAF (CoA - A16)
- Hurlstone Park Station MSB MAF (**CoA - A19**)
- Belmore Station MSB MAF (**CoA - A19**)
- Lakemba Station MSB MAF (CoA - A16)
- Wiley Park Station MSB MAF (**CoA - A19**)
- Campsie Station MSB MAF (CoA - A16)
- Punchbowl Station MSB MAF (CoA - A16)

the caravan consisting of the following functional sections in one enclosure to minimise the impact of the ancillary facility:
- Ablution block
- Office area
- Lunch area
- Generator

The Minor Ancillary Facilities at Hurlstone Park Station MSB, Belmore Station MSB and Wiley Park Station MSB will be subject to further approvals (**CoA - A19**). The areas will be used intermittently. The locations of the minor site compounds / laydown areas are included in **Appendix 2**

SWM3 Station scope includes install Minor Ancillary Facility, MAF) at the following stations to support SWM3 station construction:

Ancillary Facility	Status	Ancillary Facility	Status
A16 Sydney Steel Road Laydown	EIS Approved (TfNSW CA56)	A16 Campsie Station Ancillary Facility	EIS Approved (Indicative construction compound C9)
A16 Murray Road Laydown	EIS Approved (TfNSW CA56)	A16 Belmore Station Ancillary Facility	EIS Approved (Indicative construction compound C10)
A19 Way Street Substation Ancillary Facility and Laydown	August 2025 (TfNSW CA56)	A16 Belmore Bridge Road Ancillary Facility	EIS Approved (Indicative construction compound C13)
A19 Marrickville Station Ancillary Facility	Proposed to demob from August 2025	A16 Lakemba Station Ancillary Facility	EIS Approved (Indicative construction compound C16)
A19 Dulwich Hill Station Ancillary Facility	Proposed to demob from August 2025	A16 Wiley Park Station Ancillary Facility	EIS Approved (Indicative construction compound C17)
A16 Hurlstone Park Station Ancillary Facility	EIS Approved (Indicative construction compound C4)	A19 Punchbowl Station Ancillary Facility	Proposed to demob from August 2025
A16 Canterbury Station Ancillary Facility	EIS Approved (Indicative construction compound C6)		

The locations of the minor site compounds / laydown areas are included in **Appendix 3.**

REV	DESCRIPTION	DATE	REV	DESCRIPTION	DATE
0	Initial Submission	26/09/22	4	Including Minor Ancillary Facility for MSB PC taking over	29/06/2023
1	Added Plant Offloading Locations	18/05/23	5	Including Heritage Garden Bed at Wiley Park Station City Side	15/12/2023
2	General Updates: Plant Parking, Heritage Bridges & Contamination Areas	18/05/23	6	Including TfNSW CA56 and Ancillary Facility for SWM3	12/08/2024
3	Including Station Bracket Scope and possession plant parking at Canterbury	23/06/2023			

LAING O'ROURKE

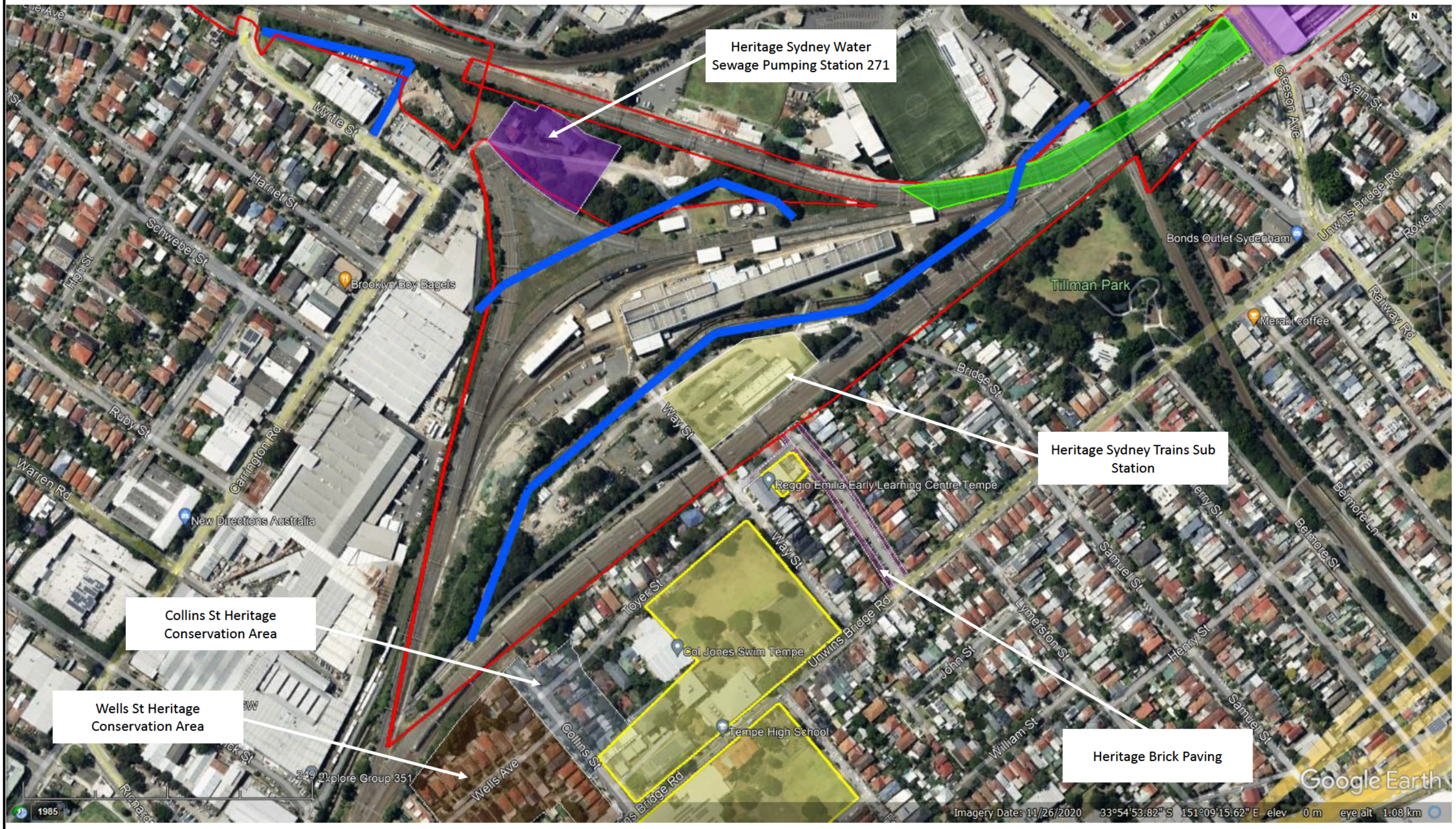
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SITE OVERVIEW

SWMC

ENVIRONMENTAL CONTROL MAP

Cover Sheet | A3



LEGEND

- Project boundary
- Open culvert
- Education Centre and Child Care
- Previously excavated area

REV	DESCRIPTION	DATE
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23
6	Including TfNSW CA56 and AF for SWM3	15/12/23

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ILLAWARRA & VICTORIA ROAD

SWMC

ENVIRONMENTAL CONTROL MAP



LEGEND

- Project boundary
- Open culvert
- Education Centre and Child Care
- Previously excavated area

REV	DESCRIPTION	DATE
4	Including MAF at MSB	29/6/23
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ILLAWARRA & VICTORIA ROAD

SWMC

ENVIRONMENTAL CONTROL MAP

A3



AMZ

Marrickville

AMZ. Archaeologist required for works in this area

Restricted Solid Waste

Monitor this access point

AMZ

Monitor this access point

Arthur St

Byrnes St

Illawarra Rd

Leofrene Ave

Schwebel St

Victoria Rd

Meeks Ln

Meeks Rd

Blamire La

Grove St

Charlotte Ave

Myrtle St

Ivanhoe St

Schwebel St

Harriet St

Google Earth

100 m

N

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23
6	Including TfNSW CA56 and AF for SWM3	15/12/23

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ILLAWARRA & VICTORIA ROAD

SWMC

ENVIRONMENTAL CONTROL MAP

A3



LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
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REV	DESCRIPTION	DATE
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LIVINGSTONE ROAD BRIDGE

SWMC

ENVIRONMENTAL CONTROL MAP

A3



LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
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REV	DESCRIPTION	DATE
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ALBERMARLE ST & WARDELL RD

SWMC

ENVIRONMENTAL CONTROL MAP

A3





Plant to park on hardstand areas under trees

TEC

TEC
Avoid threatened ecological communities (TEC) including overhanging branches, surface & roots damage



Monitor Marrickville Ave if used

Wallace Ave
Marcia St
Marcia Ln
Crinan St
Floss St
Hampden St
Garnet St
The Parade
Terrace Rd
Ewart St
Hurlstone Park Station
Duntroon St
Google Earth
100 m
N

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
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EWART & GARNET ST

Dulwich Hill - SWMC

ENVIRONMENTAL CONTROL MAP

A3



LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
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5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23
6	Including TfNSW CA56 and AF for SWM3	15/12/23

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FOORD AVE BRIDGE

HURLSTONE PARK - SWMC

ENVIRONMENTAL CONTROL MAP

A3





LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
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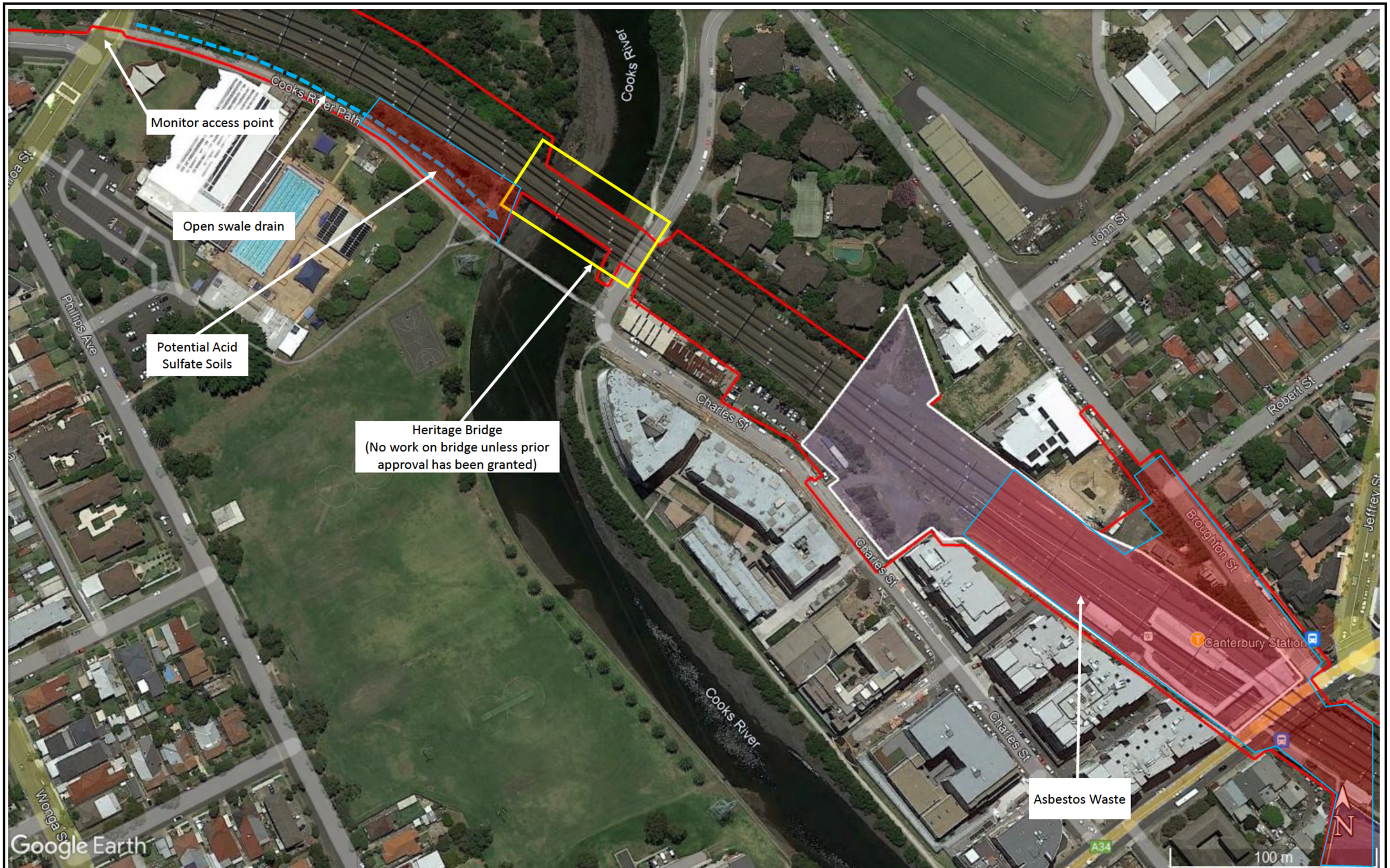
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MELFORD ST & CHURCH ST

CANTERBURY COMPOUND - SWMC

ENVIRONMENTAL CONTROL MAP

A3



LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

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6	Including TfNSW CA56 and AF for SWM3	15/12/23

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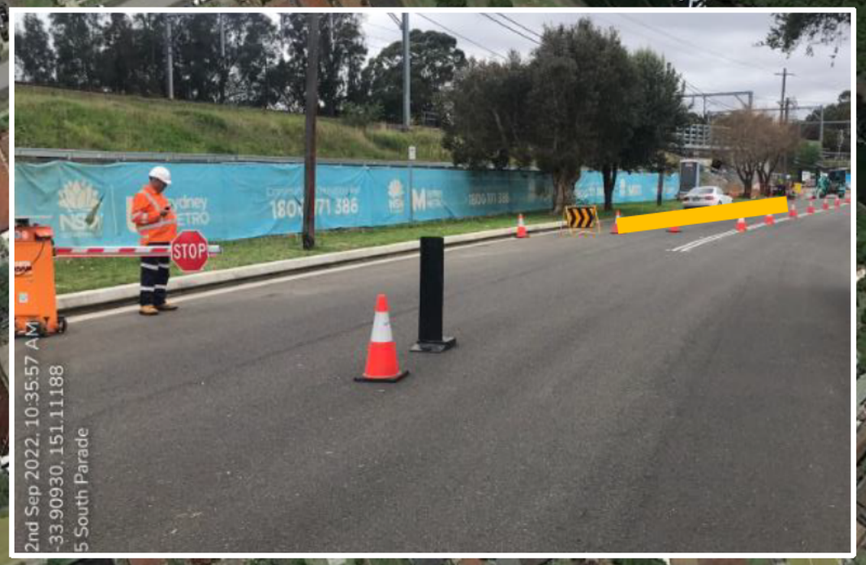
CANTERBURY STATION & COOKS RIVER

CANTERBURY - SWMC

ENVIRONMENTAL CONTROL MAP

A3







Open swale drain

Restricted Solid Waste

Monitor access point

Monitor access point

Dyson St
Moore St
Frederick St
Nowra Ln
N Parade
S Parade
Park St
Wonga La
Wonga St
Wairoa St
Phillips Ave
Google Earth
N
100 m

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
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REV	DESCRIPTION	DATE
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6	Including TfNSW CA56 and AF for SWM3	15/12/23

LAING O'ROURKE

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S PARADE & NOWRA LANE

CAMPSIE - SWMC

ENVIRONMENTAL CONTROL MAP

A3



Monitor access point

Asbestos Waste

Wilfred Ave
Lilian St
Anglo Rd
Assets St
London St
Dispensary Ln
Campsie Station
Anzac Square
Anzac Mall
Beamish St
Dewar St
Amy St
Harold St
Browning St
Duke St
Google Earth
100 m
N

