Southwest Metro Sydenham to Bankstown Construction Environmental Management Plan

Document and Revision History

Document Details		
Title	Construction Environmental Management Plan – South West Metro – Sydenham to Bankstown	
Client	Sydney Metro City & Southwest	
Client reference no.	**SWMC, BEW, SWM1 & 2, SWMC additional works**	SMCSWSSJ-JHL-WEC-EM-PLN-000011
JHLOR JV contract no.	K44	

Revisions

Revision	Date	Description	Prepared by	Reviewed by
0.0	15/09/2020	Internal Review	Dylan Greeff	Dan Keegan
1.0	29/09/2020	Submitted to Sydney Metro and ER for review	Dylan Greeff	Dan Keegan
2.0	12/11/2020	Updated for Sydney Metro and ER comments	Rachael Labruyere	Dan Keegan
3.0	30/11/2020	Updated for Sydney Metro and ER comments	Rachael Labruyere	Dan Keegan
4.0	01/02/2020	Updated for DPHI and Sydney Metro comments	Rachael Labruyere	Dan Keegan
5.0	23/03/2021	Updated Biodiversity ERPA for haul road in EEC advice Updated for Canterbury Compound Set-up	Dan Keegan	Paul Fields
6.0	5/05/2021	Updated for Sydney Metro and ER comments	Dan Keegan	Paul Fields
7.0	24/05/2021	Updated for laydown area at Bankstown	Dan Keegan	Paul Fields
8.0	5/06/2021	Updated for Sydney Metro comments and for Canterbury compound fit-out	Dan Keegan	Paul Fields
9.0	22/0720/21	Updated to include Bankstown Early Works	Chris McCallum	Mark Turner
10	04/09/2021	Updated to include Sydney Metro and ER comments	Chris McCallum	Dan Keegan
11	14/09/2021	Updated to include Sydney Metro and ER comments	Chris McCallum	Dan Keegan
12a	29/04/2022	Updated to include Bankstown & Additional Corridor Works	Chris McCallum	Lucas Dobrolot
12b	05/05/2022	6 monthly update- first submission	Lucas Dobrolot	Tony Deacy
13	01/06/2022	6 monthly update- second submissions and comments	Lucas Dobrolot	Tony Deacy
14	29/06/2022	Updated to include Sydney Metro and ER comments	David Parkinson	Chris McCallum
15	27/03/2023	Updated to exclude Bankstown & Additional Corridor Works (BAC) & clarify project boundary requirements	Zhengyi Zhang	Lucas Dobrolot
16	21/06/2023	Updated to include station bracket scope	Zhengyi Zhang	Lucas Dobrolot
17	28/06/2023	Updated to include Sydney Metro and ER comments	Zhengyi Zhang	Lucas Dobrolot
18	16/10/2023	Updated to include SWM1 / CPR111 scope	Zhengyi Zhang	Chris McCallum
19	23/10/2023	Updated to include Sydney Metro comment	Zhengyi Zhang	Chris McCallum
20	30/10/2023	Updated to include SWM2 / CPR117 scope	Zhengyi Zhang	Chris McCallum
21	1/06/2024	Updated to align with new HSEMS updates and HSEMS Audit findings, Updated to include SMC additional works under S2B	Lucas Dobrolot	Sean Robertson
22	19/06/2024	Address Comments from SM & ER	Lucas Dobrolot	Sean Robertson
23	03/07/2024	Address Comments from SM & ER	Lucas Dobrolot	Sean Robertson

Management reviews

Version	Details	Date	Reviewed By	Signature
			Sean Robertson	

Controlled:	NO	Copy no.:	Uncontrolled:	YES

Terms and Definitions

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

Terms	Explanation
AHD	Australian Height Datum
ARI	Average Rainfall Intensity
AS	Australian Standard
Assurance Application	Laing O'Rourke's Online Tool to manage Non-Conformances
BAC	Bankstown Station and Additional Corridor Works (scope of works removed)
BEW	Bankstown Early Works scope of works
CAR	Corrective Action Request
CBT	Corridor Bankstown
CCB	City of Canterbury-Bankstown (Council)
CCS	Community Consultation Strategy
CCTV	Closed Circuit Television
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CFCs	Chlorofluorocarbons
CHMP	Construction Heritage Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CNVIS	Construction Noise and Vibration Impact Statement
CNVS	Construction Noise and Vibration Statement
CoA	Conditions of Approval
Core Process and Enabling Processes	Core Process (Governance) and Enabling Process (Detail) provide a coordinated overview of the processes and controls in Laing O'Rourke.
CRAW	Construction Risk Assessment Workshop
CSSI	Critical State Significant Infrastructure
CTMP	Construction Traffic Management Plan
Cwth	Commonwealth
dB	Decibels
DIPNR	Department of Infrastructure, Planning and Natural Resources
DDA	Disability Discrimination Act
DECC	NSW Department of Energy and Climate Change (now OEH)
DPHI	NSW Department of Planning, Housing and Infrastructure
ECM	Environmental Control Map
ECR	Environmental Compliance Requirement
EEC	Endangered Ecological Community
EIFR	Environmental Incident Frequency Rate

Terms	Explanation
EIS	Environmental Impact Statement (Sydney Metro City and Southwest Chatswood to Sydenham) Environmental Impact Statement dated 3 May 2016 submitted to the Secretary seeking approval to carry out the CSSI and as revised if required by the Secretary under the EP&A Act
EMS	Environment Management System
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence under the POEO Act
ER	Environmental Representative (independent of design and construction personnel)
ERAP	Environmental Risk Assessment Plans
GLT	Ground Level Troughing
GST	Galvanised Steel Troughing
HSE	Health Safety and Environment
HSEMS	Health Safety and Environment Management System
HSEQ	Health Safety Environment and Quality
HV	High voltage
iGMS	Laing O'Rourke Intranet and Business Wide Management System
Impact	Laing O'Rourke Online Reporting System
ISO	International Standardization Organisation
ITP	Inspection and Test Plan
IWC	Inner West Council
JSEA	Job Safety and Environment Assessment
JH	John Holland Group Pty Limited
JHLORJV	John Holland and Laing O'Rourke joint venture
Laing O'Rourke/ LOR / LORAC	Laing O'Rourke Australia Construction Pty Limited
LEP	Local Environmental Plan
LPG	Liquefied Petroleum Gas
LV	Low voltage
The Minister	The Minister of New South Wales (NSW) Planning Housing and Infrastructure
MSB	Metro Service Building
NATA	National Association of Testing Authorities
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
OHWS	Overhead Wiring System
OOHW	Out-of-Hour Works
PEM	Project Environmental Manager
PIR	Submissions and Preferred Infrastructure Report The Sydney Metro City and Southwest Chatswood to Sydenham Submissions and Preferred Infrastructure Report dated October 2016 submitted to the Secretary under the EP&A Act
POEO Act	Protection of Environment Operations Act 1997 (NSW)

Terms	Explanation
PPE	Personal protective equipment
Proponent	The person or organisation identified as the proponent in Schedule 1 of the planning approval. In this case Sydney Metro Authority
Registered Aboriginal Parties	As defined in the Aboriginal cultural heritage consultation requirements for proponents 2010
REMM	Revised Environmental Mitigation Measure
RMS	Road and Maritime Services (Now Transport for NSW, TfNSW)
S2B	Sydenham to Bankstown is the JHLORJV scope of works, collectively SWMC, BEW, BAC, SWM1, 2, and 3)
SCO	Sydney Coordination Office
Secretary	The Secretary of the Department of Planning, Industry and Environment
SDS	Safety Data Sheet
SM	Sydney Metro
SSI	State Significant Infrastructure
SMC	South West Metro Corridor scope of works
SWM	(SWM 1, 2) Southwest Metro Conversion and Station Work Package scope 1 & 2 of the S2B Project
SWMS	Safe Works Method Statement
TBA	To be Advised
TEC	Threatened Environmental Communities
TfNSW	Transport for New South Wales
TS	Threatened Species
TTS	Temporary Transport Strategy
WIRES	Wildlife Information, Rescue and Education Service

Table of Contents

1.0 Purpose

The Southwest Metro (SWM) Project was assessed as SSI 8256 before being modified through Mod-1 to Critical State Significance Infrastructure (CSSI 8256) by the Minister for Planning and Environment under Part 5.1 of the *Environmental Planning and Assessment Act 1979 (*EP&A Act). The Project determination was made on the 12th of December 2018 and Mod-1 was determined on the 22nd October 2020. The South West Metro Corridor Works (SMC) and Sydenham to Bankstown (S2B) (packages of SWM) were awarded to the John Holland Laing O'Rourke Joint Venture (JHLORJV).

This Construction Environmental Management Plan (CEMP) and associated Sub-plans have been prepared to comply with the requirements of the planning approval CSSI 8256, contract requirements for environmental management, relevant environmental legislation and other environmental obligations associated with the project.

The CEMP is intended to ensure that positive and negative effects on the environment are assessed as they relate to organisational stakeholders including those described in Laing O'Rourke's (LOR) Health, Safety and Environmental Management System (HSEMS). For the purpose of this Plan, Sydney Metro is also referred to as the "Client" and JHLORJV is also referred to as the "Company".

The CEMP has been developed to:

– ensure that the needs and expectations of the Client are met;
– ensure that the project meets contractual, legal and other environmental requirements including the Conditions of Approval, Revised Environmental Mitigation Measures and Construction Environmental Management Framework;
– meet the requirements of ISO 14001:2015 including the need for continual improvement;
– provide a link between the corporate and project management system; and
– provide all LOR personnel with systems, procedures and documentation necessary to undertake the construction of this project with environmental requirements.

1.1 Sub-plan

In accordance with the Sydney Metro City & Southwest - Sydenham to Bankstown Staging Report, JHLOR will implement the environmental management requirements of the CEMF in line with the "SMC and additional Works"C column in Table 5 from the Staging Report (revision 8). In Q3 2021 the Staging Report was revised to include the Bankstown Early Works and in Q2 2022 the Report was updated to include the Bankstown Station and Additional Corridor Works (BAC) as per CoA A12-A15 (Figure 1). Due to the cancellation of BAC in Q4 2022, BAC scope was excluded in the environmental management requirements of the CEMF from Q1 2023. Sub packages of the BAC scope have been released as part of the SWM1 and SWM2 contract packages as well as SMC additional works. This CEMP is updated accordingly. The above mentioned contract packages form the Sydenham to Bankstown (S2B) portfolio of works.

The following CEMP Sub-plans, are to be submitted to the Department of Planning, Housing and Infrastructure (DPHI) in accordance with Condition of Approval **(CoA)-C3** and *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade – Staging Report*:

- Construction Noise and Vibration Management Plan (as referred to in **CoA-C3a**)
- Construction Soil and Water Management Plan (as referred to in **CoA-C3b**)
- Construction Heritage Management Plan (as referred to in CoA-C3d)

Note: Construction Waste and Spoil and Recycling Management Sub-Plan (as referred to in CoA-C3c) in accordance with the Staging Report Rev 07, S4.1.2 will be captured within the CEMP.

The following CEMP Sub-plans, are not required to be submitted to DPHI:

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

The Construction Traffic Management Plan (CTMP) is to be submitted to Transport for NSW (TfNSW) following engagement with the Sydney Coordination Office (SCO) and submitted to the DPHI for information.

Management of the following aspects during construction have been incorporated into the CEMP Environmental Risk Action Plans (ERAPS) (Appendix 4);

- Flora and Fauna/Biodiversity
- Delivery and storage of chemicals
- Groundwater
- Waste, Spoil & Recycling
- Air Quality

Construction, as defined within the Planning Approval, will not commence until the CEMP and relevant Sub-plans are endorsed by the Environmental Representative (ER) and approved by the Secretary.