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
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CAMPSIE STATION

CAMPSIE - SWMC

ENVIRONMENTAL CONTROL MAP



LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
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LOCH ST & BELMORET

CAMPSIE - SWMC

ENVIRONMENTAL CONTROL MAP

A3



LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
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REV	DESCRIPTION	DATE
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6	Including TfNSW CA56 and AF for SWM3	15/12/23

LAING O'ROURKE

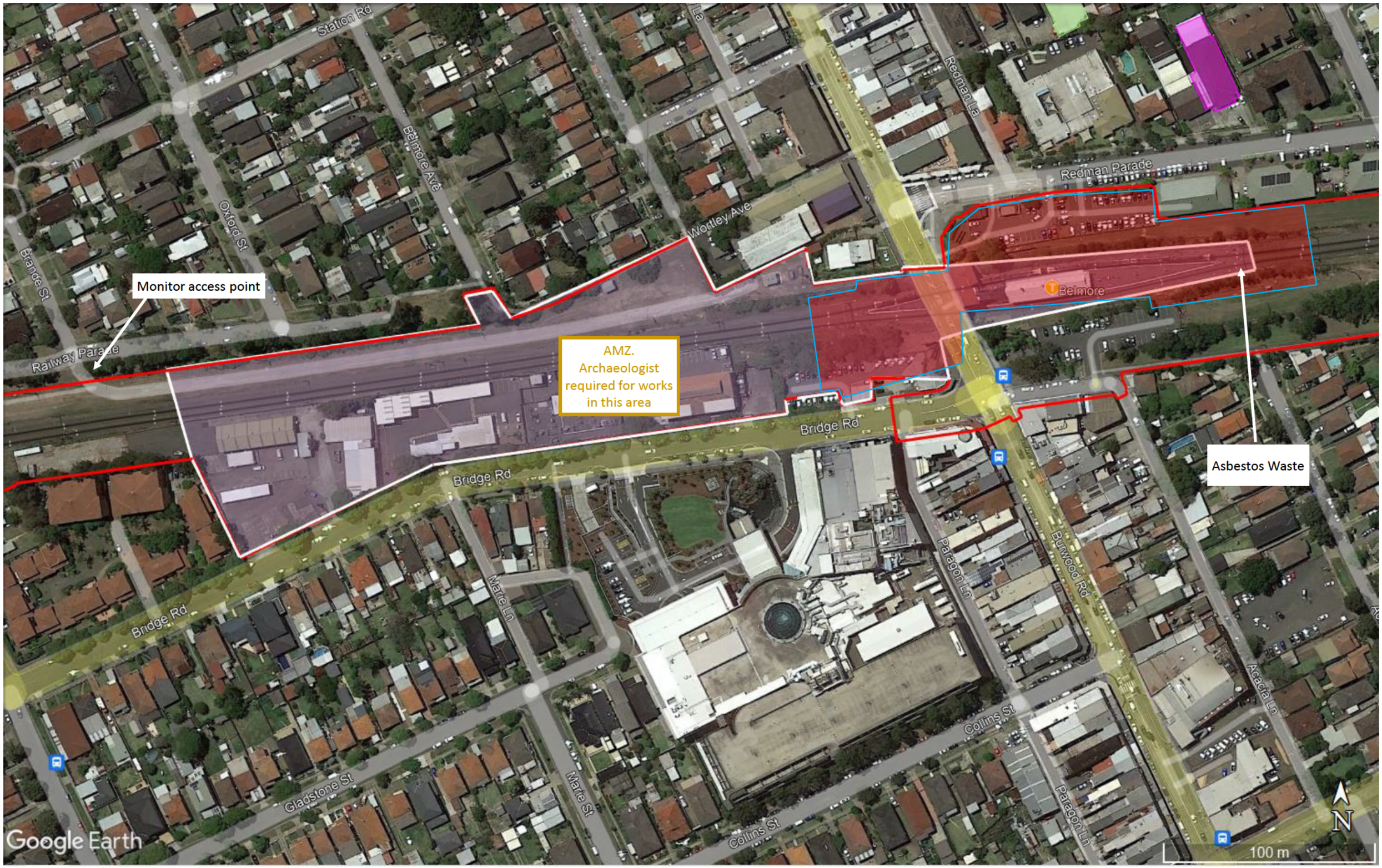
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BELMORET & REDMAN PDE

BELMORE - SWMC

ENVIRONMENTAL CONTROL MAP

A3



LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
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- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
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BELMORE STATION

BELMORE - SWMC

ENVIRONMENTAL CONTROL MAP

A3





TEC
Avoid threatened ecological communities (TEC) including overhanging branches, surface & roots damage
Top batter – barrier, flags & signs
Toe batter – GST



Monitor access point

Restricted Solid Waste

Railway Parade
The Boulevarde
Dennis St
Peel St
Gilles St
TEC
Google Earth
100 m
N

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
4	Including MAF at MSB	29/6/23
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6	Including TfNSW CA56 and AF for SWM3	15/12/23

LAING O'ROURKE

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BELMORE TO LAKEMBA STATION
LAKEMBA - SWMC
ENVIRONMENTAL CONTROL MAP

A3





Under track culvert

AMZ. Archaeologist required for works in this area

Restricted Solid Waste

Monitor access point

White Ibis Roost Colony

Lakemba Station

Lakemba St

Railway Parade

The Boulevarde

Croydon La

Haldon St

Browning Ave

Sproule St

Oneata St

Google Earth

100 m

N

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
4	Including MAF at MSB	29/6/23
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6	Including TfNSW CA56 and AF for SWM3	15/12/23

LAING O'ROURKE

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LAKEMBA STATION

LAKEMBA - SWMC

ENVIRONMENTAL CONTROL MAP

A3

TEC
Avoid threatened ecological communities (TEC) including overhanging branches, surface & roots damage
Top batter – GST
Toe batter – crowd barriers & signs



White Ibis Roost Colony

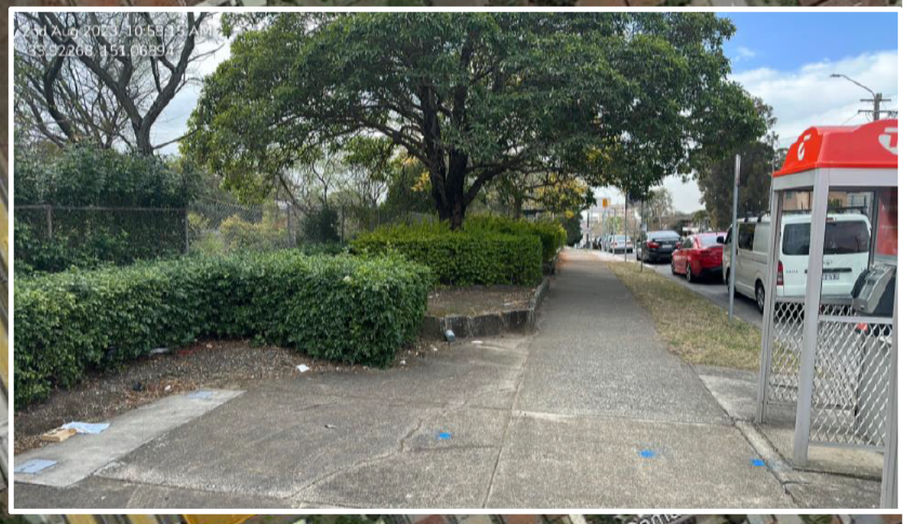
TEC

Open culvert

White Ibis Roost Colony

Asbestos Waste

Heritage Garden Bed
(No work on Garden Bed unless prior approval has been granted)



Lakemba St
Wiley Ln
Railway Parade
The Boulevarde
Wiley Park Station
Cornelia St
Stanlea Parade
Urunga Parade
King Georges Rd
Google Earth
100 m
N

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
4	Including MAF at MSB	29/6/23
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6	Including TfNSW CA56 and AF for SWM3	15/12/23

LAING O'ROURKE

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WILEY PARK STATION
WILEY PARK - SWMC
ENVIRONMENTAL CONTROL MAP

A3

Open culvert

Hazardous Waste

TEC
Avoid threatened ecological communities (TEC) including overhanging branches, surface & roots damage
Top batter – barrier, flags & signs
Toe batter – GST



Monitor access point

Monitor access point

TEC

Punchbowl Laydown

Dudley St
Urunga Parade
Urunga Parade
Urunga Parade
The Boulevarde
Faux St
Renown
Broadway
Dudley St
Rosemont St S
Robinson St S
Hillcrest St
Google Earth
N
100 m

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
- Place of Worship
- Plant Parking Offload
- AMZ — Archaeological Management Zone
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
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5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23
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LAING O'ROURKE

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WILEY PARK TO PUNCHBOWL STATION

PUNCHBOWL - SWMC

ENVIRONMENTAL CONTROL MAP

A3

TEC
Avoid threatened ecological communities (TEC) including overhanging branches, surface & roots damage
Top batter – barrier, flags & signs
Toe batter – GST

TEC

South Terrace

Monitor access point

Monitor access point

TEC

Potential Aboriginal Archaeological Deposit (PAD)

Quine Ln

Breust Pl

Punchbowl Rd

Punchbowl Rd

Rickard St

Punchbowl Station

The Boulevarde

Punchbowl Rd

Punchbowl Rd

Turner Ln

Clarke Pl

Turner Ln

Heggie Ln

Asbestos Waste

Hazardous Waste

Google Earth

100 m

N

LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
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PUNCHBOWL STATION

PUNCHBOWL - SWMC

ENVIRONMENTAL CONTROL MAP

A3



Monitor access point

Monitor access point

New growth - TEC

TEC

TEC
Avoid threatened ecological communities (TEC) including overhanging branches, surface & roots damage
Top batter – barrier, flags & signs
Toe batter – GST



Gardenia Ave
South Terrace
Griffiths Ave
Stansfield Ave
Mount Lewis Ave
Catherine St
Kelly St
Scott St
Gowrie Ave
Milga St
Google Earth
100 m
N

LEGEND

- Project Boundary
- Open Channel
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- Medical Centre
- Child Care Centre
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LAING O'ROURKE

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PUNCHBOWL TO BANKSTOWN

PUNCHBOWL - SWMC

ENVIRONMENTAL CONTROL MAP

A3

Wattle St

South Terrace

Carnation Ave

Griffiths Ave

Stansfield Ave

TEC

Hollow-bearing tree



TEC
Avoid threatened ecological communities (TEC) including overhanging branches, surface & roots damage
Top batter – barrier, flags & signs
Toe batter – crowd barriers & signs

Hollow-bearing tree

Grey-headed Flying Fox (vulnerable under TSC Act and EPBC Act

Google Earth

100 m

N

LEGEND

- Project Boundary
- Open Channel
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- Child Care Centre
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LAING O'ROURKE

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PUNCHBOWL TO BANKSTOWN

BANKSTOWN - SWMC

ENVIRONMENTAL CONTROL MAP

A3



LEGEND

- Project Boundary
- Open Channel
- Education Centre
- Medical Centre
- Child Care Centre
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LAING O'ROURKE

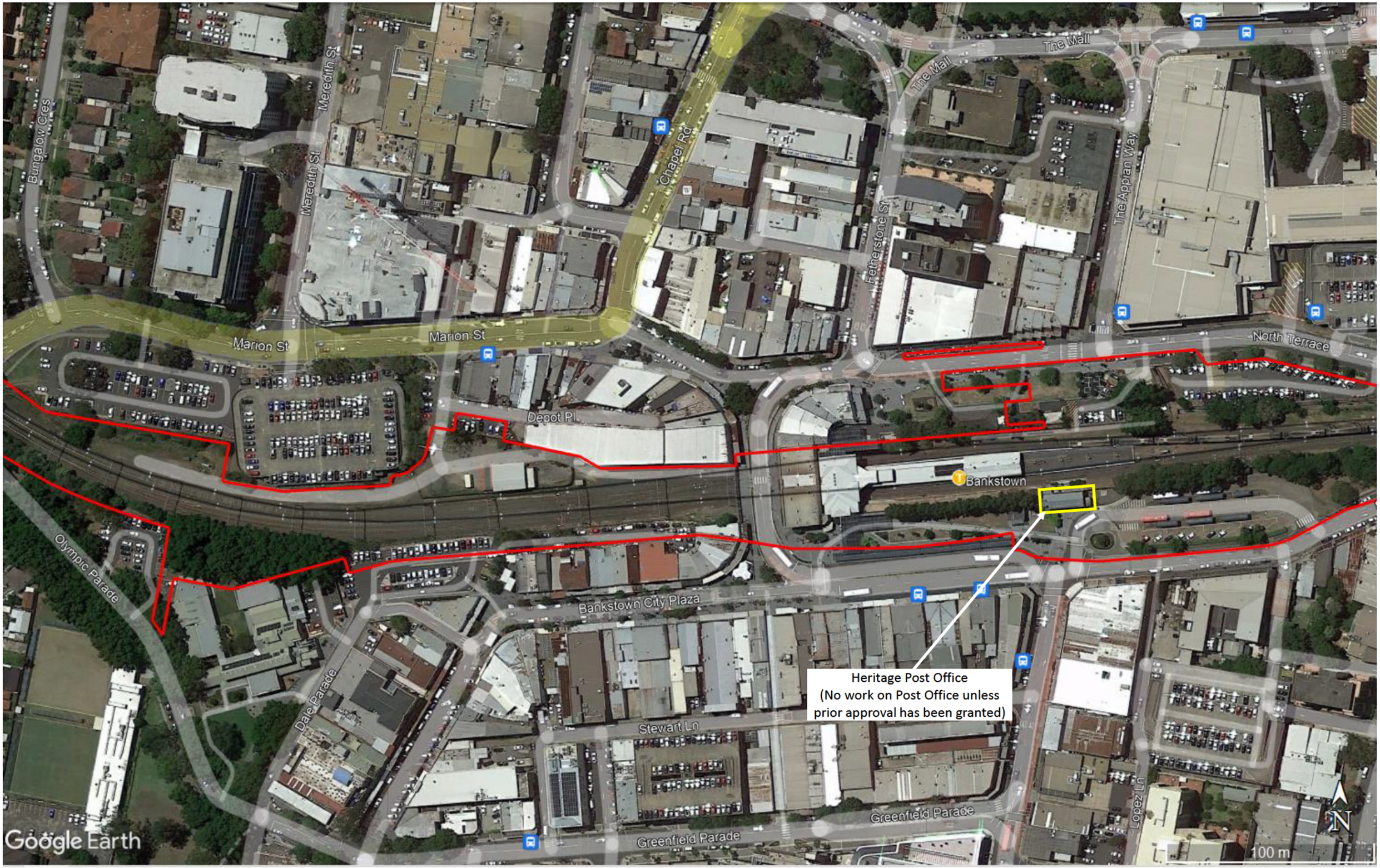
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SOUTH & NORTH TERRACE

BANKSTOWN - SWMC

ENVIRONMENTAL CONTROL MAP

A3



LEGEND

- Project Boundary
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BANKSTOWN STATION

BANKSTOWN - SWMC

ENVIRONMENTAL CONTROL MAP

A3

APPENDIX 1

Possession plant parking for Canterbury Compound

REV	DESCRIPTION	DATE
0	Initial Submission	26/09/22
1	Added Plant Offloading Locations	18/05/23
2	General Updates: Plant Parking, Heritage Bridges & Contamination Areas	18/05/23
3	Including Station Bracket Scope and possession plant parking at Canterbury	23/06/2023

REV	DESCRIPTION	DATE
4	Including Minor Ancillary Facility for MSB PC taking over	29/06/2023
5	Including Heritage Garden Bed at Wiley Park Station City Side	15/12/2023
6	Including TfNSW CA56 and Ancillary Facility for SWM3	12/08/2024

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SWMC

ENVIRONMENTAL CONTROL MAP

Cover Sheet | A3



LEGEND

- Project Boundary
- Plant Parking Location
- Plant Exiting Route
- Pedestrian Route to Compound

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Appendix 1 – Possession Plant Parking

Canterbury - SWMC

ENVIRONMENTAL CONTROL MAP

-	A3

APPENDIX 2

Metro Service Building (MSB) MAF

REV	DESCRIPTION	DATE
0	Initial Submission	26/09/22
1	Added Plant Offloading Locations	18/05/23
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3	Including Station Bracket Scope and possession plant parking at Canterbury	23/06/2023

REV	DESCRIPTION	DATE
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6	Including TfNSW CA56 and Ancillary Facility for SWM3	12/08/2024

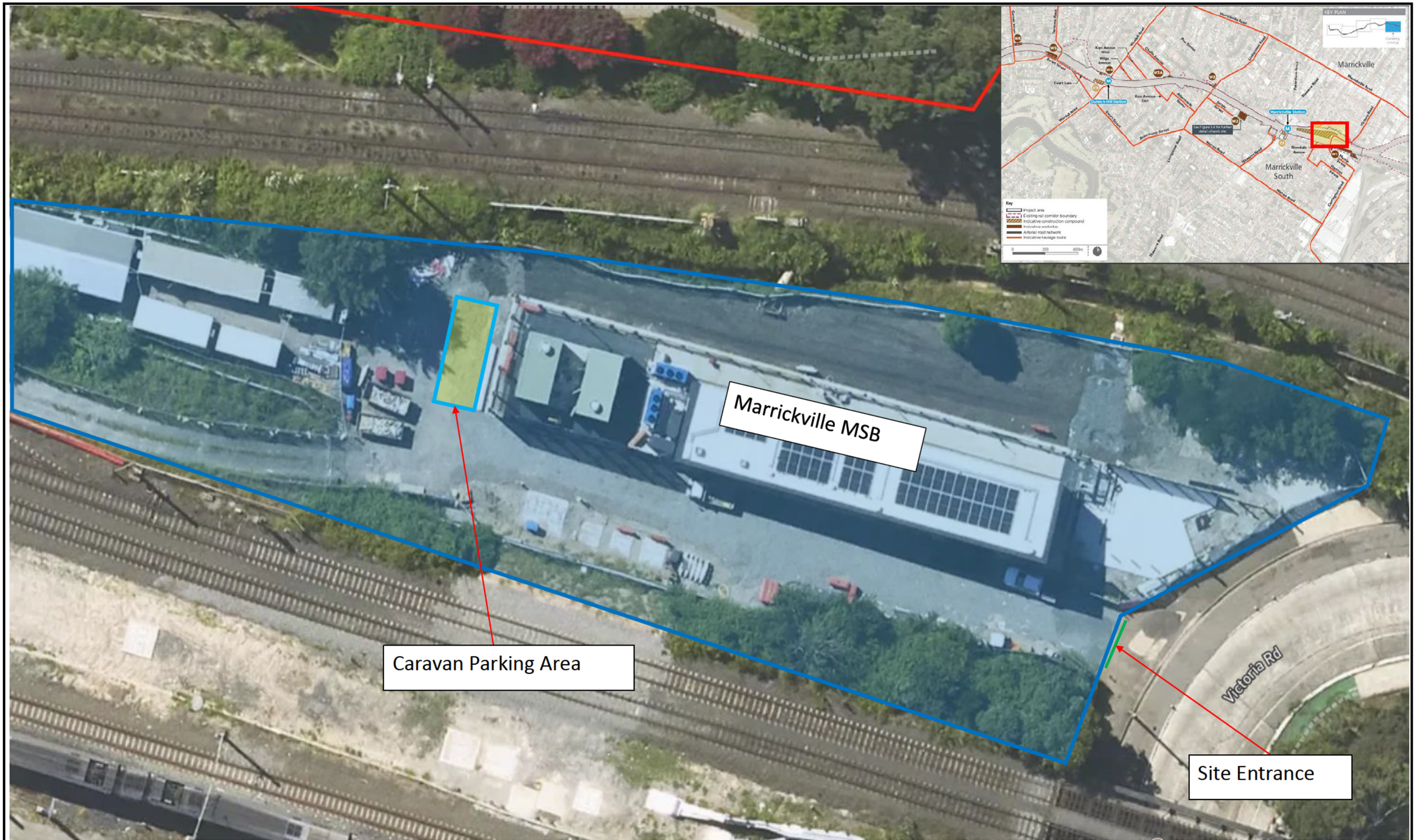
LAING O'ROURKE

JOHN HOLLAND

SWMC

ENVIRONMENTAL CONTROL MAP

Cover Sheet | A3



LEGEND

Project Boundary

LAING O'ROURKE

JOHN HOLLAND

Appendix 2 – Marrickville Station MSB

Marrickville - SWMC

ENVIRONMENTAL CONTROL MAP

-

A3



LEGEND

Project Boundary

LAING O'ROURKE

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Appendix 2 – Dulwich Hill MSB

Dulwich Hill - SWMC

ENVIRONMENTAL CONTROL MAP

-

A3



LEGEND

Project Boundary

LAING O'ROURKE

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Appendix 2 – Hurlstone Park MSB

Hurlstone Park - SWMC

ENVIRONMENTAL CONTROL MAP

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A3

Caravan Parking Area

Campsie MSB

Site Entrance

Wilfred Ave

Lilian Ln

Lilian St

Dewar St

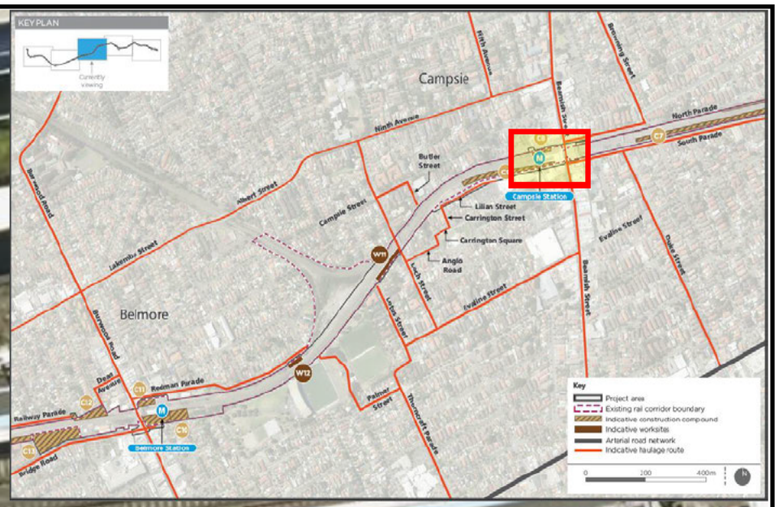
Campsie RSL

Salvation Army Campsie

Centrelink Campsie

19-21

Anzac Sq



LEGEND

Project Boundary

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Appendix 2 – Campsie MSB

Campsie - SWMC

ENVIRONMENTAL CONTROL MAP

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A3



LEGEND

Project Boundary

LAING O'ROURKE

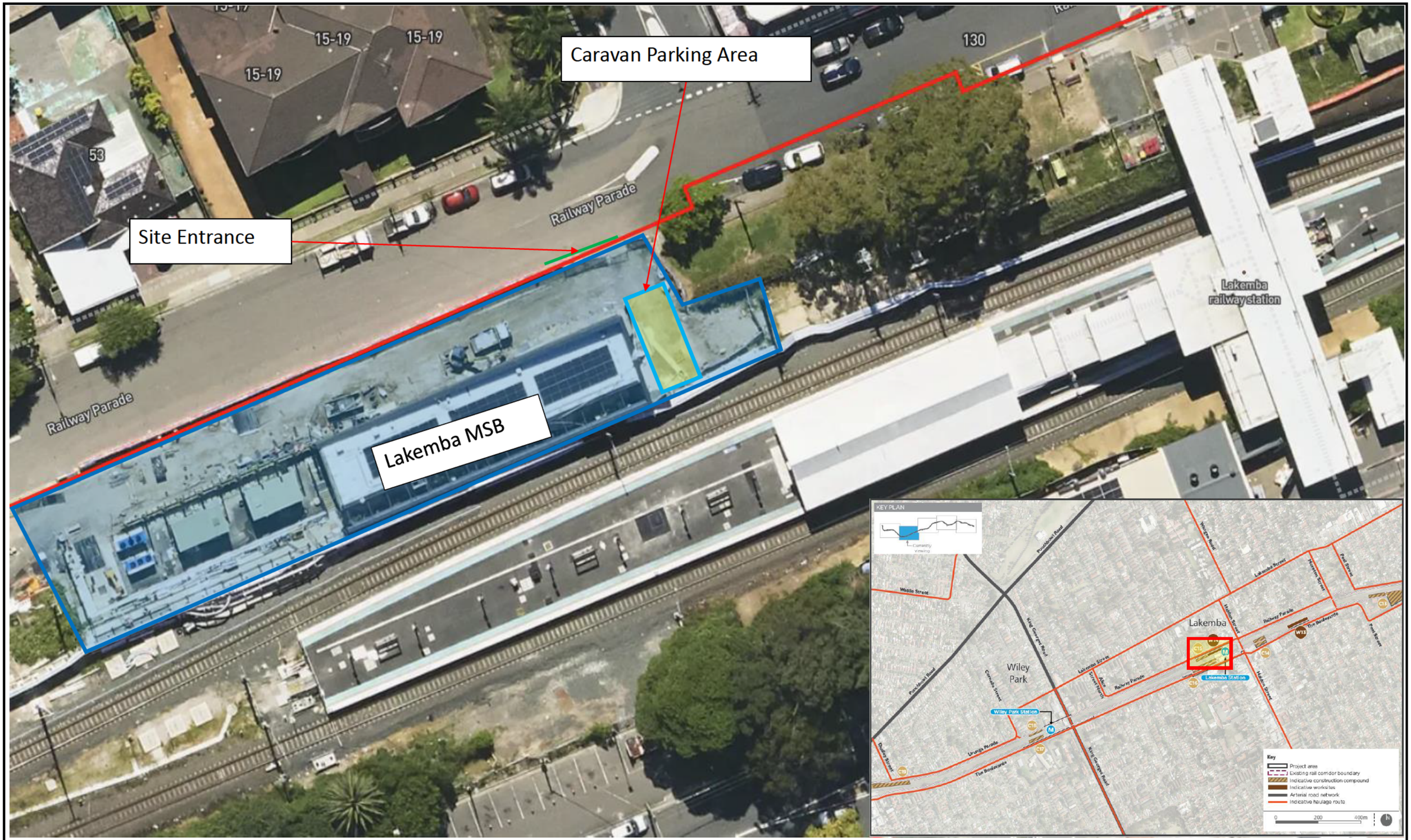
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Appendix 2 – Belmore MSB

Belmore - SWMC

ENVIRONMENTAL CONTROL MAP

-	A3



LEGEND

Project Boundary

LAING O'ROURKE

JOHN HOLLAND

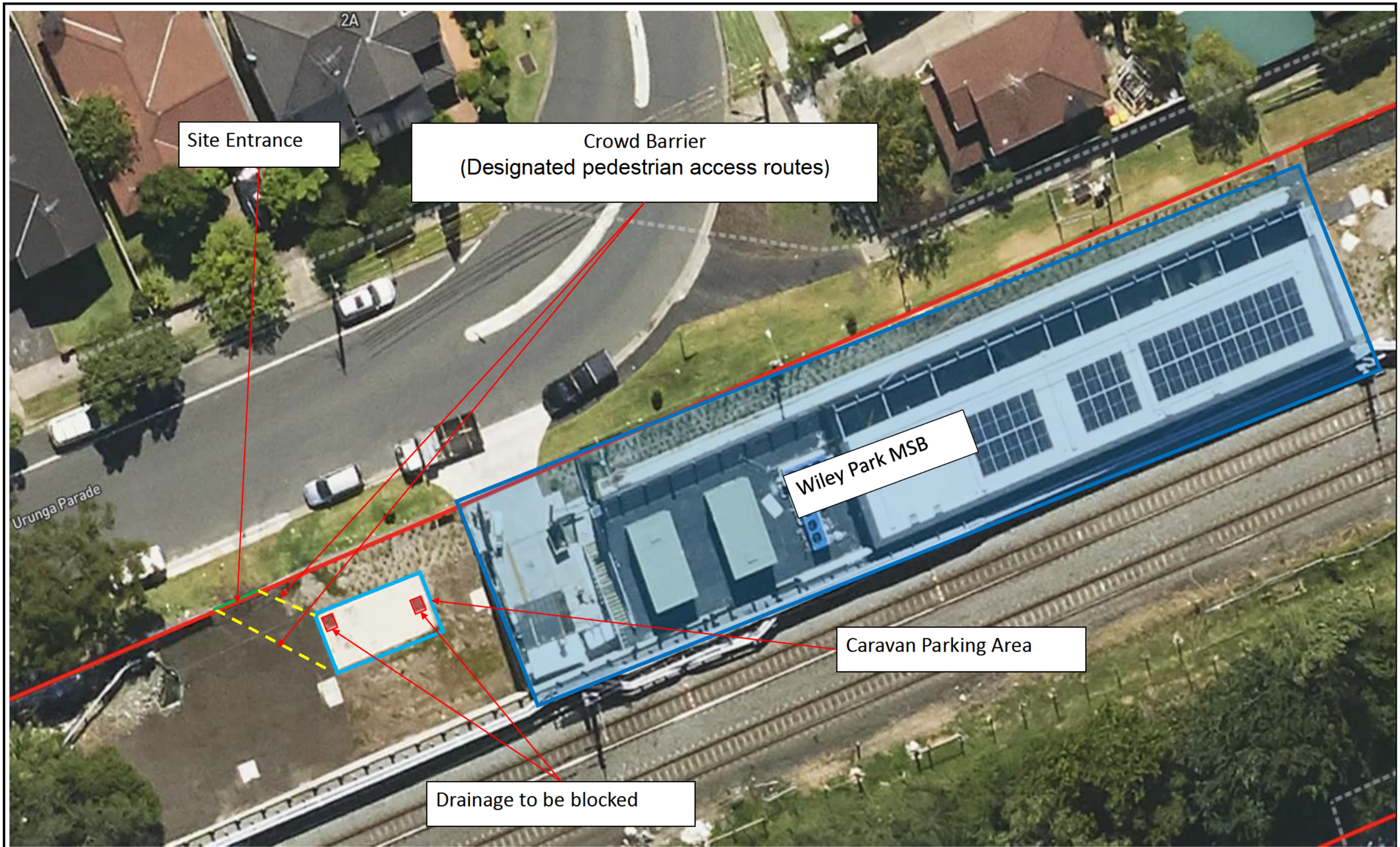
Appendix 2 – Lakemba MSB

Lakemba - SWMC

ENVIRONMENTAL CONTROL MAP

-

A3



LEGEND

Project Boundary

LAING O'ROURKE

JOHN HOLLAND

Appendix 2 – Wiley Park MSB

Wiley Park - SWMC

ENVIRONMENTAL CONTROL MAP

-

A3



LEGEND

Project Boundary

LAING O'ROURKE

JOHN HOLLAND

Appendix 2 – Punchbowl MSB

Punchbowl - SWMC

ENVIRONMENTAL CONTROL MAP

-	A3

APPENDIX 3

SWM3 MAF

REV	DESCRIPTION	DATE
0	Initial Submission	26/09/22
1	Added Plant Offloading Locations	18/05/23
2	General Updates: Plant Parking, Heritage Bridges & Contamination Areas	18/05/23
3	Including Station Bracket Scope and possession plant parking at Canterbury	23/06/2023