Figure 1 - Table 5 from the Sydney Metro City and Southwest Sydenham to Bankstown Upgrade Staging Report (Revision 8, Sydney Metro, 2024)

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

Table 1 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 1 Guideline for the Preparation of Environmental Management Plans (DIPNR) compliance matrix

Requirement	Document Reference
Introduction	Section 1 and Section 2
Project Description	Section 2
EMP Context	Section 1, Section 2 and Section 8
EMP Objectives	Section 6
Environmental Policy	Section 5

Requirement	Document Reference
Environmental Management Structure and Responsibility	Section 7 and Appendix 10
Approval and Licensing Requirements	Section 8, Appendix 2 and Appendix 7
Reporting	Section 11
Environmental Training	Section 10
Emergency Contacts and Response	Section 15, Section 16, Appendix 1 and Appendix 6
Risk Assessment	Section 9 and Appendix 3
Environmental Management Activities and Controls	Aspect specific Sub-plans, Appendix 3 and Appendix 4
Environmental Control Maps	Appendix 5
Environmental Schedules and Forms	Section 20, Appendix 15
Environmental Monitoring	Section 16 and aspect specific Sub-plans
Environmental Auditing	Section 18
Corrective Action	Section 16
EMP Review	Section 3, Section 19

A full compliance matrix against the Conditions of Approval (CoA) and CEMF conditions relevant to the CEMP is provided in Appendix 14.

2.0 Scope

This CEMP applies to the full scope of project activities described in the contract and relevant conditions of approval over which we have the ability to control or influence with due consideration to the life cycle perspective and stakeholder relationships.

Sydney Metro City & Southwest is a new 30km metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the capacity to run a metro train every two minutes in the peak . The Sydney Metro City & Southwest comprises of two components;

- Chatswood to Sydenham Project
- Sydenham to Bankstown Project

The Sydenham to Bankstown Project (S2B), referred to as “the Project” or ‘the works” in this document, is located on the T3 Bankstown line between Sydenham Station and Bankstown Station as detailed in Figure 2a and 2b and Environmental Control Maps (ECM) presented in Appendix 5. The ECM details the project boundary as outlined in the EIS and Sydney Metro’s Consistency Assessment for the portion between Marrickville and Sydenham. The scope of the JHLOR JV works extends to the west of Bankstown Station towards Yagoona Station. Works will occur within the rail corridor on both the up and down line (towards and away from Central), with additional activities occurring within station precincts.

2.1 Consistency Assessments

Sydney Metro have prepared a 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 (Figure 2b 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.

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 would 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.

2.2 Permanent Works

The permanent works include:

- Installation and commissioning of Combined Service Route (GST, GLT, pit & pipe)
- Signalling, communications and HV diversions
- Rail embankment stabilisation including retaining and noise walls
- Installation of drainage
- Installation of security and segregation fencing Civil enabling works for traction substations
- Vegetation clearing
- Access road upgrades/establishment
- Utility diversions
- Bridge remedial works, including installation of crash barriers and throw screens
- Modifications to the existing rail track (including crossovers diamond crossings, hi rail ramps, buffer stops, hi-rail access pads and earthworks and removal of kinematic envelope infringements),
- Overhead wire works (including structure and footings installation/removal)
- Demolition of redundant infrastructure; repairs and upgrades to station buildings and structures; painting; secondary egress provisions at selected stations; fencing; wayfinding; landscaping
- Bankstown Service Building installation
- Bankstown Southern (down) and Northern (up) platform construction
- Finishing works, ULX rectification, Station bracket installation and secondary containment, Mechanical Gap Fillers (MGF) and Platform Screen Doors (PSD) installation at the following stations:
    - Marrickville Station
    - Dulwich Hill Station
    - Hurlstone Park Station
    - Canterbury Station
    - Belmore Station
    - Lakemba Station
    - Wiley Park Station
    - Campsie Station
    - Punchbowl Station
- SWMC additional works
    - Demolition of the State Heritage Listed Bankstown Parcel Office (Subject to EWMS & heritage specialist review)
    - Demolition of Bankstown Amenity Block
    - OHW footing removal and relocation with new to facilitate future truncation of the Bankstown Station (Separation of Sydney Metro from Sydney Trains lines)
    - Diversion of existing stormwater track drainage and services
    - Additional Southwest Corridor Works consisting of boundary fencing and associated vegetation management and track monitoring
    - Additional Asset Upgrades
        - Infringement and track rectification

        - Bridge upgrades renewals
        - Civil asset upgrade renewal
    - Utility works
        - Qenos Pipe removal
        - Non ST or SM assets (typically non-contestable works)
    - Local area works including modification, reinstatement of public space, roads and pedestrian way
    - Property works comprises permanent adjustments to existing private properties

2.3 Temporary Works including compounds

The temporary works include:

- Temporary arrangements to divert and control pedestrians, public transport users, cyclists, public transport and traffic and to provide public access, amenity, security and safety during all stages of design and construction of the Works;
- Temporary arrangements for people and vehicles to safely access all property, including publicly accessible space affected by the Contractor's Activities;
- Temporary arrangements for people and vehicles to safely access the Site;
- Temporary access stairs, walkways and platforms within the Site;
- Temporary construction hoardings, fencing, noise walls, access gates, 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;
- 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 in the vicinity of Bankstown Station for SWM1 & 2,BEW and SWMC Additional works along the full alignment from Sydenham to Bankstown.

Compound

Generally for compounds, worksites and laydown areas refer to Section 21.1 of this CEMP.
In addition to the above works, JHLOR will continue to use the main compound area at the Canterbury Bowls Club site, Close Street, Canterbury. This main compound site will be used by the S2B Project, TSOM Project and other Sydney Metro City and Southwest Sydenham to Bankstown projects as directed by Sydney Metro. The area has been leased by Sydney Metro from City of Canterbury Bankstown. JHLOR will comply with the terms of the lease.

The compound set-up included;

- ERSED controls
- Archaeological investigations
- Geotechnical and service investigations
- Fencing
- Tree trimming and removal
- Installation of hard stand, haul roads and ramps
- Demolition of an existing structure
- Installation of utilities and services for the compound
- Installation of buildings, containers and structures
- Supporting activities required to establish the compound (i.e. road sweeping, dust suppression)

A compound has been established within the carpark on the country (northern) side of Bankstown station within the North Terrace carpark. An amenities block has been provided at the western end of the Metro Service building site. These areas are approved for Construction Compounds within the Sydney Metro City and Southwest Sydenham to Bankstown Submissions and Preferred Infrastructure Report.

Ancillary Facilities
JHLORJV will require ancillary facilities from time to time to support general construction activities. The areas may be used as laydown for construction materials or stockpiling.

In addition JHLORJV have also established ancillary facilities in the MSB locations to provide a PC Supervisory role so that interface contractors can deliver their works. These amenities are minor and temporary in nature and are approved via the relevant Ancillary Facilities assessment process, unless already approved through the EIS/SPIR. The amenities consist of mobile caravan offices and consist of the following functional sections in one enclosure to minimise the impact of the ancillary facility:

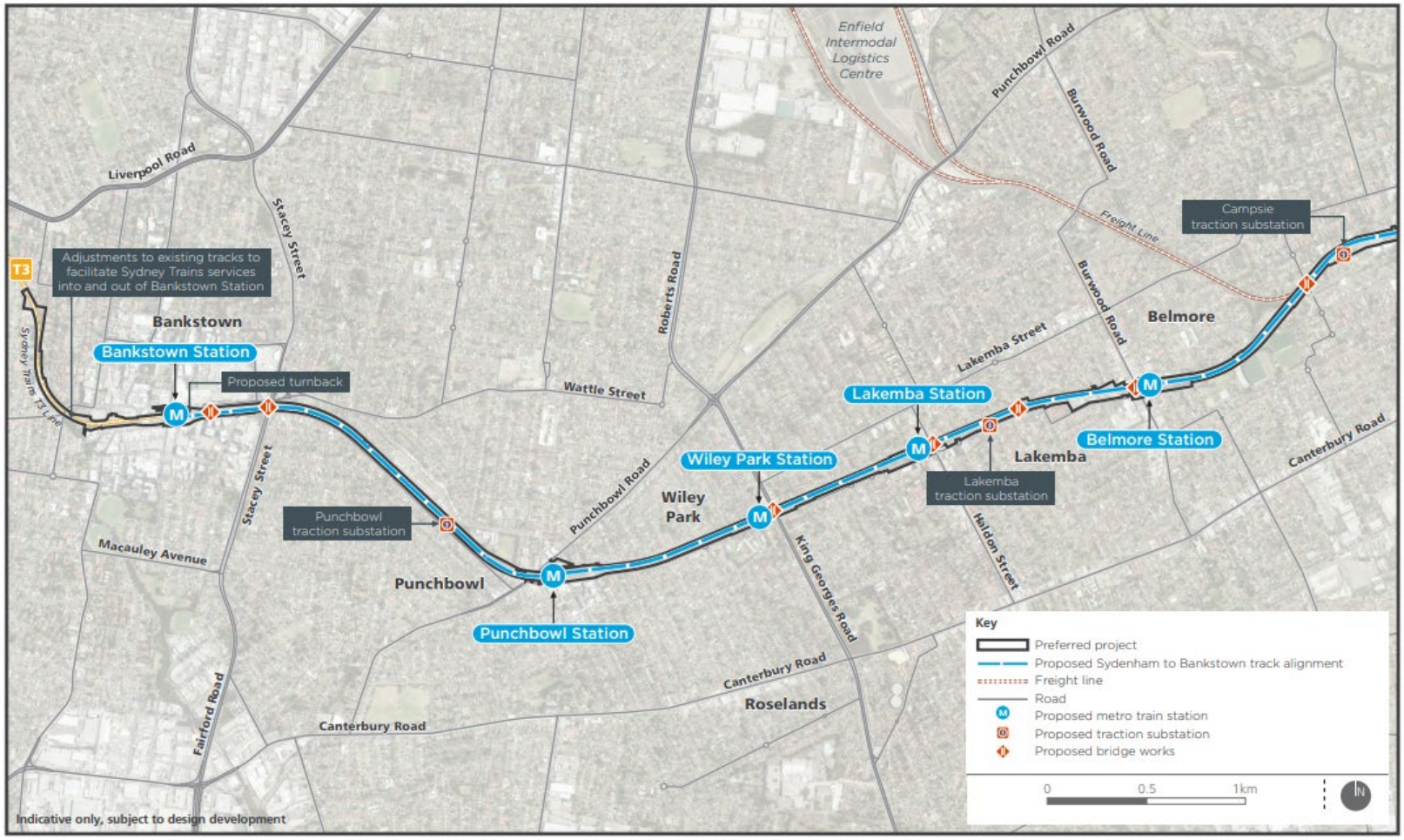
- Ablution block
- Office area
- Lunch area
- Generator

Table 1a: Ancillary facilities

Ancillary Facility	**Status**
A17 Way Street Ancillary Facility and Laydown	August 2024
A19 Belmore Triangle Minor Ancillary Facility	Currently not in use, however maybe reapplied for as required
A19 Punchbowl Minor Ancillary Facility (Access from The Boulevard, Punchbowl)	Currently not in use, however maybe reapplied for as required
A17 Carrington Road Ancillary Facility and Laydown	August 2024
A17 Belmore Triangle (Upper) Ancillary Facility and Laydown	September 2025
A19 Hurlstone Park MSB Ancillary Facility (with caravan)	December 2024
A19 Belmore MSB Ancillary Facility (with caravan)	August 2025
A19 Wiley Park MSB Ancillary Facility (with caravan)	August 2025
A16 Marrickville Station Metro Services Building (MSB) (with caravan)	EIS Approved
A16 Dulwich Hill Station MSB (with caravan)	EIS Approved
A16 Lakemba Station MSB (with caravan)	EIS Approved
A16 Campsie Station MSB (with caravan)	EIS Approved
A16 Punchbowl Station MSB (with caravan)	EIS Approved

Ongoing communication with local residents and businesses will occur in accordance with the Community Communication Strategy.

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



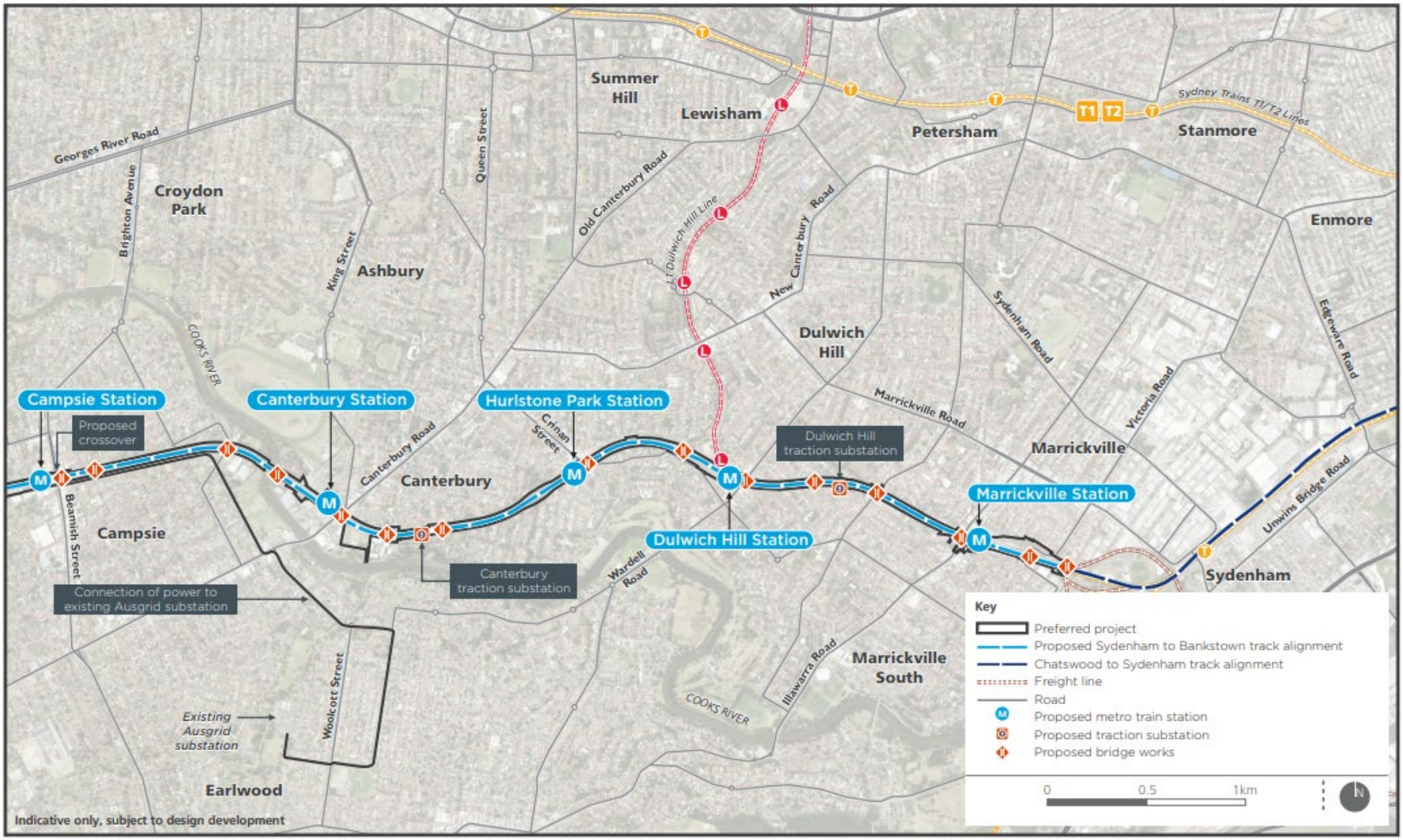

Summer Hill
Lewisham
Petersham
Stanmore
Sydney Trains T1/T2 Lines
Georges River Road
Brighton Avenue
Croydon Park
Queen Street
King Street
Ashbury
Old Canterbury Road
Dulwich Hill Line
New Canterbury Road
Enmore
Edgeware Road
Sydenham Road
Dulwich Hill
Marrickville Road
Victoria Road
Marrickville
Campsie Station
Proposed crossover
Canterbury Station
Hurlstone Park Station
Crinan Street
Canterbury Road
Canterbury
Dulwich Hill traction substation
Marrickville Station
Unwins Bridge Road
Sydenham
Campsie
Beamish Street
Dulwich Hill Station
Canterbury traction substation
Wardell Road
Connection of power to existing Ausgrid substation
Illawarra Road
Marrickville South
COOKS RIVER
Existing Ausgrid substation
Woolcott Street
Earlwood
Indicative only, subject to design development
Key
Preferred project
Proposed Sydenham to Bankstown track alignment
Chatswood to Sydenham track alignment
Freight line
Road
Proposed metro train station
Proposed traction substation
Proposed bridge works
0
0.5
1km
N

Figure 2b: Marrickville to Sydenham Site Layout (source: Sydney Metro City & Southwest - Sydenham to Bankstown -Planning Approval Consistency Assessment Form: Final track configuration works to complete the connection between Marrickville Station and Sydenham Station, October 2023.)

2.4 Program

Table 2 shows the project delivery phases:

Table 2 - Project Phases and Timing

Phase	Timing	Details	Notes
Phase 1	October 2020 – September 2024	Geotechnical investigations Service searching Bridge examination Conditions inspections Establishment of Vegetation Protection zones	Low impact/pre-construction Phase 1 completed
Phase 2	March 2021 – September 2024	Combined Service Route installation Segregation Fencing Clearing and Grubbing Sydney Trains signalling, communications and HV diversions Overhead Wire Works Removal of redundant ARTC infrastructure Canterbury Compound Set-up	Only low impact works to be conducted prior to March 2021
Phase 3	March 2021 – September 2024	Bridge works Retaining Wall construction Drainage Track works Civil works Bankstown Compound set-up at North Terrace Bankstown Metro Service Building works Bankstown southern (down) platform	
Phase 4	January 2023 – Late September 2024 (SWMC additional works elements commencing from mid 2024)	Bankstown northern (up) platform Segregation fence UTO (Security fencing) Bridge Works Boundary Fencing Station Bracket Mechanical Gap Fillers (MGF) and Platform Screen Doors (PSD) installation support works Sydenham junction final configuration work (track/ OHW/ fencing/ wayfinding etc) Some elements of the Bankstown Station and Precinct Works required to enable Sydney Trains to commence 4-Car turn back operations including demolition of parcel office, council amenity block, drainage and service relocation OHW footing removal and relocation Additional Asset Upgrades Infringement and track rectification Bridge upgrades renewals	August 2024 Passenger services replaced by dynamic testing Corridor works including Sydenham Station final configuration must be completed to facilitate dynamic testing

		Civil asset upgrade renewal Utility works Local area works including modification, reinstatement of public space, roads and pedestrian way Property works comprises permanent adjustments to existing private properties	

*Note that some work may occur outside standard construction hours for all phases depending on the scope of the works.

2.5 Construction Hours

JHLOR will undertake works in accordance with the LOR Environmental Protection Licence (EPL) 21147. No scheduled activities will occur outside the EPL 21147 premise boundary.

CoA-E19 states that the works are to be undertaken in accordance with the hours as follows:

- 7:00am to 6:00pm Mondays to Fridays, inclusive;
- 8:00am to 6:00pm Saturdays; and
- No work on Sundays or public holidays.

CoA E20 states that notwithstanding Conditions E19 and E24 Work may be undertaken outside the hours specified in the following circumstances:

(a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or
(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; or
(c) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or
(d) Work approved under an Out-of-Hours Work Protocol for Work not subject to an EPL as required by Condition E25; or
(e) construction that causes $L_{Aeq(15\ minute)}$ 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.

Where JHLOR must undertake works outside of standard construction hours, and the activities are not permitted under EPL 21147, JHLOR will follow the OOHW Protocol set out by Sydney Metro and seek a variation from the NSW EPA to the licence.

2.6 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 3: Indicative List of Plant and Equipment

Activity	Details	Timeframe	Plant
Geotechnical Investigations	Test pits, boreholes and other soil testing to inform design	October 2020 – Sept 2024	Drill rigs, excavators, trucks, concrete trucks (for stabilised sand backfill), compaction equipment, lighting towers, watercart, street sweeper, hand tools
Service Searching	Identifying service locations to inform design and construction	October 2020 – Sept 2024	Vacuum trucks, hand tools, lighting towers
Bridge Investigations	Inspecting bridges to inform design	October 2020 – Sept 2024	Elevated work platforms, hand tools , lighting towers
Conditions Assessments	Road and property dilapidation assessments as required Survey	October 2020 – Sept 2024	Survey equipment, hand tools
Vegetation Protection	Installation of fence panels, flagging, bollards or other barriers to limit access to protected vegetation	October 2020 – Sept 2024	Small truck, hand tools, mobile cranes
Canterbury Compound Set-up	Installation of compound at Close St Canterbury and demolition of existing Canterbury Bowling Club building	March – May 2026	Excavators, rollers, front end loader, crane, telehandler, EWP, hand tools, power tools, jack-hammer, concrete saw, trucks, water cart, street sweeper
Combined Service Route	Installation of new and relocation of existing combined service route and other services	October 2020 – Sept 2024	Excavators, mobile cranes, piling rig, concrete pump, concrete vibrator, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, underboring drilling rigs, generators, tipper trucks, non-destructive digging trucks.
Boundary and Segregation Fencing	Installation of boundary and segregation fencing	October 2020 – Sept 2024	Excavators, mobile cranes, piling rig, concrete truck, concrete pump, compaction equipment, hand tools, grinders, welding equipment, tipper trucks
Clear and Grub	Removal of any grass, weeds, shrubs, plants and trees to facilitate construction	March 2021 – Sept 2024	Excavators, EWP, Mulcher, chainsaw, trucks
Retaining Wall	Construction of a retaining wall within the rail corridor to stabilise the existing embankment	October 2020 – Sept 2024	Excavators, mobile cranes, piling rig, concrete pump, concrete vibrator, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, generators, tipper trucks, non-destructive digging trucks.
Drainage	New drainage for retaining wall	March 2021 – Sept 2024	Excavators, mobile cranes, concrete pump, concrete vibrator, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, telehandlers, generators
Civil Works	Demolition of redundant infrastructure, utility diversions and overhead wire works	January 2023 – Sept 2024	Excavators, mobile cranes, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, telehandlers, generators tipper trucks, non-destructive digging trucks.

Activity	Details	Timeframe	Plant
	Construction of the Bankstown Services Building Construction of the Bankstown Platform Structures Construction of new Sydney Trains and Sydney Metro station entrances at existing Bankstown Station Existing Bankstown Sydney Trains platform extension works Construction of a new cross-corridor plaza and surrounding urban landscaping		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.
Track Works	Modifications to existing track, hi-rail access pads and crossover installations,	March 2021 – Sept 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.
Bridge Works	Bridge remedial works, including installation of crash barriers and throw screens	March 2021 – Sept 2024	Excavators, mobile cranes, concrete pump, concrete vibrator, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, telehandlers, generators
Temporary site compounds	A compound within the carpark adjacent to North Terrace on the country (northern) side of Bankstown Station.	March 2021 – May 2026	Excavators, rollers, front end loader, crane, telehandler, EWP, hand tools, power tools, jack-hammer, concrete saw, trucks, water cart, street sweeper
	Ancillary facilities listed in Section 2.2 above.	July 2023 – Sept 2024	Mobile Caravan Office and laydown areas as required (in the process of investigation).
Demolition of Bankstown Parcel Office and Amenity Block	Heritage Listed: Heritage Listed Parcel Office and salvage of bricks and other elements for reuse in future design of the Bankstown Station Precinct and Non Heritage: demolition of Bankstown Station amenity block	July 2024-September 2024 for Bankstown Station works	Excavators, mobile cranes, light towers, EWPs, hand tools, grinders, generators, tipper trucks, non-destructive digging trucks, concrete saw, jack hammers, water carts, sweepers.