REV	DESCRIPTION	DATE
4	Including Minor Ancillary Facility for MSB PC taking over	29/06/2023
5	Including Heritage Garden Bed at Wiley Park Station City Side	15/12/2023
6	Including TfNSW CA56 and Ancillary Facility for SWM3	12/08/2024

LAING O'ROURKE

JOHN HOLLAND

SWMC

ENVIRONMENTAL CONTROL MAP

Cover Sheet | A3



A19 Facility

LAING O'ROURKE

JOHN HOLLAND

Appendix 3 – Marrickville Station

ENVIRONMENTAL CONTROL MAP

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A3

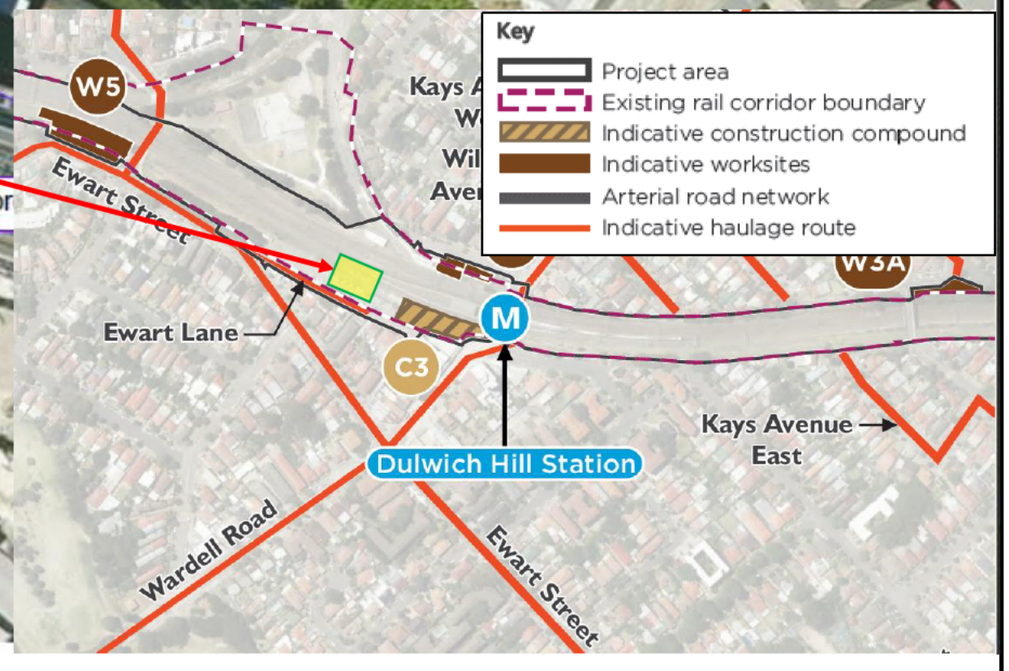
Concrete/water barrier with gawk screen (66m)
ATF (85m) (Existing)
Crib room (12x3), toilet block (6x3)
Double site access gate (x3)
Double vehicle access gate (x2)

Power supply form MSB

Temporary water supply available behind caravan

Maintain pedestrian access for light rail

Water supply



A19 Facility

LAING O'ROURKE

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Appendix 3 – Dulwich Hill Station

ENVIRONMENTAL CONTROL MAP

-	A3

Concrete/water barrier with gawk screen (65m)
Crib room (6x3), toilet block (6x3)
Double site access gate (x1)
Double vehicle access gate (x1)

Power supply form pole

Water supply

Prestart area

Route: 10T3 (Towards Sydenham)

Route: 10T3 (Towards Bankstown)

Maintain access to ARTC track

Key
Project area
Existing rail corridor boundary
Indicative construction compound
Indicative worksites
Arterial road network
Indicative haulage route

Hurlstone Park

W6

C4

Hurlstone Park Station

M

Floss Street

Dunstaffe

A16 Facility located in Indicative Construction Compound C4

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Appendix 3 – Hurlstone Park Station

ENVIRONMENTAL CONTROL MAP

-	A3

Possible water near track

Power supply from MSB

Copper water end cap

Pedestrian access to be maintained.
Closure to be staged based on scope duration

Concrete/water barrier with gawk screen (60m)
ATF (70m)
Crib room (6x3), toilet block (6x3)
Double site access gate (x3)
Double vehicle access gate (x2)

Key
Project area
Existing rail corridor boundary
Indicative construction compound
Indicative worksites
Arterial road network
Indicative haulage route

Broughton Street
Jeffrey Street
Canterbury Road
Church Street
Canterbury
Canterbury Station
Charles Street
COOKS RIVER
Close Street
Hutton Street
C6
C5
W9
W8
W7
M

Prestart area

Pedestrian access to be maintained.
Closure to be staged based on scope duration

oute: 10T3, 12T3
owards Sydenham)

Route: 10T3, 12T3
(Towards Bankstown)

B

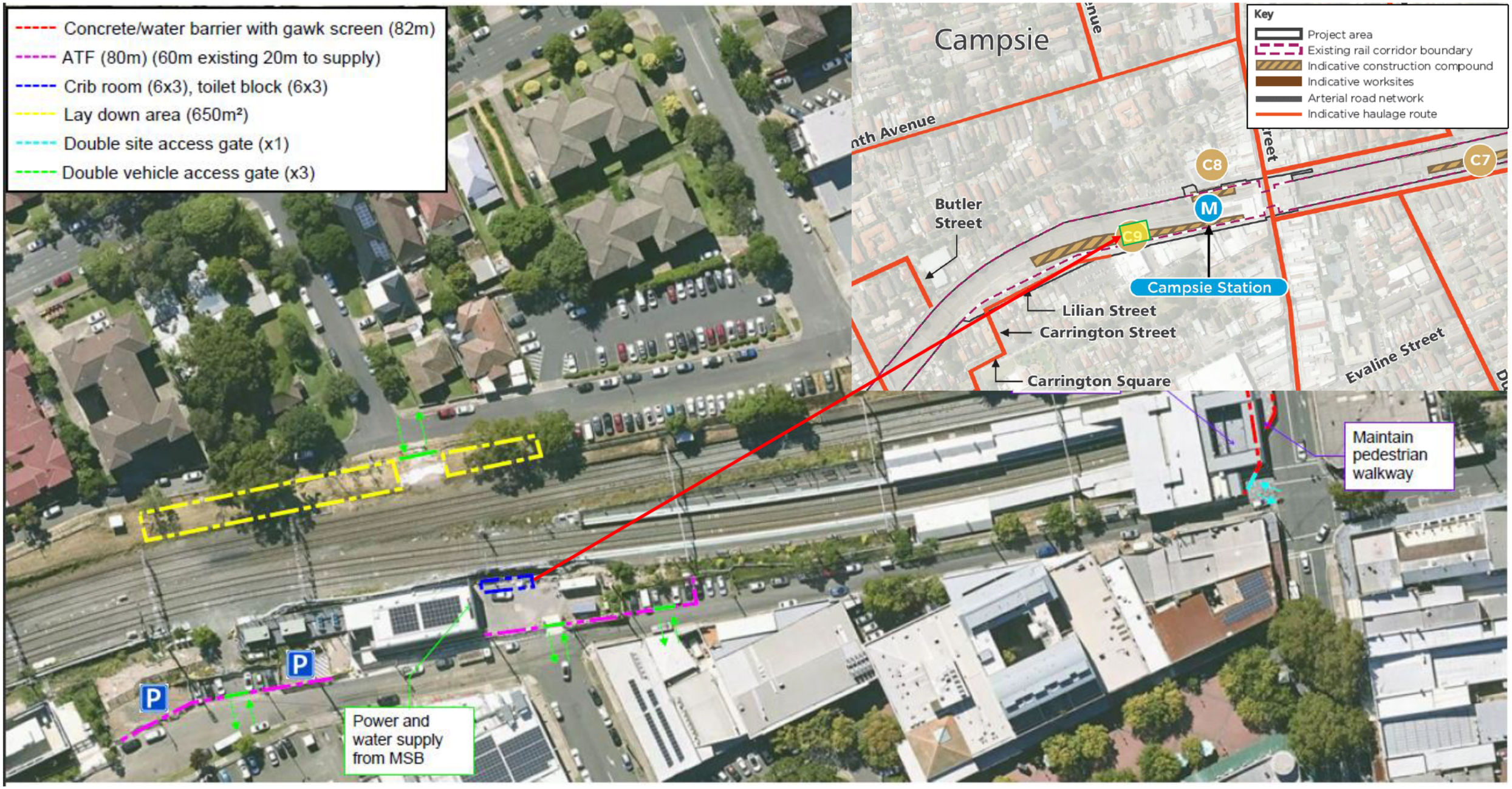
A16 Facility located in Indicative Construction Compound C6

LAING O'ROURKE
JOHN HOLLAND

Appendix 3 – Canterbury Station

ENVIRONMENTAL CONTROL MAP

-	A3



A16 Facility located in Indicative Construction Compound C9

LAING O'ROURKE

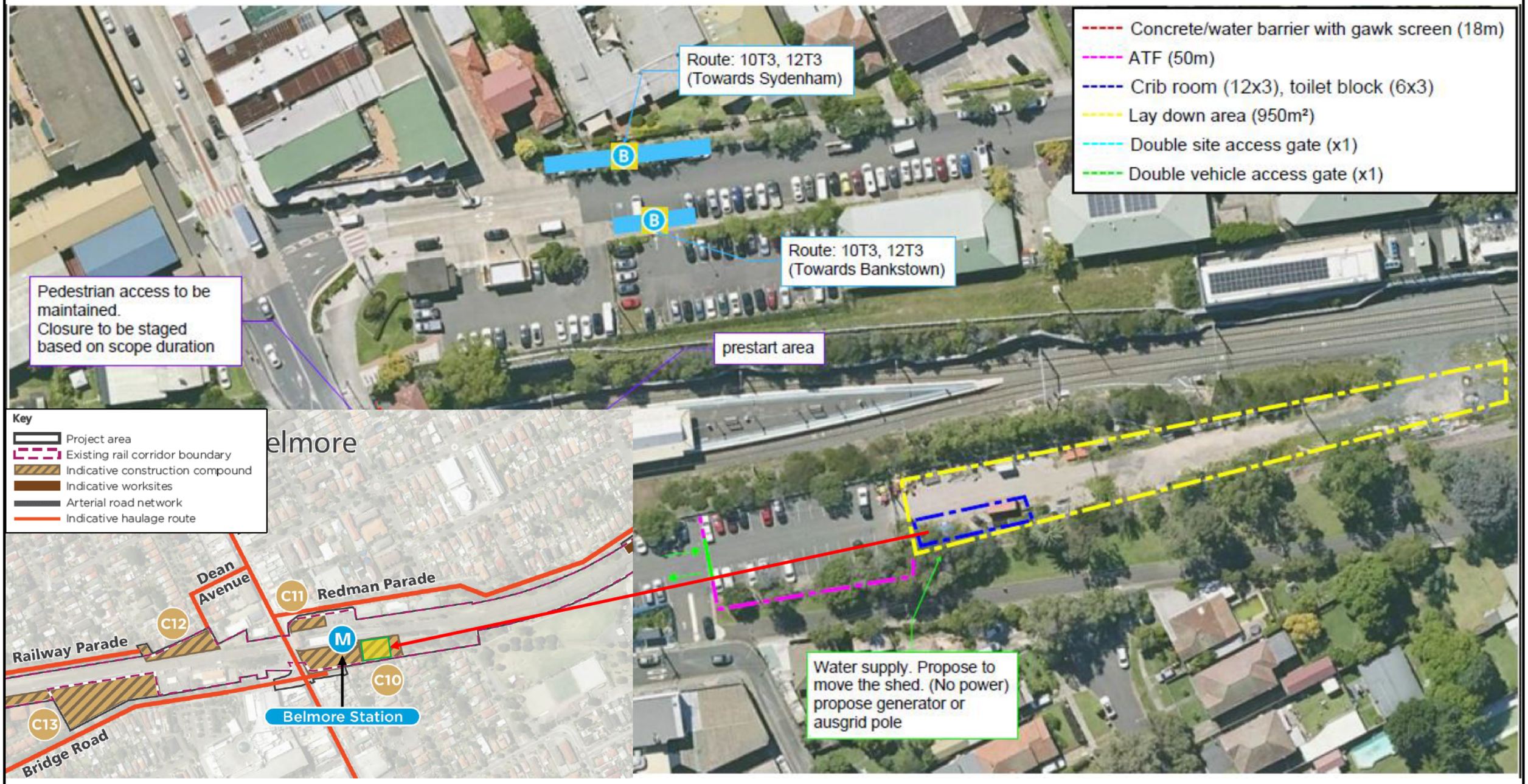
JOHN HOLLAND

Appendix 3 – Campsie Station

ENVIRONMENTAL CONTROL MAP

-

A3



A16 Facility located in Indicative Construction Compound C10

LAING O'ROURKE

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Appendix 3 – Belmore Station

ENVIRONMENTAL CONTROL MAP

-	A3



A16 Facility located in Indicative Construction Compound C13

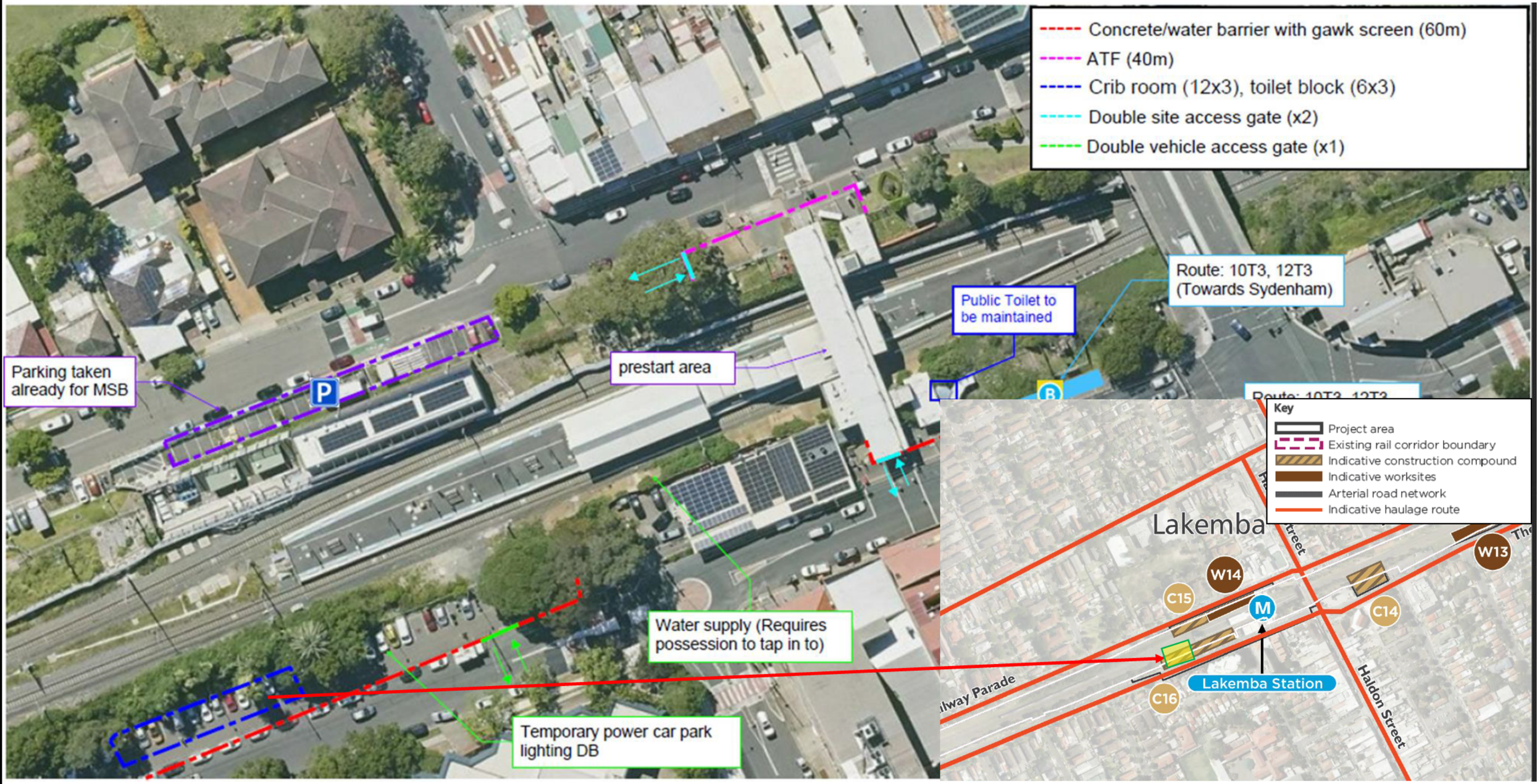
LAING O'ROURKE

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Appendix 3 – Belmore Bridge Rd