3.0 Distribution Policy

The master ‘controlled’ EMP document will be held within the Project’s document management system where it can be accessed by personnel as necessary.

All paper copies of this EMP will be considered as ‘uncontrolled’.

Table 4: CEMP Distribution

Copy No.	Issued To
01	Project Manager
02	Environmental Manager
03	Client Representative

The personnel to whom these copies have been issued will be sent amendments as they occur, and it is their responsibility to discard superseded pages and insert new pages.

3.1 Issue, Revision and Re-issue

The initial issue of this plan has been reviewed by the HSE Leader or Environmental Leader to ensure it meets the requirements of the current HSEMS and Environment Policy, contract, specifications and standards. The plan is approved for use on the project by the Project Leader. Evidence of initial review and approval is by signatures on the cover sheet.

In accordance with **CoA-C2**, the CEMP must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month before the commencement of construction.

Revisions of this CEMP may be required throughout the duration of the project to reflect changing circumstances or identified deficiencies.

Revisions may result from:

– Management Review
– Audit (either internal or by external parties)
– Client complaints or non-conformance reports
– Changes to the Company's HSEMS
– Additional / modification to scope of works.

The CEMP and Sub-plans would be subsequently reviewed and updated by the Environmental Manager as required. The CEMP would be reviewed at least on a six monthly basis and the sub-plans on a yearly basis throughout the duration of the construction period. Revisions shall be reviewed and approved by the Project Leader prior to issue. Updates to this plan are numbered consecutively and issued to holders of controlled copies.

In accordance with **CoA-A26 i)** the Independent ER will consider any minor amendments to be made to the CEMP, CEMP Sub-plans (as listed in CoA-C3 and the Staging Report) and monitoring programs that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP Sub-plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of the approval.

4.0 Health, Safety and Environmental 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 Company is currently certified (No. 4749) with SciQual.

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:

- Client requirements as detailed in the Contract
- LOR's environmental requirements, as detailed in the HSEMS
- ISO 14001:2015 Environmental Management Systems
- LOR's compliance obligations including mandatory and voluntary requirements.

This CEMP references relevant parts of the Company's 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

Severe Environmental Risks (SERs) | Environmental Primary Standards | Environmental System 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.

5.0 Policy

A Joint Venture (JV) Environmental Policy has been produced for the project. The Policy states the following;

LAING O'ROURKE

ENVIRONMENTAL & ENERGY POLICY

Effective April 2024

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.

Sir John Parker
Chairman

6.0 Objectives and Targets

High level objectives and targets for this project are based on the CEMF are listed in Table 5.

Table 5: CEMF High Level Objectives and Targets

Objective	Target	Reporting / Monitoring
Compliance with the Minister for Planning's Project Planning Approval and all permits and licences	Full compliance with the planning approval, all permits and licences	Compliance Tracking Program
Implementation of the performance outcomes, commitments and mitigation measures specified in the EIS and SPIR.	Full compliance with the performance outcomes, commitments and mitigation measures specified in the EIS and SPIR.	Compliance Tracking Program
Leadership proactively manage environmental performance	Leadership attendance rate at environmental inspections at 80% Actual vs. planned attendance at planned environmental awareness training at 80% (excludes tool boxes and inductions)	Inspection reports Training attendance sheets

Operational objectives and targets relating to significant environmental issues are contained in within the Operational Control Procedures (Appendix 4).

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. JHLOR's approach to implementing and achieving these requirements, strictly as they relate to the CEMP, is mapped within the Compliance Matrix in Appendix 14. 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.

7.0 Responsibilities and Authorities

Authorities and responsibilities for all positions are defined and communicated in Job Descriptions and project documentation. Reporting lines are shown in the Organisation Chart (refer to Appendix 10). Key responsibilities are indicated in the chart in Table 6.

Table 6: Key responsibilities and authorities

Position	Key Responsibilities and Authorities
Project Director (Project Leader)	• Reports to senior management within John Holland and Laing O'Rourke • 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 LORs' 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

Position	Key Responsibilities and Authorities
	• Take action to resolve environmental non-conformances 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 Manager)	• Reports to the Project Director • Support the Project Director in environmental matters as required • Oversight of environmental requirements for design and construction • Must complete corporate and project induction covering environmental responsibilities and LORs' 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 and incidents • Must complete corporate and project induction covering environmental responsibilities and LORs' environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager
Laing O'Rourke HSE Leader/John Holland Regional Environmental Manager	• Provide environmental support to the project team • Coordinate internal audits
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 LORs' 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 at the project level • Ensure all project personnel are aware of the CEMP and their responsibilities • Ensure relevant licences, approvals and permits identified in Appendix 7 are obtained. • Ensure compliance with all relevant statutes, regulations, rules, procedures, standards and policies • Liaise with the Principal's Environmental Representative and/or Superintendent on environmental issues, including the written notification of non-conformances (incidents, emergencies or deviations from the CEMP) • Ensure that all personnel on site receive appropriate environmental induction and training and are aware of their environmental responsibilities under relevant legislation and the contract • Report to the Project Director on the performance of the system and improvement opportunities • Provide support to the project team to enable them to meet their environmental commitments • Ensure that environmental records and files are collected and maintained

Position	Key Responsibilities and Authorities
	• Conduct regular compliance checking as required by this CEMP • Ensure that non-conformances 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 • 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 complete corporate and project induction covering environmental responsibilities and LORs' environmental management system. •
Communication and Stakeholder Relations Manager	• Leadership and management of the Communications, Stakeholder and Community Relations Team • Build and maintain effective working relationship with TfNSW'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 • Ensures the Community Communications Strategy and key activities are integrated into the project schedule • Attends the TfNSW 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 to respond to enquiries and complaints • 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 • 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

Position	Key Responsibilities and Authorities
Project Environmental Advisor (also referred to as Environmental Officer)	• Support the Environmental Manager in matters relating to environmental management • Must complete corporate and project induction covering environmental responsibilities and LORs' 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.
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
Sub-Contractors	• 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 • Must complete project induction covering environmental responsibilities and LORs' environmental management system. • Provide information to the Independent Environment Representative as requested and where appropriate, via the Project Environmental Manager
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, 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 LORs' 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: (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); • 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;

Position	Key Responsibilities and Authorities
	• 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 LORs' HSEMS.
Independent Certifier	• Assess and certify the Project for compliance, including environmental requirements
Utilities Coordination Manager	• 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 10 for training requirements for each category.
- Work must not commence until an ER has been approved by the Planning Secretary and engaged by the Proponent.
- The Planning Secretary's approval of an ER must be sought no later than one (1) month before the commencement of Work.
- The proposed ER must be a suitably qualified and experienced person who was not involved in the preparation of the Environmental Impact Statement (EIS), Submissions and Preferred Infrastructure Report (PIR) 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.

8.0 Legal and Compliance Obligations

Mandatory compliance obligations and requirements relevant to the project are summarised below. The Compliance Obligations Environmental System Requirement LOR's HSEMS outlines the process LOR uses 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 S2B 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 2.

Licences, permits and approvals are outlined in Appendix 7 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 outlined in Section 19 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).

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

8.1 Project Approval and Development Consent

A Conditions of Approval Compliance Tracking Register (CTR) will be established upon commencement to ensure the approval conditions are captured, addressed and closed out. The Register includes all conditions relevant to JHLOR's scope of work and will be updated as the works progress and reviewed on a quarterly basis to verify compliance with each condition. Further details are included in Section 16.2.

Non-compliances with the conditions will be documented and addressed through Impact's Assurance application.

This CEMP will be endorsed by the ER and then submitted to the Planning Secretary (by Sydney Metro) for approval no later than one month before the commencement of Construction.

It is noted that 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 month before Construction in accordance with **CoA-C6**. Construction must not commence until the CEMP and all Sub-plans have been approved by the Planning Secretary.

8.2 Additional Environmental Assessments

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

The assessment will include:

- A description of the existing surrounding environment.
- Details of the ancillary works and construction activities required to be carried out including the hours of works.
- An assessment of the environmental impacts of the works, including, but not necessarily limited to traffic, noise and vibration, air quality, soil and water, ecology and heritage.
- Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts.

- Identification of the timing for completion of the construction works, and how the sites would be reinstated (including any necessary rehabilitation)

8.3 Standards and Codes

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

Access to the latest Australian Standards is available via the through iGMS.

The environmental publications, standards, codes of practice and guidelines included in Table 7 are relevant to S2B and are referenced throughout this Plan. Other aspect specific guidelines are discussed in the relevant CEMP Sub-plans and other project management plans.

Table 7: Relevant Standards/Guidelines

Standard/Guideline	Relevant Authority
ISO 14001:2015 Environmental Management Systems – Requirements with Guidelines for use	Australian Standards
Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2001)	DPHI
Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009)	EPA
Managing Urban Stormwater: Soil and Construction (Landcom, 2008)	EPA/DPHI
AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting	Australian Standards
Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2008)	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	EPA
AS/ NZS 1940: 2017 - The Storage and Handling of Flammable and Combustible Liquids	Australian Standards

8.4 Environmental Protection Licence

This project includes the following Scheduled Activities:

– Railway Activities – Railway Infrastructure Construction

The S2B works will be delivered in accordance with the LOR EPL 21147. 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).

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

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

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

A copy of relevant Permits, Licences and Development Consents will be kept on site as controlled documents in the project's Document Management System.

8.5 Stakeholder Consultation and Approval of Plans

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.

CEMP Sub-plans are required to be prepared in consultation with the relevant government agencies as listed in **CoA C3**. The Sub-plans relevant to the S2B Works and associated stakeholder consultation are listed in Figure 1 and Table 8 below respectively.

Comments received on the CEMP Sub-plan will be considered and, where relevant, incorporated in the respective Sub-plan and recorded in Appendix 12 – Stakeholder Consultation.

Other Sub-plans required in accordance with the CEMF do not require consultation with any government agencies and will be reviewed by the Project Manager and Sydney Metro/ER. These plans include;

- Visual Amenity Management Plan

Environmental impacts and considerations will be further discussed in the S2B Sustainability Management Plan and Sub-plans. There are two Sustainability Management Plan Sub-plans that are required under the CEMF. These Sub-plans do not require consultation with any government agencies and will be reviewed by the Project Manager and Sydney Metro/ER. Refer to the Sustainability Management Plan for further information. The plans include;

- Carbon and Energy Management Plan
- Materials Management Plan
- Waste / Spoil / Recycling Management Sub-Plan (Captured as an ERAP in the CEMP in accordance with Staging Report S4.1.2)
- Workforce Development and Industry Participation Plan

In respect to changes to management plans and in accordance with CoA-A26 (i), the ER will "*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*."

Where changes to management plans are greater than minor in nature, these changes will be considered by the ER and DPHI. The changes may be subject to further government agency consultation as directed by the ER or DPHI.

All changes to the management plans will be undertaken in accordance with the requirements of the Planning Approval CSSI_8256, including any approved modification.

It is noted that due to the limited environmental risk associated with the following aspects, management of these aspects is considered appropriate and effective through ERAPS as outlined in Appendix 4:

- Biodiversity (Flora and Fauna Management)
- Groundwater
- Delivery and storage of chemicals
- Waste, Spoil & Recycling
- Air Quality

Table 8 Consultation Matrix

	Department of Planning, Housing and Infrastructure	Independent Environmental Representative	DPHI – DCCEEW	Heritage NSW	Inner West Council	City of Canterbury Bankstown Council	Transport for NSW	NRAR	Sydney Coordination Office	TTLG	EPA
CEMP	A	E									
Noise and Vibration Management Plan	A	E			C	C					
Noise and Vibration Monitoring Program	A	E			C	C					
Soil and Water Management Plan	A	E	C		C	C		C			C
Water Monitoring Program	A	E			C	C					C
Visual Amenity Management Plan		E									
Air Quality Management Plan	Not applicable as per Staging Report Rev 08										
Waste & Recycling, and Spoil Management Plans											
Heritage Management Plan	A	E		C	C	C					
Traffic Management Plan	S	S			C	C	C/S		C	C	
Community Communication Strategy	A	S									
Tree Report	S	S									
Business Management Plan		S									

Key: C = Consultation, A = Submit for Approval, S = Submission only, E = Endorsement required

9.0 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 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 3 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
- 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 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.

Yellow Risk – environmental impacts associated with the actions are generally constrained to the project site. There is a low to medium 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.

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 required 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 HSE 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 (E-T-8-1200).

An overview of this process is contained in Appendix 3.

9.1 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 3.

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 9.

Table 9: Applicable SERs

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.

10.0 Training, Awareness and Competence

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 employees will receive suitable environmental induction / training to ensure that they are aware of their responsibilities and are competent to carry out the work.

Environmental requirements will be explained to employees during site induction and on-going training via toolbox meetings, briefings, notifications and the like.

All employees (including subcontractors) will receive induction/ training in the following:

- Training purpose, objectives and key issues
- Due diligence, duty of care and responsibilities
- Site communication protocols
- Environmental Policy
- Site environmental objectives and targets
- Understanding individual authorities and responsibilities
- Site environmental rules
- Potential consequences of departure from rules
- Emergency procedure and response (e.g. Spill clean-up)
- 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).

– Responsibilities for implementing Hold Points
– Site specific issues and controls as detailed within the ERAPs and ECMs

Personnel performing tasks which can cause significant environmental impacts will be competent on the basis of appropriate education, training and / or experience.

All JHLOR operational staff on this project will be provided with training in the requirements and implementation of this CEMP and the HSEMS. CEMP training for new staff members shall be completed within 1 month of their commencement on the project.

Training in the operation and implementation of LOR HSEMS shall be provided for all operational staff.

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 10 below. The training shall be scheduled to reflect the requirements of the construction program.

Table 10: Proposed Training

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
Erosion and Sediment Control	• Standard erosion and sediment controls from the Landcom 'Blue Book' • Implementation of controls on site • Erosion and Sediment Control Plans	Operational personnel Management	Project Induction Project Toolbox Talks Monthly basis/ Incident response
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

Aspect	Training Inclusion	Personnel Required	Timing / Frequency/Means
Energy and Resource Usage	• Awareness training of energy and resource efficiency in the workplace including office/compound and site initiatives such as harvesting rainwater for dust suppression instead of potable mains water and use of bio-fuels	Operational personnel Management	Project Induction Project Toolbox Talks – Monthly basis
Community / Stakeholder Awareness	• Adjacent community and Project involvement • Relevant Project stakeholders • Accepted behaviours • Approved hours of work	Operational personnel Management	Project Induction Project Toolbox Talks Incident response / Possession works
Biodiversity	• Wildlife status of project and surrounds • Stop work and reporting protocols for injured wildlife, trees and vegetation • Protocol for tree/vegetation removal or trimming • Measures to stop feral animals coming to site	Operational personnel Management	Project Induction Project Toolbox Talks - Monthly basis /Incident response
Noise and Vibration	• Work hours • CNVMP/Construction Noise and Vibration Impact Statement (CNVIS) and OOHW Protocol • EPL requirements • POEO Act and other project requirements	Operational personnel Management	Project Induction Project Toolbox Talks – Incident response / Possession works
Air Quality	• Minimisation of dust and plant emissions	Operational personnel Management	Project Induction Project Toolbox Talks Incident response / Possession works ECM Briefing

All evidence of training is maintained as per the Workforce Development and Training Management Plan.

Environmental content is to be included in Toolbox talks and pre-start briefings. All training and toolbox meetings will be recorded.

11.0 Communication and Reporting

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.

11.1 Internal

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

11.2 External

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 Section 8.5
– 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.

12.0 System Documentation

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.

13.0 Document Control and Records

All project documentation, including environmental records, will be controlled in accordance with JHLOR Project requirements using TeamBinder and Asite – the Project's main Document Control System. Records will be retained on site for the duration of works. Additionally, records will be retained by JHLOR for a period of no less than 7 years in total. Records will be made available in a timely manner to Sydney Metro (or their representative) upon request.

Environmental records will be:

- Kept as objective evidence of compliance with environmental requirements; and
- Filed in the Document Control System, TeamBinder, and made available to all Project personnel, subcontractors, the Client and the ER.

Typical records may include:

- Site inspections, audits, monitoring, reviews or remedial actions.
- Documentation as required by performance conditions, approvals, licences and legislation.
- Modifications to site environmental documentation (e.g. CEMP, Sub-plans and procedures).
- Other records as required by the CEMF
- SM Incident and Non-Compliance form
- Environmental Training Records

Document control requirements associated with the LOR HSEMS shall be implemented in accordance with Records Management.

Individuals with responsibilities for work packages are responsible for the proper maintenance and upkeep of the workplace / project record management system to ensure:

– Files and records are kept up to date
– Records are not lost, damaged or inadvertently destroyed
– Records are maintained in accordance with the contractual, statutory requirements and timeframes
– Kept as objective evidence of compliance with environmental requirements
– Filed in accordance with Records Management.

14.0 Operational Control

14.1 General

Activities and business processes that have the potential to significantly affect our environmental performance must be identified, planned, documented and controls measures implemented to ensure the Company's policy, objectives and compliance obligations are met.

Within LOR HSEMS and with respect to the context of the business, operational controls are documented in Environmental Primary Standards. Environmental Primary Standards have been developed from aspects and impacts and compliance obligations. They provide the framework for eliminating or minimising risk of environmental harm as well as creating opportunity for innovation and enhancing environmental benefits.

At a project level, specific operational controls to manage environmental issues are defined in either or all of the following:

- ERAPs contained in Appendix 4
- Sub-plans
- Safe Work Method Statements (SWMS), Pre-start Checklists, Inspection and Test Plans / check sheets (as appropriate)
- Work instructions, as required (e.g. refuelling and servicing)

EWMS' and/or SWMS' for works or activities that represent a significant risk to the environment or non-compliance with statutory requirements will be reviewed by the Project's Environmental Team. Evidence of review by the project's environmental manager is documented on the SWMS Checklist Part B. Examples include demolition of the Bankstown Parcel Office.

Significant environmental issues as identified in the Risk and Opportunity Assessment in Appendix 3, will be controlled through ERAPs and issue specific Sub-plans as required.

Additional controls and criteria identified from the project's compliance obligations (conditions of approval, environmental mitigation measures and contract requirements) will be established and maintained where the absence of such could result in the environmental policy, objectives and targets not being met.

14.2 Project Boundary Change

The project boundary (referred to in the EIS as the 'Project Area'), contractor's activity boundary and worksite boundary document the areas in which 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.

The boundary is to be clearly delineated.

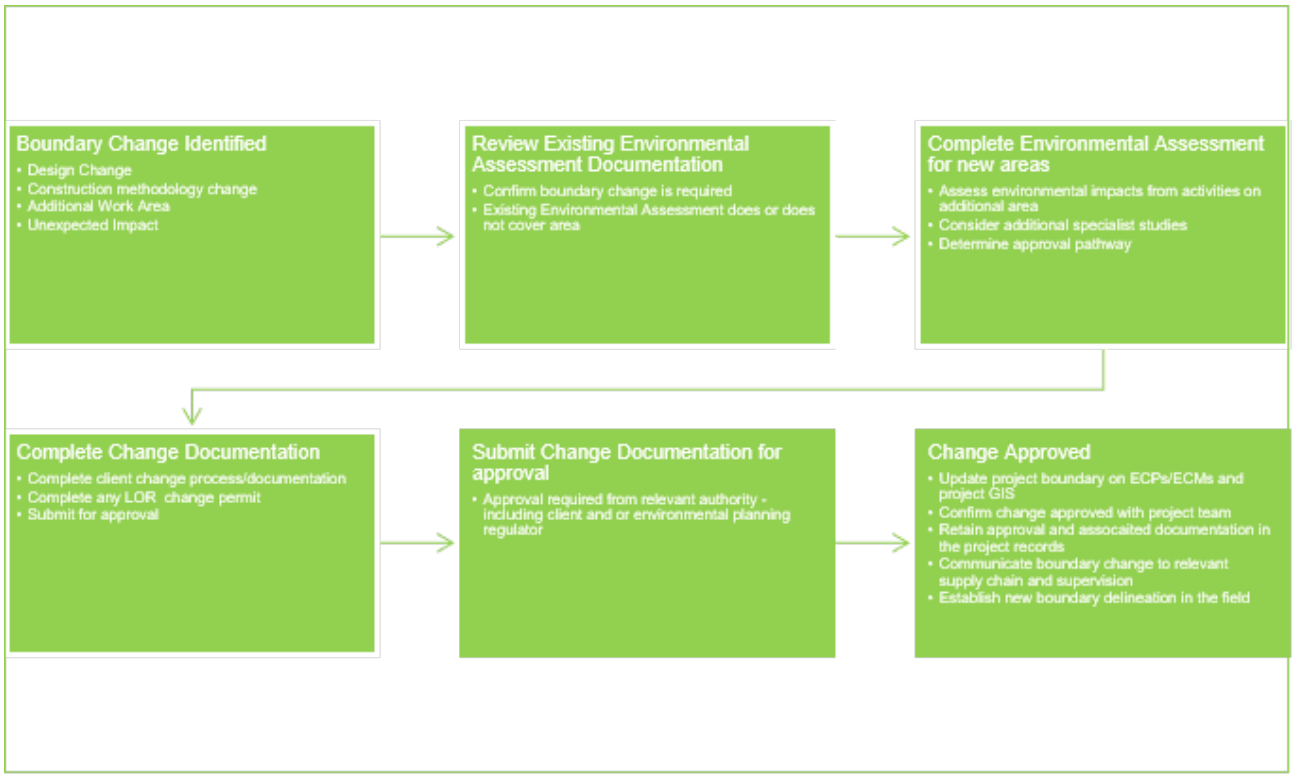
The requirement for work to occur outside of the project boundary may arise from design change requests, changes to methodology, altered access requirements, or the inclusion of additional work scope.

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.

For utilities and early works where there is limited boundary information available, the boundaries will be documented in consultation with the Client and regulatory stakeholders.

The process for the documentation of the approved project boundary and a process for working outside of the approved project boundary is outlined below.



Working outside of the approved project boundary is a hold point and must be formally released through the agreed project-specific processes before use of the additional area. Prior to working outside of the project boundary, the Project Leader must approve the change.

14.3 Hold Points

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

Correspondence or reports/submissions used as objective evidence for hold points are to be retained in the project document management system.