ENVIRONMENTAL CONTROL MAP

-	A3



A16 Facility located in Indicative Construction Compound C16

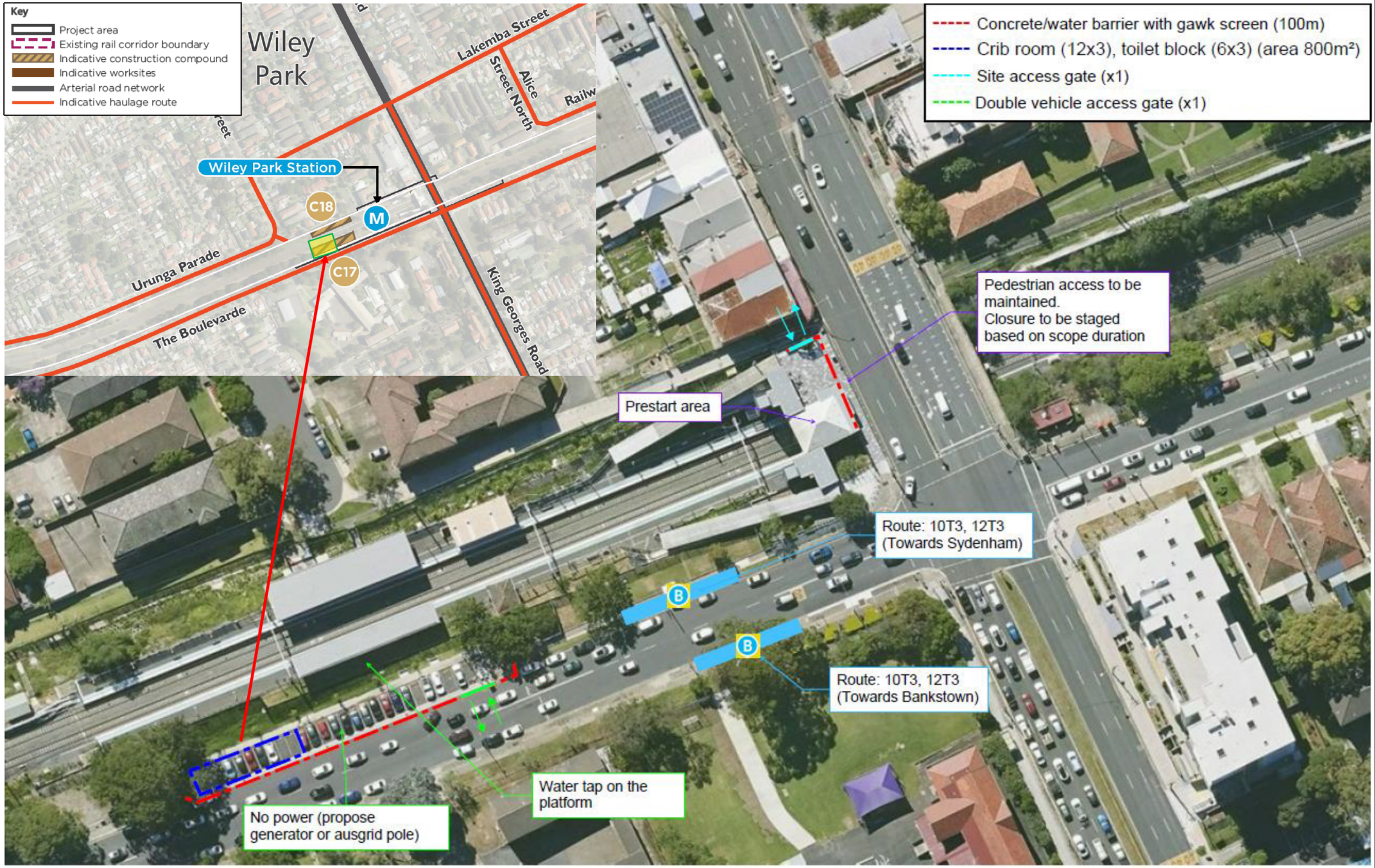
LAING O'ROURKE

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Appendix 3 – Lakemba Station

ENVIRONMENTAL CONTROL MAP

-	A3



A16 Facility located in Indicative Construction Compound C17

LAING O'ROURKE

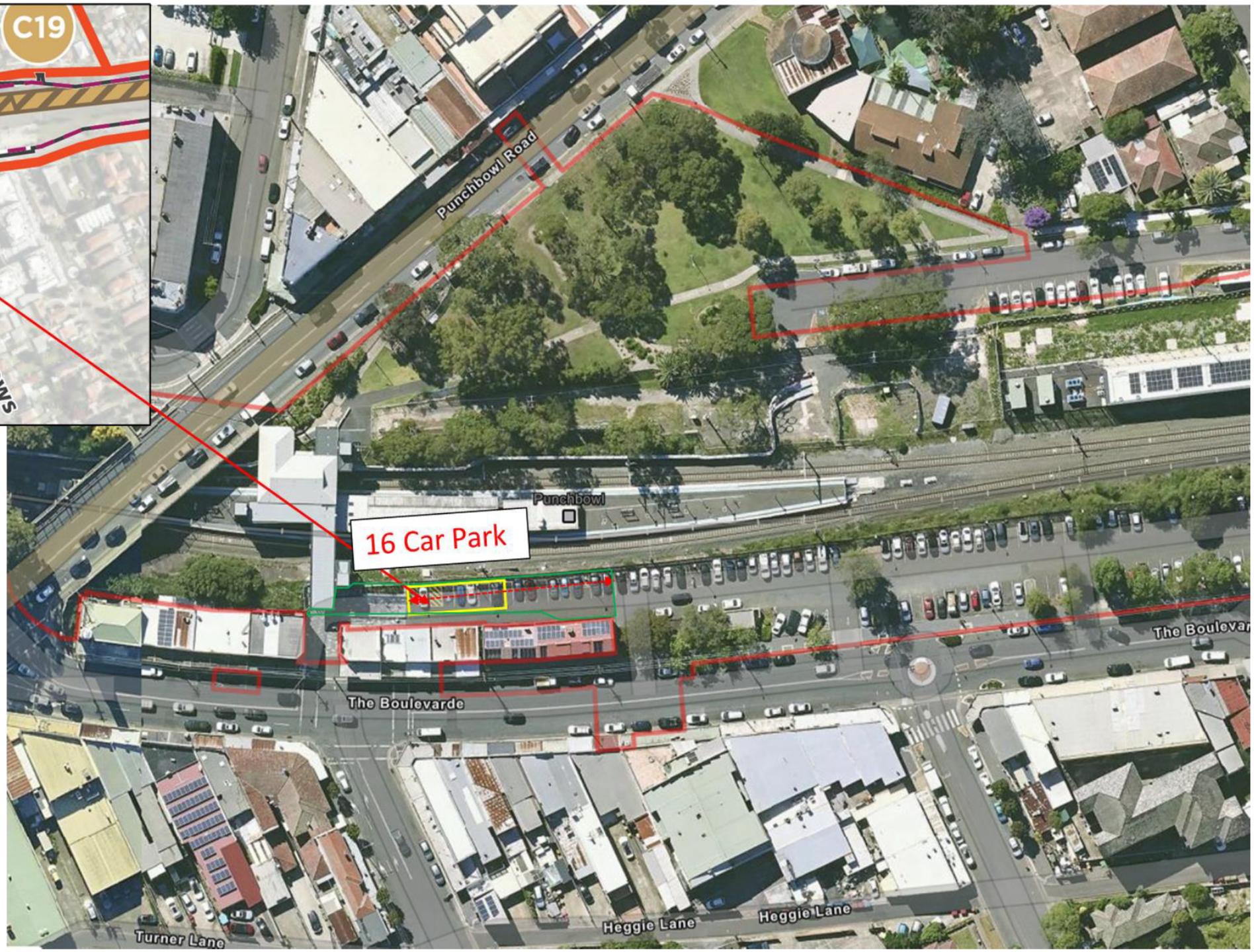
JOHN HOLLAND

Appendix 3 – Wiley Park Station

ENVIRONMENTAL CONTROL MAP

-	A3





A19 Facility

LAING O'ROURKE

JOHN HOLLAND

Appendix 3 – Punchbowl Station

ENVIRONMENTAL CONTROL MAP

-	A3

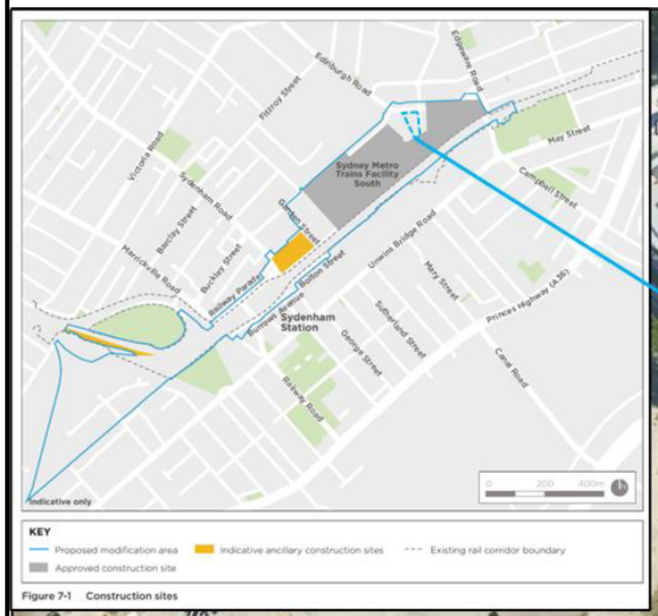


Figure 7-1 Construction sites

Figure 9-3 Proposed haul routes – Sydenham Station and Sydney Metro Trains Facility South

A16 Facility located in TfNSW CA56

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Appendix 3 – Sydney Steel Rd

ENVIRONMENTAL CONTROL MAP

-

A3

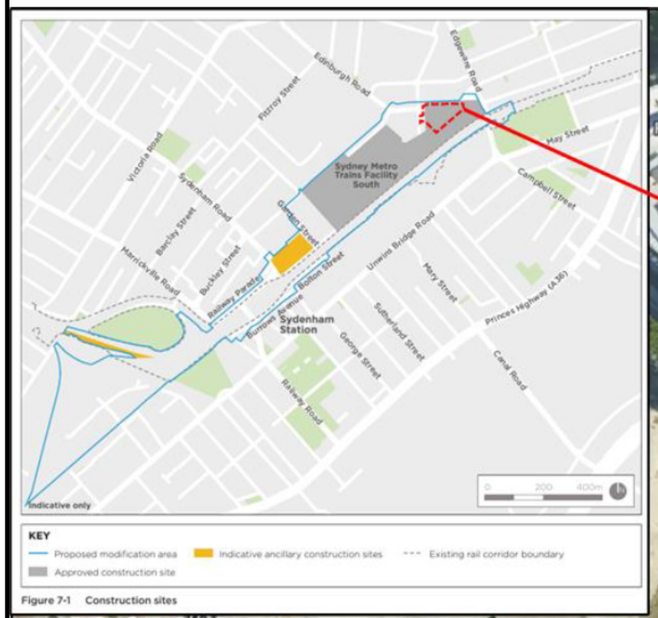


Figure 7-1 Construction sites

Figure 9-3 Proposed haul routes – Sydenham Station and Sydney Metro Trains Facility South

A16 Facility located in TfNSW CA56 Approved Construction Site

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Appendix 3 – Murray Rd

ENVIRONMENTAL CONTROL MAP

-	A3



Figure 7-1 Construction sites

Sydenham Truncation

Area required temporarily between 2/09/2024 – 30/10/2024.

Legend:

- Temp stockpile / laydown
- Temp amenities
- Existing Sydney Trains materials
- Existing gate
- Unimpeded vehicular access
- Existing fence line
- Concrete jersey kerbs
- Waterfilled barriers
- Non-waterfilled barriers

A16 Facility located in TfNSW CA56 Approved Construction Site

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Appendix 3 – Way St Sub Station

ENVIRONMENTAL CONTROL MAP

-	A3

Appendix L: Environmental Schedules and Forms

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E-T-8-1227 ENVIRONMENTAL INSPECTION REPORT

CONTRACT/PROJECT No.:	WORK LOCATION:
DATE:	TIME:

A = ACCEPTABLE **AR = ACTION REQUIRED** **N/A = NOT ASSESSED**

No.	ITEM	CONFORMANCE			RISK CLASS	DESCRIPTION OF NON-COMPLIANCE/ CORRECTIVE ACTION	CORRECTIVE ACTION REQUIRED	RESPONSIBLE	TARGET DATE
		A	AR	NA					
GENERAL									
1	Are good house-keeping practices in place in Work Areas?								
2	Vehicles parked in designated parking zones?								
3									
4									
FIRE CONTROLS									
5	Hot works conducted under Permit?								
6	Any evidence of unapproved fires onsite or offsite along Project boundaries?								
7	Fire extinguishers/equipment available and maintained? (vehicles/work areas)								
DUST									
8	Are fugitive dust emissions travelling beyond Project boundaries?								
9	Are agreed dust control measures being implemented to minimise dust emissions (e.g. – sufficient number of watercarts, handling/transport of materials, application of dust suppressants etc.)?								
10									
11									
AIR POLLUTION									
12	Do excessive black smoke emissions from vehicles and equipment occur >20 seconds?								
13	Are there any noticible odours associated with the works								
MAINTENANCE / EQUIPMENT / REFUELLING									
14	Are vehicles, equipment and plant being serviced on time and according to manufacturer specifications? Maintenance logs up to date & available to view?								
15	All gen-sets and diesel tanks are self contained or in 110% capacity bund with no evidence of water or litter pooling within?								
16	Are refuelling activities taking place at designated zones with spill kits, drip trays and fire extinguishers present?								
WASTE MANAGEMENT									
17	Sufficient waste receptacles available to segregate waste streams (e.g. oily rags, plastics, wood, steel, 'butt out bins') & are they close to work areas?								
18	Are waste streams being segregated into clearly labelled receptacles?								
19	Do all waste receptacles have appropriate lids and/or coverings?								
20	Any evidence of unreported leaks/spills (e.g. – sewerage overflows/leaks, hydrocarbon spills and vehicle wash-down areas and chemical storage areas)?								
21	Are concrete washout areas installed in agreed locations and are they being maintained and emptied?								
22									
23									
CHEMICAL MANAGEMENT AND SPILLS									
24	Are hazardous chemicals/liquids store inside a bund that satisfies the criteria - 110% of the max. storage or 10% of double skinned tank?								
25	Are spill kits (hydrocarbon and/or chemical) located within each Work Area and/or with major vehicles? Are they free from litter and water?								
26	Hazardous materials segregated (no incompatible materials together) and have correct signage, fire extinguishers, ventilation, correct containers & labels)?								
27									
28									
EROSION AND SEDIMENT CONTROL									
29	Are Erosion Control Structures (ESCs) installed as per the current ESCP?								
30	Are all controls being installed correctly and maintained and have a minimum of 75% capacity?								
31	Is there evidence of erosion/sedimentation or surface water discharge occurring external to the Project Footprint?								
32	Are sediment basins of adequate size and constructed so that all water on-site is draining to them?								
33	Is there evidence of sedment tracking on external public roads?								