Table 11: Project Hold Points

Item	Process Held	Acceptance Criteria	Approval Authority
CEMP and Sub-plans	Site activities	Site specific CEMP and Sub-plans have been developed, reviewed and approved.	DPHI
Works that require a Project Approval Consistency Assessment	Specific site activities related to Consistency Assessment.	Consistency Assessment approval	Sydney Metro and ER
Works that require a ROL/ROP/Standing Plant Permits	Review of permits to confirm validity prior to the commencement of the works.	Confirmation that the relevant ROL/ROP/Standing Plant Permits are valid and that permits have met all other environmental or community notification requirements in addition to those listed in the CEMP or community notification strategy.	JHLOR Environment Manager (or delegate)
Dewatering	Dewatering / pumping water off the site.	Verification that the water quality criteria have been met.	JHLOR Environment Manager (or delegate)

Item	Process Held	Acceptance Criteria	Approval Authority
Sediment and erosion control measures	Construction activities involving ground disturbance.	Erosion and Sediment Control Plan (ESCP) has been developed, reviewed, approved and implemented	JHLOR Environment Manager (or delegate)
Vegetation removal	Commencement of site clearing or vegetation removal.	Pre-clearing inspections carried out and Permits issued. Clearing limits have been verified against the project approval environmental assessment, limits have been set-out and vegetation to be retained has been delineated and or protected. Tree Report has been completed and submitted to the DPHI	JHLOR Environment Manager (or delegate) and Ecologist
Construction Methodologies – direct delivery and subcontract works.	Construction process representing potential medium or high impact to the environment.	Construction methodology / EWMS/ SWMS / JSEA have been reviewed by the Site Environmental Representative and addresses the relevant requirements of the CEMP ERAPs.	JHLOR Environment Manager for EWMS/ERAPs (or delegate) Safety manager or Project Engineer for SWMS
Out of Hours Work (OOHW)	Works to be performed outside of approved construction hours	EPL 21147 Noise assessment completed and out of hours working criteria outlined in the contract, project approval or other statutory requirement are addressed.	Construction Manager (or delegate) and Environmental 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 offset 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 guidelines, transport licensing in place and landfill can lawfully receive the waste Section 143 notice or equivalent from waste receiver has been received	Construction Manager (or delegate)
Spoil Transport	Spoil import and removal	Verification that the spoil has been classified and the disposal location can lawfully receive the waste. Section 143 notice or equivalent from waste receiver has been received Imported material has classification reports or appropriate testing to demonstrate that it meets any EPA exemptions	Construction Manager (or delegate) and Environmental Manager (or delegate)
Encounter of Unexpected Heritage Item	Commencement of works in the affected area	A 'Stop Works' protocol is developed as part of CHMP and must be applied in the event of encountering unexpected/potential heritage items.	Construction Manager (or delegate) and Environmental Manager (or delegate)

Item	Process Held	Acceptance Criteria	Approval Authority
Ancillary Facilities	Establishment of new ancillary facilities not identified in the planning approval documents	Preparation of a review of environmental impacts and request for the Planning Secretary's approval as per CoA A17 Endorsement by the ER for ancillary facilities in accordance with CoA A17 and minor ancillary facilities in accordance with CoA A19	DPHI (outside rail corridor) ER
Pre-Construction Compliance Report (PCCR)	Construction Works	PCCR to be completed in accordance with CoA A32 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
Road Dilapidation Report	Use of local roads by local vehicles	Verification that the survey has been carried out and the report meets the requirement.	Construction Manager (or delegate)
Building Condition Survey and Report	Construction Works	Verification that the survey has been carried out and the report meets the requirement.	Construction Manager (or delegate)

Proceeding past a specified Hold Point without authorisation is a system non-conformance.

14.4 Environmental Control Map

The project Environmental Control Maps (ECMs) are prepared to assist in the planning and delivery of the project. It is specific to the site or work area and outlines the location of protection measures, monitoring requirements, conditions of approval and environmentally sensitive areas. It is the practical application of the proposed control measures.

The ECM is to be used in project inductions, work site set-up, reviewing ongoing environmental performance, included as information in tender documents to subcontractors where applicable and in support of ancillary environmental approvals.

It is noted that the S2BS2B ECM is a 'live' document and will be updated to reflect the relevant work stages as works progress. The ECM will be endorsed by the JHLOR Environment Manager. The ECM will be made available to the ER and Sydney Metro upon request. The ECM is to be endorsed before it is utilised. The CEMP Appendix 5 will not be updated with each revision of the ECM. The ECM within the CEMP Appendix 5 will be updated during the 6 monthly review of the plan.

The project ECM may include but not limited to:

- The worksite layout and boundary, including entry/exit points and internal roads and clearing limits
- Location of adjoining land-use and nearest noise sensitive receivers
- Location and type of sediment and erosion control measures, including size / capacity of detention basins and wheel wash facilities
- Location of site offices
- Location of spill containment and clean-up equipment
- Location of worksite waste management facilities
- Hours of work applicable to the worksite (including deliveries and any restrictions on high noise generating activities).
- Document control and approval details
- Location of environmentally sensitive areas (e.g. threatened species, critical habitat, contaminated areas, heritage zones, etc.)
- Vegetation and trees to be protected
- Location of known heritage (indigenous and non-indigenous) items
- Location of stormwater drainage and watercourses leading to / from the worksite
- Specific environmental management requirements from licenses, approvals or permit conditions
- Key environmental risk issues and the specific mitigation measures

The plan is in addition to any erosion and sediment control plans (ERSED) or other documentation that specify the location of environmental controls on site.

This CEMP will not be updated with every update of the ECM. In accordance with the CEMF S3.5 the ECM will be *endorsed by the Principal Contractors Environmental Manager or delegate*. The CEMP will be endorsed by the ER. Appendix 5 ECM will be updated with the latest version of the ECM as part of the CEMP 6 monthly review.

14.5 Design

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

The following environmental issues should be considered during the design phase:

- 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 JHLOR's sustainability agenda
- 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 would 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.

14.6 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 outlined in iGMS. 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 ITT Part E HSES Supply Chain Evaluation.
- 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 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.

14.7 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 JHLOR 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 4 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.

14.8 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

14.8.1 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:
– 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 JHLOR 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.

14.8.2 Planning for high environmental risk activities

Works site planning processes for high environmental risk activities is outlined in the System Requirement Environmental Planning which forms part of the LOR HSEMS. Details of specific activities considered high risk are provided in the system requirement. Additional activities may be identified in the project environmental risk assessment.

For all activities that have the potential to cause high-risk environmental impacts or are nominated as high-risk activities as determined by the project environment risk assessment activity specific method statements are to be developed and implemented.

The activity specific method statement to address environmental high-risk activities may be combined with existing construction planning documentation. It is to be developed in consultation with the environmental team, engineering team and relevant workplace supervisors.

Prior to the commencement of the activity, the site team shall be instructed on the key environmental risks and the required mitigation measures provided in the activity specific work method statement to address high risk activities.

This also applies to supply chain partners operating on the site. Supply chain partners involved in activities that represent a high risk to the environment are to address the above requirements in their activity methodologies and method statements. Supply chain partners involved in these activities are to complete an environmental risk assessment workshop prior to the commencement of the activity.

14.9 Plant and Equipment

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 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

A list of plant to be used on the Project is included within Section 2.6, Table 5. The list is indicative and may be refined as the project progresses.

Further project specific information on environmental controls is contained in Appendix 4.

15.0 Emergency Preparedness and Response

The types of environmental emergencies which could occur on this site are shown in Appendix 6.

The Client and relevant statutory and regulatory authorities (such as the EPA) will also be informed as necessary. 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 provided in Section 17 below.
- 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 Environmental Leader, HSE General Manager and Head of Legal immediately via phone and email.
- Inform the Client's Representative and ER as necessary and in accordance with contractual requirements (nominated in Section 17 below)
- 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 12 below:

Table 12 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

15.1 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. This is to be documented in a specific Shutdown Go Pack.

16.0 Monitoring and Measurement

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 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 Impact via the Assurance Application or retained in Fieldview as defined in the Project procedures. Further details on non-conformances are presented in Section 17.

Impact is a LOR software application which records, collates and distributes Health, Safety and Environmental (HSE) data. HSE Dashboards in Impact 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 Impact, a workplace visit is to be created and the associated actions generated.

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.

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:

- Construction Noise and Vibration Monitoring Program – included within Section 8 of the CNVMP;
- Water Quality Monitoring Program – included within Section 7 of the CSWMP

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) would be in attendance at any ER site inspections and would be responsible for actioning and responding to any identified corrective actions in accordance with the Corrective Action Request (CAR) Register timeframes outlined in Section 16.1 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.

Further monitoring and reporting activities against operational objectives and targets are listed in Section 7 of this Plan.

16.1 Monthly Environmental Reporting

JHLOR's approach to environmental reporting is outlined in Environmental System Requirement Communication and Reporting.

Monthly environmental reporting is to be completed through LOR's Digital Contract Review process. The Project Leader or Workplace Leader is responsible for ensuring environmental performance information is included in each months Digital 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

The project shall 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 undertaken 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.

16.1.1 Monthly Project 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 13 outlines the requirement and criteria to be revised and the relevant frequency.

Table 13: Monthly 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

16.1.2 Supply Chain Environmental Compliance Obligations Review

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

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.

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.

16.2 Compliance Reporting

In accordance with CoA A29 to A32, a Compliance Monitoring and Reporting Program must be developed and implemented during construction works (and for a minimum of one year following commencement of Operation or longer as determined by the Secretary based on the outcomes of Independent Audits, Environmental Representative Reports or Compliance Reviews) in order to monitor compliance with the terms of the project approval. Reporting will be undertaken in accordance with the requirements of the *City and Southwest – Sydenham to Bankstown Compliance Monitoring and Reporting Program Report* (Sydney Metro, 2019).

It is the responsibility of Sydney Metro to prepare the Compliance Monitoring and Reporting Program in accordance with the Conditions of Approval with input from JHLOR as required. The program will be endorsed by the ER and submitted to the Planning Secretary for information.

The Planning Secretary approved an update to the Compliance Monitoring and Reporting Program as of 8th July 2019. This update allowed for the Compliance Monitoring and Reporting Program to include the Sydenham to Bankstown Planning Approval, CoA A29 to A32.

DPHI will be notified of the dates of Construction and Operation in the pre-Construction and pre-Operational Reports. The reports will also include details of any review of, and minor amendments made to the CEMP (as required to be approved by the ER) during the reporting period. It is noted that Sydney Metro retains the responsibility for implementing CoA A29 to A32 under the Contract – JHLOR is to provide any information and participate in any activities as required to facilitate compliance reporting.

As part of the Compliance Monitoring and Reporting Program, Sydney Metro have developed a compliance matrix known as the Compliance Tracking Report (CTR) for the project, incorporating CoA and REMMs relevant to the S2B works. The CTR tracks issues and ensure compliance issues are addressed and closed out.

Within 5 Business Days of each Calendar Quarter Date, JHLOR will submit the CTR to the Principal's Representative to review in accordance with the Contract. The CTR 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 will be required to provide the 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.

17.0 Incidents, Non-Compliance, Complaints, Corrective and Preventative Action

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 8: Environmental incident investigation guidelines. An incident is defined as '*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'* **(CoA Table 1).**

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

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 Impact.

Incident Reporting & Investigation from the project sites is to be recorded in Impact, LORA's Online Incident Investigation Reporting Tool. Impact can be accessed from the LORA Intranet Home Page or remotely connected via the Internet where connection is possible and direct access to the LORA Intranet is not available. Incidents are to be logged in Impact within 48 hours of occurrence. For Class 1 and Class 2 incidents, an investigation must also be logged in Impact.

The Environmental Leader, HSE General Manager and Head of Legal shall be notified by telephone as soon as practicable after any Actual or Potential Class 1 or Class 2 Incidents with the potential to result in regulatory action.

Environmental Incidents are classified into three classes:

Class 3 Incidents

Where a Class 3 incident has occurred, the JHLOR Site Manager or immediate supervisor is to be informed. Class 3 incidents must be logged directly into Impact.

Actual or Potential Class 2 Incidents
Where an actual or potential Class 2 incident has occurred, Group Management is to be informed via the Project Leader. Class 2 incidents are to be investigated using a recognised investigation protocol.

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 1 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.

All environmental incidents and non-conformances must also be reported to the ER and Sydney Metro in accordance with Sydney Metro Environmental Incident Classification Procedure SMNW ES-PW-303/1.0, see Appendix 16. The corresponding Sydney Metro incident classifications are outlined in Table 14.

Table 14 Incident Classification

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

Where complaints are received at project sites or workplaces involving the media or where the Company's image is likely to be affected, they must be considered potential Class 2 incidents and notified accordingly.

All Class 1 & Class 2 incidents will be reported to the relevant State & Federal Authorities as required under relevant Acts & Regulations. Further details are provided in the section External Incident Reporting below.

Complaints will be reported to external authorities in accordance with specific licence/permit or approval requirements.

Refer to the Environmental Legislation page on iGMS for information on the applicable legislation.

Initial incident details must be provided in Impact for all actual and potential Class 1 and Class 2 incidents within 24 hours of the incident occurring. Notifications will be sent automatically to the relevant LOR leadership team members from Impact once the incident details have been entered.

17.1 Non-Conformances, Non-Compliances

In accordance with the LOR HSEMS, 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. It is also noted that within the *Sydney Metro Environmental Incident and Non-Compliance Reporting Procedure,* non-compliances are defined as; 'a breach of any Environmental Requirement originating from Planning Approvals, Environment Protection Licenses, lease agreements, and other requirements documented in environmental management plans.' This is a broader definition of the term non-compliances. Reporting to Sydney Metro, the ER and DPHI will occur in accordance with the Sydney Metro definition of 'non-compliance'.

Non-conformance/non-compliance to operational control procedures or to the HSEMS that cannot be rectified immediately must be recorded and addressed by raising a Non-conformance Report F0103 and logged into the Assurance application in Impact. Non-conformances/non-compliances can arise out of monitoring, inspections or audits.

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

The following environmental issues / non-conformances are to be included within Impact 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

17.2 Corrective Actions

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 15.

Table 15: 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.

17.3 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 process above.

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

JHLOR will provide notification of the incident to the Client's Representative as required and in accordance with the contract.

On this project and in accordance with the contract requirements, the Client is to be notified as detailed in Table 16.

Table 16: Client Notification Requirements

Notification Type	Contract Requirement
Initial verbal notification	Notify Sydney Metro/Sydney Metro Representative and ER regarding the incident as soon as possible. If the incident is a notifiable event, JHLOR will notify the EPA and relevant authorities immediately. JHLOR will inform Sydney Metro of this notification status. Secretary to be informed as soon as possible and at least within 24 hours.
Environmental Incident Report requirements	Prepare an incident / non-conformance report and submit to Sydney Metro and ER within 48 hours.

Class 1 & Class 2 reportable incidents shall be reviewed by the HSE Leader or Regional Environmental Manager, HSE 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 as outlined in Impact or in the Environmental Incident Report.

Specific procedures relating to heritage finds are outlined in the S2B Construction Heritage Management Plan (Doc S2BSWSSJ-JHL-WEC-EM-PLN-000013).

Note: where an actual or potential Class 1 Incident has occurred the HSE 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.

17.3.1 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 Regional HSE Manager.

- 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.

17.4 External Incident Notification

DPHI notification requirements are outlined in CoA A36-A37 and Appendix A of the Sydney Metro City and Southwest – Sydenham to Bankstown Instrument of Approval as tabulated below. Any incidents will be notified to the Secretary in accordance with these requirements.

Table 17 Incident Notification to DPHI

CoA/Requirement	Details
CoA-A36	The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and nature of the incident.
CoA-A37	Subsequent notification must be given, and reports submitted in accordance with the requirements set out in **Appendix A (of the CoA, as detailed below)**.
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: (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.

Note: The Conditions of Approval define an incident as follows “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.”

17.4.1 State Matters

The EPA must be notified immediately of all pollution incidents that cause or threaten material harm to the environment. JHLOR will enact the Pollution Incident Response Management Plan (PIRMP) if an incident causes or has the potential to cause material harm. The PIRMP is part of the overarching S2B Emergency Response Plan.

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 HSE Leader and the Head of Legal for both John Holland and Laing O'Rourke.

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 Project's Emergency Response 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
- 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:
- The Ministry of Health (via the local Public Health Unit - 02 9391 9000)
- SafeWork NSW (13 10 50)
- Inner West Council (where the incident has occurred with this LGA) – 02 9707 9000
- City of Canterbury Bankstown (where the incident has occurred with this LGA) - 02 9392 5000
- Fire and Rescue NSW on 000

Regardless of the actual or potential impact, these authorities must be notified under the amended legislation for all notifiable pollution incidents.

Further information in relation to the incident must be provided immediately if it becomes available after the initial notification.

Records of contact with and details of the information provided to external authorities must be maintained in the project records. The LOR form E-T-8-0161 Record of Conversation may be used to record contact with the regulatory authorities.

17.4.2 Commonwealth Matters

Environmental incidents relating to the Environmental Protection and Biodiversity Conservation Act 1999 must be notified to the Secretary within 7 days of the event.

These types of incidents include the death or injury to the following:

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

17.5 Client Complaints

All communications from the Client (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 Impact. Client complaints cannot be rated risk ranking 3.

Public complaints must be handled using the Form Environmental Incident Report and logged into Impact. 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)
- Review and improve existing environmental controls and job safety analyses/ work method statements

18.0 Environmental Management System Audit

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.

JHLOR 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 13.

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 Impact. Actions associated with audits shall also be logged in the Assurance application in Impact.

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. JHLOR will participate in these audits as required by the audit program.

19.0 Management Review

Project Management will check the status and adequacy of the CEMP to ensure that it meets current Client and Company requirements as well as relevant environmental standards following the process set out in Appendix 9.

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

- Client recommendations for changes (particularly following initial review)
- Changes to the Company's standard system
- Opportunities for improvement or deficiencies in the project system are identified.
- Following an audit of the system or the occurrence of significant incidents or non-conformances

The management review may be undertaken during the HSEMS re-launch process which is undertaken at 6 monthly intervals.

20.0 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 15 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.

21.0 Other Key Items of Note

21.1 Ancillary Facilities and Compound Set out

Ancillary facilities will be set-up to support the works where compliant with the requirements of CoA-A16 to CoA-A21 as applicable. 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. The use of an ancillary facility for Construction will not commence until the ancillary facility has been approved by the Planning Secretary or endorsed by the ER in accordance with CoA A17 or A19 as applicable. The locations of Ancillary Facilities are included in the ECM in Appendix 5.

JHLOR will consider the following when determining the location and layout of ancillary facilities and construction sites:
- To be located within the boundary of the CSSI
- 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 (e.g. during possession works only)
- Locations next to sensitive receptors will be avoided unless prior agreement in writing is received from the occupiers and boundary screening (to minimise visual, noise and air quality impacts) must be erected around the ancillary facility for the duration of the CSSI (unless agreed otherwise)
- Screening (such as the use of site buildings to shield activities from receivers) must be implemented to minimise visual, noise and air quality impacts on adjacent sensitive receptors.
- 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.
- The location of any ancillary facility or site compound will not worsen the existing flooding characteristics of the area
- There will be no heritage impacts from the ancillary facility (including archaeological areas)
- There will be no impacts on threatened species from ancillary facilities.

Minor ancillary facilities include compounds limited to lunch sheds, office sheds and portable toilet facilities. The ER will assess the following when determining if a facility is considered a minor ancillary facility:
- The facility will be located within the Construction boundary
- The facility will have limited or minor amenity impacts to surrounding residences and businesses (including noise, traffic, dust, odour and visual amenity/light spill)
- The facility will have minor environmental impact in respect to waste management and flooding
- There will be no impacts to biodiversity, soil and water or heritage.

Where an Ancillary Facility or Minor Ancillary Facility is required, JHLOR will prepare an "Ancillary Facility Checklist" for ER review and approval. 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.

Note, the main site compound will be located within an archaeological management zone in Canterbury Bowls Club. The compound would utilise the bowling greens areas for site sheds and laydown areas. The Canterbury Bowls Club is an agreed worksite/compound and not an ancillary facility under CoA-A16 to CoA-A21. Remains of buildings associated with the Sugar Mill may be present within the area. The test methodology within the Archaeological Method Statement is to be implemented.
It is also noted that a compound will be established within the carpark on the country (northern) side of Bankstown station within the North Terrace carpark. Another compound will be established at the Metro Service building site. These areas are approved for Construction Compounds within the Sydney Metro City and Southwest Sydenham to Bankstown Submissions and Preferred Infrastructure Report.

JHLOR has established Minor Ancillary Facilities at the locations listed in Section 2.2 above. Hurlstone Park Station MSB, Belmore Station MSB and Wiley Park Station MSB which are subject to further approvals under CoA-A19.

21.2 Trees and Vegetation

A number of trees, as defined by the Planning Approval, are located within the design footprint of the S2B works. These trees will be subject to assessment under a Tree Report under **CoA-E5** and will be trimmed or removed accordingly.

In addition to the trees to be removed, S2B 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 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 2:1 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.

Also, in accordance with 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.

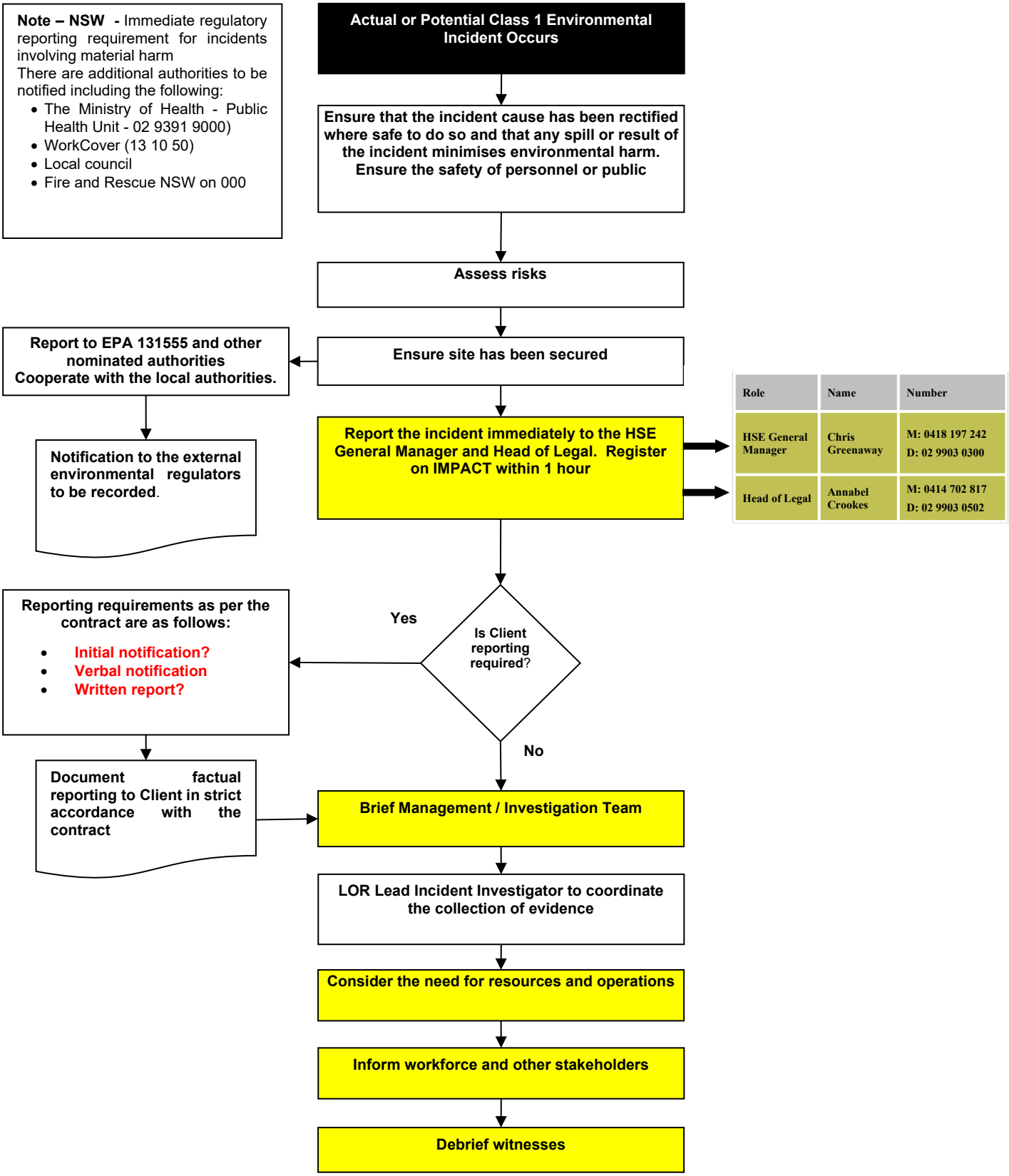
21.3 Site Restoration

JHLOR will consult 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:

- JHLOR 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.