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Environment Inspection

No.	ITEM	CONFORMANCE A	CONFORMANCE AR	CONFORMANCE NA	RISK CLASS	DESCRIPTION OF NON-COMPLIANCE/ CORRECTIVE ACTION	CORRECTIVE ACTION REQUIRED	RESPONSIBLE	TARGET DATE
34	Is the ESCP up to date for the scope of works and catchment areas?								
35	Clean water diverted to approved locations and dirty/contaminated water contained? No evidence of contaminated water leaving site?								
36									
WATER QUALITY AND MANAGEMENT									
37	Collected water treated and tested prior to discharge offsite?								
38									
39									
FLORA / VEGETATION / WEEDS									
40	Do vehicles have Weed-free Certificates and are Weed Inspection Logs up-to-date?								
41	Are works being carried out within approved cleared boundaries with no unapproved ground disturbance? (i.e. tracks/turning circles etc.)								
42	Is there evidence of adverse impacts to vegetation on-site and up to 5m around site, along Project roads or infrastructure footprints (e.g. - overspray from dust suppression activities, dust settlement, unauthorised clearing)?								
43	Topsoil/ Vegetation/ Weeds are segregated and sign posted?								
44	Physical vegetation protection measures (fencing, flagging tape etc) in place and maintained?								
45									
FAUNA PROTECTION									
46	Are fauna egress points installed in sediment basins and other excavations/trenches?								
47	Is there evidence of vehicular activity or unapproved activities in off-limit areas, known fauna habitats?								
48	During night works is lighting facing downwards and illuminating work areas only?								
49									
50									
NOISE / VIBRATION									
51	Equipment is located/directed away from sensitive areas and where suitable are fitted with sound insulation and/or vibration suppression devices?								
52									
53									
Cultural Heritage									
54	Physical protection measures (fencing, flagging tape etc) in place and maintained?								
55	Is there evidence of unapproved activities or damage to known curltural heritage areas?								
56									
57									
Contaminated land/PASS/ASS									
58	Contamination remediation being undertaken in accordance with approved plan?								
59	Physical controls for known contaminated areas in place and maintained?								
60	All PASS/ASS treatment pads and sumps, maintained as per required specifications?								
61									
VEHICLES AND TRAFFIC									
62	Are vehicles and equipment operating within the approved Project Footprint?								
63									
ADDITIONAL COMMENTS / REQUIRED ACTIONS:									

INSPECTION TEAM:	Risk Class	Environment
SIGNATURE(S):	0	Requirement Complies with system or criteria.

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Process	Document owner	Step	Gateways	Document type
Enabling Process	Project Team (Delivery)	2257 – Environmental Compliance	7 – 8	Template (T)

Environment Inspection

No.	ITEM	CONFORMANCE A	CONFORMANCE AR	CONFORMANCE NA	RISK CLASS	DESCRIPTION OF NON-COMPLIANCE/ CORRECTIVE ACTION	CORRECTIVE ACTION REQUIRED	RESPONSIBLE	TARGET DATE
Project Manager or Leader:					1	Major Noncompliance eg: Nil evidence of implementation, departure from documented system requirement, potential or pending failure leading to long term defect or immediate requirement for rectification or change of work method or construction details. Potential prosecution			
SIGNATURE:					2	Minor Noncompliance. Eg: Issues with system or criteria requirement establishment or implementation, potential failure leading to possible long term defect or review of work method or construction details.			
Note: This form MUST be signed and scanned as electronic copy and saved in the projects Environmental system folder (1430). Hard copy to remain in project file for no less than 12 months. All non-compliances must be uploaded into the Corrective Action Register (E-T-8-					3	Opportunity for Improvement (minor omissions, oversights, identification of recommendations to improve, etc)			

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Management Site Safety and Environment Inspection

PROJECT / LOCATION / CONTRACT NO:									
No.	Item	Evidence Sighted	Risk Class	Responsible	Exact Location	Description of Non Compliance	Action Taken	Close Out**	
								Immediate	Follow up
1.	Access / Egress-Clear / Designated								
2.	Amenities – Clean / Adequate								
3.	Edge protection								
4.	Electrical Equipment – Tagged / Safeguards, leads								
5.	Excavation – Barricades, access								
6.	Fire Hose Reels / Fire Extinguishers (including on plant & contractor owned) Charged & In Test Date								
7.	Hazardous Substances – quantity storage, risk assessment								
8.	Housekeeping / Rubbish Removal								
9.	Ladders – Condition / Usage								
10.	Lighting / Levels acceptable								
11.	Manual Handling								
12.	Noise Management								
13.	Penetrations – Protected, marked								
14.	Plant / Equipment –								

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Management Site Safety and Environment Inspection

PROJECT / LOCATION / CONTRACT NO:									
No.	Item	Evidence Sighted	Risk Class	Responsible	Exact Location	Description of Non Compliance	Action Taken	Close Out**	
								Immediate	Follow up
	daily pre-start, logbooks, OEM Manual, maintenance, operator quals. Damage, faults reported								
15.	PPE (Hard Hats / Boots / Hearing / Glasses, etc)								
16.	Public Protection – Fencing / intact / appropriate / Site Security								
17.	Scaffolding – Design documentation								
18.	Scaffolding (gaps, ties, braces, soleplates, mesh, signs, Handover Certificates)								
19.	Segregation – Vehicle / pedestrian / activity workforce								
20.	Signage								
21.	Traffic Control								
22.	Height work / Edge protection								
Other issues / activities									
23.									
24.									
25.									
26.									

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Management Site Safety and Environment Inspection

PROJECT / LOCATION / CONTRACT NO:									
No.	Item	Evidence Sighted	Risk Class	Responsible	Exact Location	Description of Non Compliance	Action Taken	Close Out**	
								Immediate	Follow up
27.									
ENVIRONMENTAL CONTROLS									
28.	Sediment controls								
29.	Water Quality								
30.	Waste Management								
31.	Noise / Vibration								
32.	Air Quality								
Other issues / activities									
33.									
34.									
35.									
36.									
37.									
38.									
Comment / Description or Additional Items:									
	NOTE: The checklist to be completed by the designated person in the H&S Plan and forwarded to the Project / Workplace Leader and H&S Advisor for review. **CLOSE OUT**** Items identified for "Follow up" are to be registered on the Project C-T-8-**0116** Corrective Action Request Register								
	Personnel/Subcontractors Involved:								

	Risk Class	H&S		Environment

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Management Site Safety and Environment Inspection

PROJECT / LOCATION / CONTRACT NO:									
No.	Item	Evidence Sighted	Risk Class	Responsible	Exact Location	Description of Non Compliance	Action Taken	Close Out**	
								Immediate	Follow up
Inspection undertaken by: …… Signature: …… Position: …… Date: …… Project/ Workplace Leader's Signature:……			0	Complies			Complies		
			1	Alters the future of an individual permanently, (risk of death or permanent disability.)			Permanent or long term damage to the environment. Damage will take 12 months or more to return to pre-existing conditions		
			2	Alters the future of an individual temporarily (risk of medical treatment.)			Short to medium term damage to the environment. Damage will take up to 12 months to return to pre-existing conditions		
			3	Does no more than inconvenience the person (1st Aid treatment,)			Easily rectified usually within one day. Class 3 incidents do not cause medium or long term damage.		
				DISTRIBUTION: Project/ Workplace Leader, Contract File			Refer: CHSP & EMP		

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Sydney Metro City & Southwest

Environmental Reporting Template

Contract:	
Instructions:	

Issues	**This month**	**To date**
Air quality issues raised		
Community, stakeholder and business issues raised		
Design issues raised		
Flora and fauna issues raised		
Heritage issues raised		
Management systems issues raised		
Nosie and vibration issues raised		
Soil and water issues raised		
Traffic transport and access issues raised		
Waste and spoil issues raised		

An Issue or Non-compliance with a CEMP requirement where the Issue or Non-compliance is relevant to multiple Sub-plans should be classified as Management Systems, for example:
• Failure to produce up to date Environmental Control Maps;
• Failure to deliver topic specific environmental training or toolbox talks; or
• Failure to maintain document control of environmental documentation.

An Issue or Non-compliance with a CEMP requirement where the Issue or Non-compliance is unique to the CEMP should be classified as Management Systems, for example:
• Failure to follow the incident management process;
• Failure to conduct regular Management Reviews of the EMS;
• Failure to communicate environmental issues internally; or
• Failure to maintain ISO 14001 certification.

An Issue or Non-compliance with a Sub-plan requirement where the Issue or Non-compliance is unique to that sub-plan should always be classified using the corresponding sub-plan category regardless of whether it could also be seen as a CEMP requirement, for example:
• Failure to maintain waste management records should be classified as Waste and Spoil;
• Failure to deliver topic specific Nosie and Vibration training should be classified as Nosie and Vibration;
• Failure to seeking approval to conduct works out of hours should be classified as Noise and Vibration; or
• clearing vegetation that is within a protected zone should be classified as Flora and Fauna.

Incidents	**This month**	**To date**
Number of Class 1 incident occurrences		
Number of Class 2 incident occurrences		
Number of Class 3 incident occurrences		
Non-compliances	**This month**	**To date**
Number of non-compliances raised		
Number of open non-compliances		
Corrective and Preventative Actions (Incidents and Non-compliances only)	**This month**	**To date**
Number of open Corrective Actions	0	0
Percentage and number of closed Corrective Actions	0	0
Environmental Audit Findings	**This month**	**To date**
Number of audit findings on Environmental Requirements which since the audit date have been open — >120 days		
Number of audit findings on Environmental Requirements which since the audit date have been open — between 120 and 60 days		
Number of audit findings on Environmental Requirements which since the audit date have been open — <60 days		
Number (and percentage) of open environmental audit findings closed in the month	[x(y%)]	
Environmental Protection Licence	**This month**	**To date**
Licence variations		
Emergency out of hours work (OOHW) events		
EPA Inspections		
Environmental Approvals	**This month**	**To date**
Consistency Assessments Determined by Sydney Metro		
Total ongoing Environmental Requirements		
Total Completed Environmental Requirements		
Environmental Training	**This month**	**To date**
Number of environmental training courses delivered		

Non-Conformance Report (NCR)

Always use the approved project collaboration system where available before using this hard copy system.

1. PROJECT DETAILS

NCR No.:

Contract Title: Contract No.:

Issued To: Attention:

Order/Sub. No.: ITP/ITR Ref.:

Specification: Drawing Ref.:

NCR raised by: Date:

2. DETAILS OF NONCONFORMANCE

NCR Subject: Location/Lot No./Package:

Non-conforming Details:

3. REMEDIAL ACTION PROPOSED (What action will be taken to rectify the non-conformance and prevent recurrence)

Rectification:

- ☐ Rework or repair to meet specified requirements
- ☐ Accept without repair by concession (use as is)
- ☐ Repair with concession
- ☐ Reject and scrap
- ☐ Regrade for alternative application
- ☐ Design Change

Rectification Details:

Cause of Non-conformance: (Categorise and detail the underlying cause of the non-conformance?)

☐ People ☐ Environment ☐ Equipment ☐ Documentation ☐ Organisation

Corrective & Preventative Action: (What action will be taken to eliminate cause and prevent a recurrence of the non-conformance?)

Actions Proposed by: Design Change

Date: Request Required: Yes / No DCR No. _____

4. PROPOSED REMEDIAL ACTION REVIEWED AND ACCEPTED:

Signed: _____ Date: _____ Signed: _____ Date: _____

COMPANY Representative — Client's Representative (if applicable)

Print Name: _____ Print Name: _____

5. REMEDIAL ACTION COMPLETED

- ☐ Rectification completed, inspected and accepted.
- ☐ Corrective action effective

Signed: _____ Date: _____ Signed: _____ Date: _____

COMPANY Representative — Client's Representative (if applicable)

DISTRIBUTION: Recipient to complete section 3 and return/email to COMPANY for acceptance. COPY: To Client and Design if applicable

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File Ref:

ENVIRONMENTAL INCIDENT & COMPLAINT REPORT No. .....

LAING O'ROURKE

Instructions: This report must be used to record all environmental incidents including pollution events and complaints. Class 1 or 2 incidents as defined in F 1204 Environment Incident Classifications will require a full investigation with supporting information such as photographs, records of interviews, etc, and these should be appended to the report.

SITE DETAILS

Location / Project:	Date of Incident:
Report raised by:	Date of Report:

DETAILS OF PERSONS INVESTIGATING INCIDENT/COMPLAINT

Team Leader Name		Position		Contact Number	
Team Member Name		Position		Contact Number	
Team Member Name		Position		Contact Number	

STEP 1: PROBLEM IDENTIFICATION AND PREPARATION

Incident Class (Refer F 1204)	Class 1 ☐	Class 2 ☐	Class 3 ☐

BASIC DETAILS OF THE INCIDENT/ COMPLAINT (Provide full details of incident)

Incident/ Complaint reported by:	Duration of Incident/ Complaint:
Exact location of Incident/ Complaint:	Time of Incident/ Complaint::

Comments

STEP 2: Observation / Information Gathering

1. **Take samples or obtain results (required for Class 1&2)** – laboratory results or insitu samples (Note: for Class 1 & 2 incidents NATA certified laboratories may be required)
2. **Interview persons involved where required** – Include witnesses / supervisors / experts
3. **Inspect the incident scene –** Take measurements (do not guess), photos, videos, drawings, diagrams / sketches.

List of attachments

No.	Details	No.	Details
1		3	
2		4	

STEP 3: Give a detailed description of the incident/complaint

Nature of Incident/ Complaint: (more than one box may be marked)

- ☐ Complaint from public, client, etc
- ☐ Breach of licence conditions, Act or regulation
- ☐ Discovery of cultural heritage item, artefact, etc
- ☐ Near miss (no actual damage to environment)
- ☐ Unauthorised release of harmful substance to environment
- ☐ Penalty or fine imposed by authority (Amount $ .....)
- ☐ Environmental controls failed or were ineffective
- ☐ Pollutant (specify type) .....

Details (Explain exactly what happened, why, where, quantity of pollutant, etc):

File Ref:

ENVIRONMENTAL INCIDENT & COMPLAINT REPORT No. .....

LAING O'ROURKE

Remedial action (Action to rectify the problem)

Containment / Rectification / Remediation: (more than one box may be marked)

- ☐ Notify relevant & interested parties
- ☐ Contain pollution / Clean-up site
- ☐ No remedial action possible or practical
- ☐ Repair / improve environmental controls
- ☐ Rectify damage and remediate area
- ☐ .....

Details:

STEP 4: BASIC LEVEL INCIDENT ANALYSIS

List Elements

List the "people", "equipment", and "environment" elements involved in the incident

PEOPLE	EQUIPMENT	ENVIRONMENT

List Essential and Contributing Factors

For each element listed above identify essential & contributing factors. *Essential* = factor is essential for the incident to occur. *Contributing* = factor increases the likelihood of occurrence, but removal may not interrupt incident

- Poor workplace practices
- Lack of or ineffective induction and training
- Lack of resource
- Equipment failure
- Ineffective controls
- Lack of Planning

Details:

STEP 5: IDENTIFY CORRECTIVE / PREVENTATIVE ACTIONS

Corrective and Preventative Actions may include the following:

- Change to equipment/machinery design / maintenance
- Improve environmental control measures
- Implement additional resources
- Change to work methods or processes
- Change or additional induction/induction
- Additional ongoing training

Details:

STEP 6: IMPLEMENTATION

SUPERVISOR'S COMMENTS

Name		Signature	

ENVIRONMENTAL REPRESENTATIVE

Name		Signature	

PROJECT LEADER'S/WORKPLACE MANAGER COMMENTS

Name		Signature	

ACTIONS COMPLETED

- ☐ Rectification completed
- ☐ Corrective and preventive action completed

Signed Project Leader/Workplace Manager: _____ Date:_____

DISTRIBUTION: **Original –** master file; **Copies:** Environmental Manager, other relevant parties.

NOISE MONITORING RECORD

RECORD NUMBER:	**TESTING CONDUCTED BY:**
WEATHER CONDITIONS (i.e. wind/rain/cloud cover %):	**NOISE METER:** **LAST CALIBRATED:**
WORK LOCATION:	**WORK AREA:**
MONITORING LOCATION (e.g. address of sensitive receiver or monitoring location):	
MONITORING DATE:	**MONITORING TIME:**
MONITORING TYPE:	**WORKING HOURS:**
COMPLAINT RELATED:	**OOHW APPROVAL:**
CNVIS:	**NCA:**

NML DAY:	**NML EVENING:**	**NML NIGHT:**

RESULTS

LAeq	Lmax	Lmin	L1	L10	L50	L90	Modelled LAeq (From CNVIS)	Specified Noise Limit	NML

Site Activities / Monitoring Comments:

Is construction noise audible?

Is extraneous noise present during monitoring?

Is construction noise the dominant noise?

Is construction noise continuous or intermittent?

Is construction noise tonal or impulsive?

Have mitigation measures been implemented?

Site layout:

Signature: Date:

VIBRATION MONITORING RECORD

RECORD NUMBER:	**TESTING CONDUCTED BY:**
WEATHER CONDITIONS (i.e. wind/rain/cloud cover %):	**VIBRATION METER:** **LAST CALIBRATED:**
WORK LOCATION:	**WORK AREA:**
MONITORING LOCATION (e.g. address of sensitive receiver or monitoring location):	
MONITORING DATE:	**MONITORING TIME:**
MONITORING TYPE:	**WORKING HOURS:**
COMPLAINT RELATED:	**OOHW APPROVAL:**
CNVIS:	**RELEVANT VIBRATION STANDARD(S):**

RESULTS

Distance from vibration source (m)	Peak Particle Velocity (mm/s)	Frequency of Vibration (Hz)	Human Comfort Vibration Limit (where applicable)	Structural Vibration Limit (where applicable)	Compliance with limits

Site Activities / Monitoring Comments:

Is construction vibration occurring?

Is extraneous vibration sources present during monitoring?

Is construction vibration the dominant source?

Is construction vibration continuous or intermittent?

Have mitigation measures been implemented?

Site layout:

Signature: Date:

WATER QUALITY MONITORING RECORD

DATE OF TEST: **RECORD NUMBER:**	**TESTING CONDUCTED BY:**
WEATHER CONDITIONS (i.e. rain):	**RAIN IN LAST 24 HOURS (mm):** **RAIN IN LAST 5 DAYS (mm):**
REASON FOR MONITORING:	
WATER QUALITY METER: **LAST CALIBRATED:**	

	RESULTS								
LOCATION:	TIME	Oil or Grease (visual)	Temp (^{0}C)	pH	Conductivity (ms/cm)	Turbidity (NTU)	TSS (mg/L)	Dissolved Oxygen (DO)	Salinity (EC)

Site Activities / Monitoring Comments:	

Signature: Date:

John Holland Laing O'Rourke Joint Ventrure
Sydnenham Station and Junction Project
Environmental Training register

Date	Training Type/Course name	Name of Staff Member or Worker	Key compentancies from training	Course Delivery Method	Was this training a project specific requirement

John Holland Laing O'Rourke Joint Ventrure
Sydnenham Station and Junction Project
Waste Register

Date	Waste Contractor	Waste Type	Classification	Disposal Site	Disposal Site EPL	Weight (t)	% Recycled	Weight Recycled (t)

Appendix M: Environmental Audit Schedule

			2024											2025										
			January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Element	**Audit Lead**	**Frequency**																								
JHLORJV General HSEMS or HSEMS with Environmental Management Plan focus	TfNSW or Parent Company	6 monthly (biannually)												P						P						P

			2026											2027										
			January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Element	**Audit Lead**	**Frequency**																								
JHLORJV General HSEMS or HSEMS with Environmental Management Plan focus	TfNSW or Parent Company	6 monthly (biannually)						P																		

Note: Environmental Management Plans dictate how the LORAC HSEMS will be applied on site. As such, an audit on management plan application is consistent with the requirement for an HSEMS audit under the LORAC HSEMS.

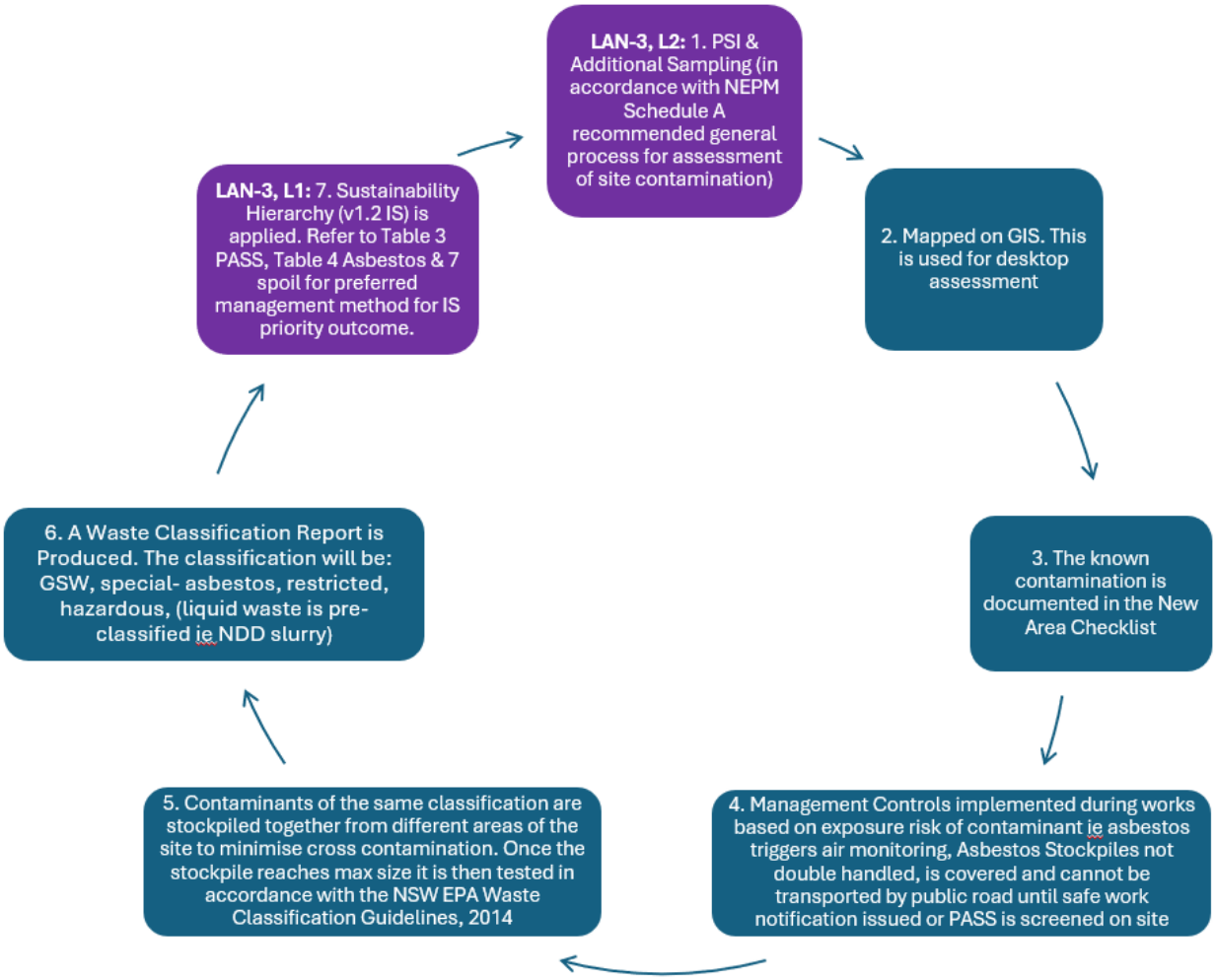
Note: HSEMS audits will include as a minimum:

- Compliance with approval, permit and licence conditions
- Compliance with this CEMP, sub-plans and ERAPs/Procedures
- Complaints and Complaint response
- Environmental Training
- Environmental Monitoring and Inspection

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Appendix N: S2B Contamination Management Strategy

Appendix N: S2B Contamination Management Strategy includes a Staged Approach to Contamination Investigation, the Sustainability Hierarchy (v1.2 IS) and Table 1 of 'A Framework for Assessing the Sustainability of Soil and Groundwater Remediation'



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1 STAGED APPROACH TO CONTAMINATION INVESTIGATION

The 2011 Office of Environment and Heritage Guidelines for Consultants Reporting on Contaminated Site identifies a staged approach to site investigations. This is also illustrated in *Schedule A Recommended general process for assessment of site contamination of National Environment Protection (Assessment of Site Contamination) Measure 1999.*

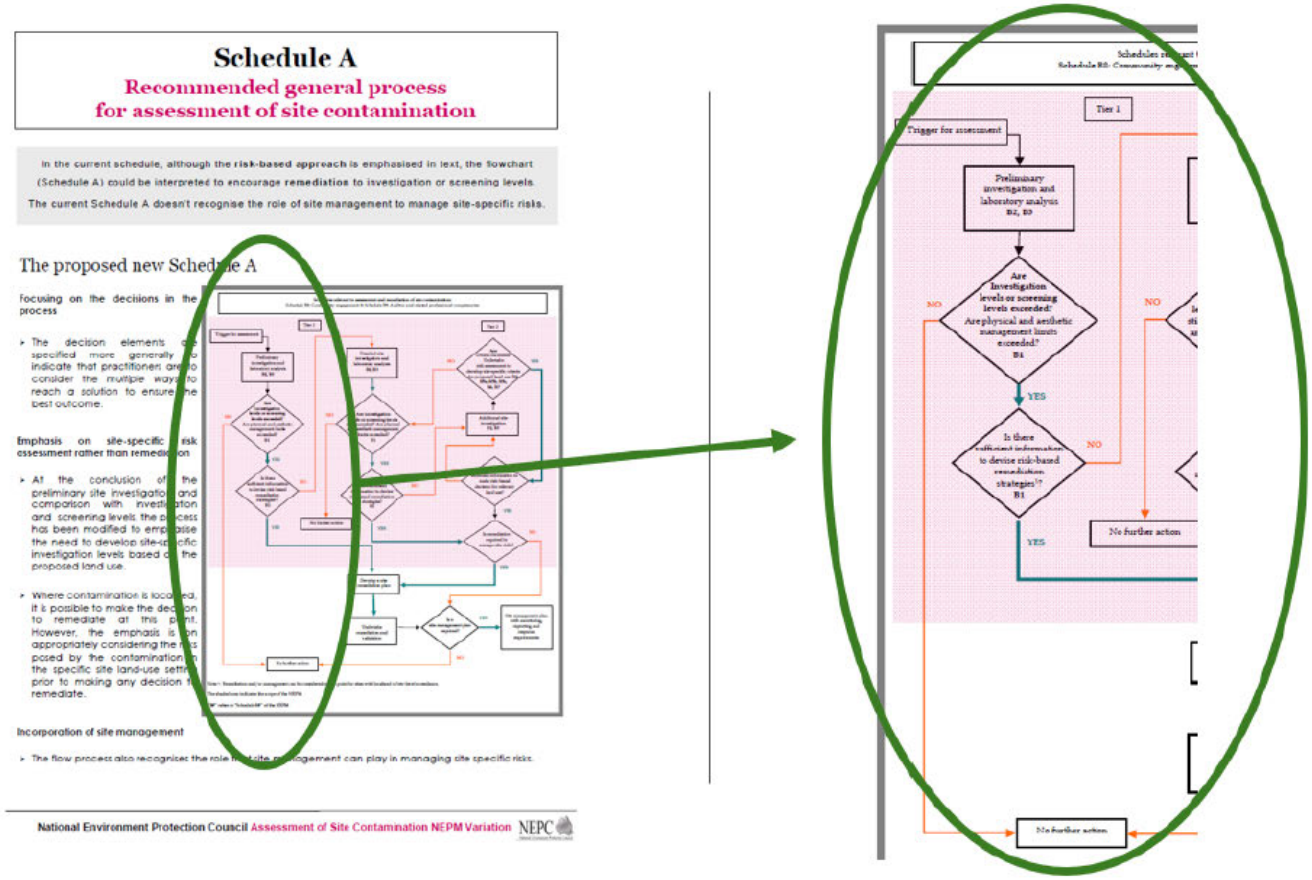
Table 1 Staged Approach to Contamination Investigation below outlines the staged approach to the Project Contamination Assessment. Refer to Figure 1 : NEPM Assessment of Site Contamination for the mapped process from the *trigger for assessment* to *no further action*.

Table 1: Staged Approach to Contamination Investigation

Staged approach to site investigations	Project Implementation or context
Stage 1- Preliminary Site Investigation (PSI): This initial stage involves gathering historical information about the site, conducting a site inspection, and identifying potential contamination sources. The goal is to develop a conceptual site model and determine whether further investigation is needed.	EIS: A preliminary contamination assessment was undertaken as part of the design process identified that there is a low to medium risk of contamination along the majority of the project area, with a medium to high risk in three areas (between Sydenham and Marrickville stations, between Campsie and Belmore stations, and between Punchbowl and Bankstown stations). Further sampling was undertaken to further categorise the potential material health and/or environmental impacts.
Stage 2- Detailed Site Investigation (DSI): If the PSI indicates potential contamination, a DSI is conducted. This involves more comprehensive sampling and analysis of soil, groundwater, and other media to delineate the extent and nature of contamination. The results help in assessing the risk to human health and the environment.	The PSI (with sampling), has determined more comprehensive investigation was not required. Further preliminary contamination reports were produced to indicate that contamination can be appropriately managed through the Unexpected Finds Protocol. CEMP: All contamination hotspots will 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. Refer to New Area Checklists & Project GIS.

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Stage 3- Remedial Action Plan (RAP): Based on the findings of the DSI, a RAP is developed to outline the remediation objectives, methods, and validation processes. The RAP ensures that the site will be remediated to a level that is safe for its intended use.	In New South Wales (NSW), a Remediation Action Plan (RAP) is required under several circumstances, primarily guided by the State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) and the Contaminated Land Management Act 1997. Generally a RAP may be triggered as follows: 1. Identified Contamination: If land contamination is identified during site assessments or investigations, a RAP is required to outline the steps for remediation. 2. Development Application: When submitting development applications, especially for land that may be contaminated, a RAP is often required to ensure the land is safe for its intended use. 3. Rezoning Applications: If land is being rezoned and there is potential contamination that exceeds the threshold for that land use, a RAP must be prepared to address any remediation needed. 4. Regulatory Requirements: The NSW Environment Protection Authority (EPA) may require a RAP if contamination is significant enough to warrant regulatory intervention. The RAP should detail the remediation objectives, methods, and validation processes to ensure the land is safe for its proposed use. In accordance with *Sustainability Hierarchy (v1.2 IS)*, the PSI has identified that remediation would have no net environmental benefit and implementing the CEMP and Sub Plans is the appropriate management strategy.
Stage 4- Site Remediation and Validation: This final stage involves implementing the RAP and validating that the remediation objectives have been achieved. It includes monitoring and reporting to ensure that the site meets the required standards for safety and environmental protection	This validation process must be carried out by a NSW EPA Accredited Site Auditor who will generate a Site Audit Statement (SAS) based on the validation evidence provided by the land owner or developer. The objective of the SAS is to verify whether the site is safe for its intended land use.



Schedule A
Recommended general process
for assessment of site contamination

In the current schedule, although the risk-based approach is emphasised in text, the flowchart (Schedule A) could be interpreted to encourage remediation to investigation or screening levels.

The current Schedule A doesn't recognise the role of site management to manage site-specific risks.

The proposed new Schedule A

Focusing on the decisions in the process

- The decision elements are specified more generally to indicate that practitioners are to consider the multiple ways to reach a solution to ensure the best outcome.

Emphasis on site-specific risk assessment rather than remediation

- At the conclusion of the preliminary site investigation and comparison with investigation and screening levels the process has been modified to emphasise the need to develop site-specific investigation levels based on the proposed land use.
- Where contamination is located, it is possible to make the decision to remediate at this point. However, the emphasis is on appropriately considering the risks posed by the contamination in the specific site land-use setting prior to making any decision to remediate.

Incorporation of site management

- The flow process also recognises the role that site management can play in managing site specific risks.

National Environment Protection Council Assessment of Site Contamination NEPM Variation NEPC

Tier 1
Trigger for assessment
Preliminary investigation and laboratory analysis
B2, B3
Are investigation levels or screening levels exceeded? Are physical and aesthetic management limits exceeded?
B4
NO
YES
Is there sufficient information to devise risk-based remediation strategies?
B5
NO
YES
No further action
No further action

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Figure 1: NEPM Assessment of Site Contamination

1. Sustainability Hierarchy (v1.2 IS) & Table 1 of 'A Framework for Assessing the Sustainability of Soil and Groundwater Remediation'

Landfilling is often the preferred solution to spoil management as it is a simpler solution for mixed contamination. If a solution can be found to a number of project specific constraints as listed below, there is a potential to avoid landfilling;

- Time Efficiency: Landfilling is a quicker solution compared to the time required for treatment processes, which can be lengthy and complex
- Space and Logistics: Treatment facilities may not always be available nearby, making transportation to a landfill more practical. Additionally, the project site lack the space needed for onsite treatment
- Contaminant Complexity and beneficial reuse: Spoil can contain a mix of contaminants that require different treatment methods, complicating the treatment process. Typically treatment (in situ or ex situ) is applied to reduce the potential for leachability for disposal purposes as opposed to remediating the spoil for reuse. Spoil is abundant and of low value and therefore there is no economic benefit for treatment for reuse.

Although landfilling is the simpler solution it is important to consider the environmental impact and explore sustainable alternatives where possible. For this reason the Sustainability Hierarchy (v1.2 IS) is used. Provided the considerations of the Sustainability Hierarchy have been met, The Project then assesses the feasibility of treating each contaminant from an environmental, social and economical perspective in accordance with *Table 1 of 'A Framework for Assessing the Sustainability of Soil and Groundwater Remediation'* at its highest common classification due to the complexity and specificity of treatment. This is however commonly applied to all spoil generated, as all spoil generated will likely be a mixture of some, if not all the chemical contaminants listed below;

- Acid sulfate soils
- Asbestos
- Hydrocarbons
- Heavy metals

The 2011 Office of Environment and Heritage Guidelines for Consultants Reporting on Contaminated Site identifies a staged approach to site investigations. This is also illustrated in *Schedule A Recommended general process for assessment of site contamination of National Environment Protection (Assessment of Site Contamination) Measure 1999.*

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Table 2: Acid Sulfate Soil

Priority	Sustainability Hierarchy (v1.2 IS)	Method and/or discussion	Justification (application of the SuRF-UK Framework: A general approach to sustainability assessment for use in achieving sustainable remediation (SR1)
1	If Practicable, on site treatment of the contamination, so that it is destroyed, or the associated risk is reduced to an acceptable level	Acid sulfate soils (ASS) are widespread among low lying coastal areas of NSW, in estuarine floodplains and coastal lowlands. Sediments within the channel of the Cooks River are indicated to have a high risk of supporting ASS. Onsite treatment of Acid Sulfate Soils (ASS) involves several methods to neutralize acidity and prevent environmental damage. The following techniques are the most common: 1. Lime Treatment: Adding lime (calcium carbonate) to the soil neutralizes the acidity. This is one of the most effective and widely used methods. 2. Soil Mixing: Mixing the acid sulfate soil with non-acidic soil can help dilute the acidity and reduce its impact. 3. Water Management: Controlling water levels to prevent the oxidation of sulfides in the soil. This can involve techniques like water table management and controlled drainage.	**Environmental:** Each method has its own advantages and limitations, however for this project the only feasible method would be option 1 which is to apply lime. ASS can safely remain in situ if not exposed. ASS is likely to only be exposed due to piling activities. Provided the ASS is treated (on site or off), there is no environmental benefit to treating on site as opposed to off site. **Social:** There is certainty associated with the approach to managing ASS. The scope and associated risk is too low to involve the community beyond what is prescribed in the CEMP and Sub Plans. **Economical:** It is more economical to dispose of the ASS at an appropriately licenced facility.

		4. Containment: Isolating the acid sulfate soil from the environment by using barriers or encapsulation methods to prevent the spread of acidity.	
		5. Bioremediation: Using microorganisms to reduce the acidity and stabilize the soil. This method can be effective but may require specific conditions to work well.	
2	Off-site treatment of excavated soil, so that the contamination is destroyed, or the associated risk is reduced to an acceptable level, after which soil is returned to site.	Acid Sulfate Soils (ASS) are typically not disposed of without some form of management or treatment due to their potential environmental impact. Here are some key points: To prevent potential environmental harm, the soil should be kept wet during handling and disposal to prevent oxidation. ASS should be disposed of in a controlled manner. For example, potential ASS must be disposed of within 8 hours of receipt at a landfill and kept wet until burial at least two meters below the lowest historical level of the water table. Simply disposing of ASS without treatment can lead to significant environmental damage, including acidification of soil and water, release of heavy metals, and harm to vegetation and aquatic life.	**Environmental:** Provided the ASS is treated (on site or off), there is no environmental benefit to treating on site as opposed to off site. **Social:** There is certainty associated with the approach to managing ASS. The scope and associated risk is too low to involve the community beyond what is prescribed in the CEMP and Sub Plans. **Economic:** It is more economical to dispose of the ASS at an appropriately licenced facility. Note: there is no beneficial reuse of ASS and therefore is not returned to site after treatment.

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3	Consolidation and isolation of the soil on site by containment with a properly designed barrier.	The oxidation of Acid Sulfate Soils (ASS) occurs when these soils, which contain iron sulfide minerals like pyrite, are exposed to air. If areas of PASS can be avoided by construction impact, the ASS remain harmless as long as they are undisturbed and waterlogged.	**Environmental:** No PASS is disturbed beyond the impacts associated with the design. **Social:** There is certainty associated with the approach to managing ASS. The scope and associated risk is too low to involve the community beyond what is prescribed in the CEMP and Sub Plans. **Economical:** It is more economical to dispose of the ASS at an appropriately licenced facility.

Table 3: Asbestos

	Sustainability Hierarchy (v1.2 IS)	Method and/or discussion	Justification
1	If Practicable, on site treatment of the contamination, so that it is destroyed, or the associated risk is reduced to an acceptable level	Onsite treatment of asbestos involves several methods to safely manage and remediate asbestos-contaminated materials. Here are some commonly used techniques: Encapsulation: This method involves applying a sealant to asbestos-containing materials (ACMs) to prevent the release of asbestos fibres. Encapsulation is often used when the ACMs are in good condition and not likely to be disturbed.	**Environmental/Economical:** Encapsulation or enclosure is not a desirable outcome for a railway corridor as on-going maintenance may continue to expose areas of known asbestos contamination. **Social:**

		Enclosure: Enclosing asbestos materials involves constructing a barrier around the ACMs to contain the fibres. This method is suitable for areas where the asbestos is not easily accessible.	The asbestos risk on site is considered low and primarily related to works undertaking excavation or maintenance works as opposed to the local community. Asbestos must be managed in accordance with the NSW Safe Work Guidelines. The scope and associated risk is too low to involve the community beyond what is prescribed in the CEMP and Sub Plans.
2	Off-site treatment of excavated soil, so that the contamination is destroyed, or the associated risk is reduced to an acceptable level, after which soil is returned to site.	Off site is the same as on site as there is no process to separate fibres from spoil leaving the option of encapsulating and disposing at an appropriately licenced facility.	It is not feasible or reasonable to remove the spoil containing asbestos fibres and return spoil back to site as there is no beneficial reuse of the spoil.
3	Consolidation and isolation of the soil on site by containment with a properly designed barrier.	In the case of asbestos 1 is the same as 3 when assessed against the Sustainability Hierarchy (v1.2 IS).	NA

Table 4: Hydrocarbons

Sustainability Hierarchy (v1.2 IS)	Method	Justification

1	If Practicable, on site treatment of the contamination, so that it is destroyed, or the associated risk is reduced to an acceptable level	Onsite treatment of hydrocarbon contamination involves several methods to degrade or remove hydrocarbons from soil and groundwater. Here are some effective techniques: Bioremediation: This method uses microorganisms to break down hydrocarbons into less harmful substances. It can be done in situ or ex situ. Bioremediation is effective for a wide range of hydrocarbons.	**Environmental/ Economical:** The hydrocarbon contamination on site is not extensive enough to trigger on site treatment. Space and complexity of application is the most limiting factor. The cost to benefit ratio is in favour of disposal. **Social:** The scope and associated risk is too low to involve the community beyond what is prescribed in the CEMP and Sub Plans.
2	Off-site treatment of excavated soil, so that the contamination is destroyed, or the associated risk is reduced to an acceptable level, after which soil is returned to site.	Landfarming: Contaminated spoil is spread over a prepared bed and periodically tilled to aerate the soil and promote microbial degradation of hydrocarbons. This method is often used in offsite treatment facilities Soil Washing: This technique involves washing the contaminated spoil with a solution that removes hydrocarbons. The cleaned soil is then returned to the site, and the contaminated wash water is treated separately. Enviro Pacific: This facility offers thermal desorption services. Their SOLVE Thermal Plant is located in Macquarie Park, NSW, and is capable of treating a wide range of contaminants, including hydrocarbons. The plant has a production capacity of 30 tonnes per hour and is currently licensed to manage up to 100,000 tonnes annually.	**Environmental/ Economical:** Walker Quarries is located near Wallerawang, NSW and operates a sand washing plant that can handle soil washing, however the project spoil does not have valuable engineering qualities to justify washing and reusing. Usually applied for sand. The hydrocarbon contamination on site is not extensive enough to trigger off site treatment. Space and complexity of application is the most limiting factor. Thermal desorption is typically used for processing highly complex hazardous wastes, from contaminated site owners including Defence, Government, and Major Petrochemical industry. No known landfarming facilities available. **Social:**

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			The scope and associated risk are too low to involve the community beyond what is prescribed in the CEMP and Sub Plans.
3	Consolidation and isolation of the soil on site by containment with a properly designed barrier.	This requirement might be triggered by a RAP, however the hydrocarbon contamination on site is not extensive enough to consider this option.	NA

Table 3: Heavy Metals

	Sustainability Hierarchy (v1.2 IS)	Method	Justification
1	If Practicable, on site treatment of the contamination, so that it is destroyed, or the associated risk is reduced to an acceptable level	Phytoremediation: This environmentally friendly approach uses plants to absorb heavy metals from the soil. Certain plants, known as hyperaccumulators, can take up and concentrate heavy metals in their tissues, which are then harvested and disposed of safely Solidification/Stabilization: This method involves mixing contaminated soil with binding agents like cement or lime to immobilize heavy metals, preventing them from leaching into the environment	**Environmental/ Economical:** The heavy metal contamination on site is not extensive enough to trigger on site treatment. Space and complexity of application are the greatest limiting factors. The cost to benefit ratio is in favour of disposal. **Social:** The scope and associated risk is too low to involve the community beyond what is prescribed in the CEMP and Sub Plans.

2	Off-site treatment of excavated soil, so that the contamination is destroyed, or the associated risk is reduced to an acceptable level, after which soil is returned to site.	Soil Washing: This method uses water, sometimes with added chemicals, to wash away contaminants. The process involves physical separation based on particle size, density, and magnetism, as well as chemical extraction to dissolve and remove heavy metal.	**Environmental/ Economical:** Walker Quarries is located near Wallerawang, NSW and operates a sand washing plant that can handle soil washing, however the project spoil does not have valuable engineering qualities to justify washing and reusing. Usually applied for sand. **Social:** The scope and associated risk is too low to involve the community beyond what is prescribed in the CEMP and Sub Plans.
3	Consolidation and isolation of the soil on site by containment with a property designed barrier.	This requirement might be triggered by a RAP, however the heavy metal contamination on site is not extensive enough to consider this option.	NA

Table 4: Spoil generated by the project

	Sustainability Hierarchy (v1.2 IS)	Method	Justification
1	Removal of contaminated material to an approved site of facility, followed, where necessary, by replacement with appropriate material.	All spoil is classified in accordance with the NSW EPA Waste Classification Guidelines (2014) and disposed of at an appropriately licenced facility.	**Environmental/ Economical:** The cost to benefit ratio is in favour of disposal. **Social:**

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			The scope and associated risk is too low to involve the community beyond what is prescribed in the CEMP and Sub Plans.
2	Where the assessment indicates remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.	Applied to the land within the project area, in accordance with *Sustainability Hierarchy (v1.2 IS)*, the PSI and additional contamination reports have identified that remediation would have no net environmental benefit and implementing the CEMP and Sub Plans is the appropriate management strategy.	No further consideration as not triggered.

Appendix O: SCHEDULE E6 Environmental Performance and Compliance Incentive

S2B/EPA Relationship Quality Survey				
			Description	**Score**
	Category	**Question**	**Agree/Disagree**	**Please place a 1 to 5 in the box below**
1	Compliance Understanding	The Licensee clearly understands the regulatory requirements and expectations of the EPA.		
2	Respect and Cooperation	The Licensee engages respectfully and cooperatively with the EPA.		
3	Responsiveness and Engagement	The Licensee responds promptly and constructively to EPA communications.		
4	Integrity and Trustworthiness	The Licensee has developed a good working and transparent relationship with the EPA. The Licensee has demonstrated ethical behaviour and appears to operate in good faith.		
5	Willingness to Collaborate	The Licensee is willing to work collaboratively to resolve issues and improve compliance.		
		Total		**0**

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Description	Score
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5