APPENDIX 1 – Class 1 Incident Management Flow Chart



APPENDIX 2 – Legal and Other Requirements

The relevant legal and other requirements are shown in the table below. Access to this legislation is available on iGATE.

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Environmental Planning Legislation		
Environmental Planning and Assessment Act 1979 (EP&A Act)	This Act establishes a system of environmental planning and assessment of development proposals for the State.	**High Relevance** The development consent conditions and obligations are incorporated into the specification documents JHLOR's CEMP.
Local Government Act 1993 ***Local Government (General) Regulation 2005***	The Local Government Act and Local Government (General) Regulation provide a legal framework for an environmentally responsible system of Local Government including the responsibility to administer various regulatory systems (e.g. Environmental Planning, Development Consents and Conditions of Approval).	**No Relevance** The project is approved under Part 5.1 of the EP&A Act.
Roads Act 1993 ***Roads Regulation 2018***	This Act and 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.
Soil Conservation Act 1938	This Act makes provision for the conservation of soil resources, farm water resources and the mitigation of erosion. The Act is binding on the Crown, however the Crown is not liable for prosecution. The Act provides for notification in the government gazette catchments where erosion is liable to cause degradation of rivers; lakes etc. (i.e. protected land).	**No Relevance** This Act has low relevance as the S2B site is not located within "protected land". Further, such notification has not been given to the owner of the land.
Environment Protection and Biodiversity Conservation Act 1999 (Cwth)	The main purpose of this Act is to provide for the protection of the environment especially those aspects that are of national environmental importance and to promote ecological sustainable development. The Act binds the Crown. Do not take, use, keep or interfere with "nationally significant" cultural and natural resources, protected wildlife and protected plants without Approval.	**No Relevance** This Act is of little relevance to S2B as it has been determined not to trigger the provisions of the Act.

Land and Environment Court Act 1979	The Land and Environment Court is constituted under this Act. The jurisdiction of the Court is divided into numerous classes. The relevant classes for the project covers matter such as the prosecution for offences under various environmental legislation and to appeal against conditions of approvals, permits or orders.	**Low Relevance** The relevance of this Act would only apply to work under the contract if JHLOR were prosecuted for an Environmental Offence.
Greenhouse Gas (GHG) Emissions ***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** Laing O'Rourke Australia and John Holland are registered entities under this Act. As such, where Laing O'Rourke or John Holland 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.
Contaminated Land Legislation		
Contaminated Land Management Act 1997	This Act provides for a process to investigate and remediate land that has been contaminated and presents a significant risk of harm to human health. Section 60 of the Act is a "Duty to Report Contamination". This duty applies to owners of land and persons who become aware their activities have contaminated the land.	**Medium Relevance** The relevance of this Act to the contractor will be in the event suspected or potentially contaminated ground is found during construction activities.
Fire Control Legislation		
Rural Fires Act 1997	This Act is intended to prevent, mitigate and suppress bush and other fires. It places a duty on JHLOR 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 S2B project site and surrounding areas are within bushfire prone determined land.
Hazardous Substances Legislation		
Environmentally Hazardous Chemicals Act 1985	This Act prohibits the manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of an environmental hazardous substance or waste (prescribed activity) except under the provisions of a chemical control or a licence. The EPA is required to prepare inventories of environmentally hazardous substances and declared chemical wastes.	**Low Relevance** It is not anticipated any environmentally hazardous substances or declared chemical waste will be used or stored on the site. The Act therefore has little relevance to the site other than being aware of the

		existence of registers of declared chemical wastes and environmentally hazardous substances.
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, PPE, 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. JHLOR will need to review and ensure Dangerous Goods requirements are addressed where transported by its vehicles, plant and equipment.
Other Legislation		
Australian Heritage Council (Consequential & Transitional Provisions) Act 2003 ***Australian Heritage Council Act 2003 (Cwth)***	The Australian Heritage Council (Consequential and Transitional Provisions) Act 2003 repealed the Australian Heritage Commission Act 1975. The Australian Heritage Council Act 2003 establishes the Australian Heritage Council. The Council is required to identify places to be included in the National Estate and to maintain a Register of the National Estate of places.	**No Relevance** The site is not on Register of the National Estate of places.
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cwth)	This Act provides for the preservation and protection from injury or desecration to areas and objects of particular significance to Aboriginals. Areas and objects can be protected by Ministerial Declaration and it is then and offence to contravene such a declaration.	**No Relevance** No areas or objects within the works site have been identified as being subject to such a declaration and this Act is of little relevance to the project.
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.
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 S2B site to date.

Coastal Protection Act 1979	This Act requires public authorities to notify the Coastal Council of NSW of any information, proposed activity or work that in the opinion of the public authority is relevant to the exercise of the function of the Coastal Council. It further empowers the Minister for the Department of Commerce to require public authorities to obtain consent prior to carrying out development in the coastal zone or giving consent to a person to occupy or carry out development in the coastal zone.	**No Relevance** The project is not located in areas associated with this act.
Dams Safety Act 1978	This Act constitutes the Dams Safety Committee and confers and imposes on the Committee functions relating to the safety of certain prescribed dams.	**No Relevance** It is unlikely any action in respect to this project will endanger the safety of any prescribed dam
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. Sydney Metro projects assessed under Part 5.1 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.	**Medium Relevance** Works will be undertaken in the rail corridor adjacent to State Heritage Registered Marrickville Railway Station Group, Belmore and Lakemba Railway Station Group and Canterbury Railway Station Group. Sydney Metro projects assessed under Part 5.1 of the EP&A Act are exempt from approvals required under Part 4 and permits required under section 139. It is noted that an Archaeological Assessment and Research Design Report (AARD) undertaken as part of the SPIR has identified archaeological investigation areas within and surrounding the Marrickville Railway Station Group, Canterbury Railway Station Group, Belmore and Lakemba Railway Station Group Railway Station Group. Appropriate measures are to be implemented in accordance with the AARD. The Canterbury Compound area is a known archaeological management zone. Remains of buildings associated with the Sugar Mill may be

		present within the area. The test methodology within the Archaeological Method Statement is to be implemented.
Marine Pollution Act 2012	This Act creates offences for discharges of oil, oily mixtures and noxious liquid substances from ships into State waters.	**No Relevance** The site is located adjacent to state waters and may involve the use of applicable vessels.
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 aboriginal artefacts have been identified within the S2B construction area. Sydney Metro projects assessed under Part 5.1 of the EP&A Act are exempt from obtaining an Aboriginal Heritage Impact Permit required under section 90.
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.
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.	**High Relevance** The 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. The S2B project will be completed under the Laing O'Rourke EPL 21147
Plantations and Re-afforestation Act 1999	This Act is intended to facilitate the reforestation of land and development of timber plantations. It provides codified environmental standards together with a streamlined integrated scheme for the establishment and management and harvesting of timber and other forest plantation products.	**No Relevance** The location of work under this contract is not located within or adjacent to reforested or plantation forest land.

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 JHLOR.
Sydney Water Act 1994	This Act 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 wastewater within its area of operations.	**High Relevance** Coordination will be required with Sydney Water during the works
Sydney Water Catchment Management Act 1999	This Act establishes the Sydney Catchment Authority as a statutory corporation representing the Crown. The role of the Sydney Catchment Authority is to manage and protect the catchment areas and catchment infrastructure works, be a bulk water supplier and to regulate activities within or affecting the catchment areas	**Low Relevance** This project will not impact on areas regulated by the Sydney Catchment Authority.
Water Management Act 2000 ***Water Management (General) Regulation 2004***	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. 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.	**No Relevance** Sydney Metro projects assessed under Part 5.1 of the EP&A Act are exempt from obtaining water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91
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.
Wilderness Act 1987	An Act to provide for the permanent protection of and proper management of Wilderness Areas and to promote the education of the public in the appreciation, protection and management of wilderness. The Act and associated Regulations provides a mechanism for the identification and declaration of Wilderness areas.	**No Relevance** This project is not within or immediately adjacent to a declared Wilderness area. This Act has little or no relevance to the project.
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	**High Relevance** The relevance of the Act to this project is to implement the strategies by adopting the hierarchy of

	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.	avoidance; avoidance of unnecessary resource consumption; resource recovery (including reuse, reprocessing, recycling and energy recovery), disposal (as a last resort).

APPENDIX 3 – Environmental Risk Assessment

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

Risk Assessment Rankings: >17 = Extreme 10 - 16 = High 5 - 9 = Medium 1 - 4 = Low

Environmental issues which have an initial risk ranking of Medium or High will require the development and implementation of Environmental Risk Action Plans. Issues which have an initial Extreme risk will require the development and implementation of an issue specific Sub-plan. The risks must be reassessed following the consideration of control measures. An owner for the implementation of the management measures must be nominated. Issues or activities that represent an Extreme risk after the application of control measures are not to be undertaken.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
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.	2	4	8	▪ Review the project EIS, modification and statutory documentation for requirements relevant to the S2B works. 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, permits. ▪ Pre-construction Compliance Report	1	4	4	Maintain Compliance Risk Matrix Undertake environmental audits as per Section 14 of this plan

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Noise									
Noise from general construction activities resulting in impact to residents.	Disturbance to residents or neighbouring businesses. Potential for complaints.	4	2	8	• Control measures as per S2B CNVMP and CNVIS are to be implemented. • Respond to community enquiries and complaints in accordance with Sydney Metro requirements and Community & Stakeholder Manager (Sydney Metro), control measures as per Community Consultation Strategy (CCS) are to be implemented. 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.	3	2	6	Noise performance will be continually monitored as per the requirements of the Construction Noise and Vibration Management Plan. Where high impact noise is required, it will be restricted to the conditions of EPL 21147 with respite periods implemented.

					• Noise efficient equipment to be used on site.				

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Noise during works required to be undertaken out of standard construction hours.	Disturbance to residents or neighbouring businesses with potential for complaints.	4	2	8	• Implement noise mitigation strategies for out of standard hours work. • Monitor noise for compliance to project goals. • Control Measures as per the CNVMP and CNVIS are to be implemented.	3	2	6	Noise performance will be continually monitored as per the requirements of the Construction Noise and Vibration Management Plan. 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 impact piling, 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 result of vibration nuisance	3	2	6	• Control Measures as per the CNVMP and CNVIS 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. • Review Stage 3 HIAs for any relevant works within the station curtilage areas (both S170 and SHR). Especially for demolition works such as the Parcel Office in Bankstown • Assess and mitigate vibration impacts as part of any EWMS and Demolition Management Plan	2	2	4	Standard and specific mitigation measures for sensitive receptors around the S2B works will be applied as per the Construction Nosie and Vibration Management Plan and the Construction Noise and Vibration Impact Statement.

Water Quality, Erosion & Sedimentation									
Sediment laden runoff from construction works leaving site.	Degradation of local watercourses. Increased turbidity in local water ways resulting in impact on aquatic life. Fines for sediment escaping site. Materials washed away during flood events at the following locations:	2	3	6	• Control Measures as per Soil and Water Management Plan and any Erosion and Sediment Control Plan to be implemented. • Install stormwater drainage protection within the project area. • Ensure measures are inspected and maintained as the works progress and also prior to and post	1	3	3	Undertake regular inspections (including pre-rainfall inspections) of work areas pre, during and after works to ensure controls are in good condition

	• 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				rainfall events forecasted >20mm, in 24 hours. • Provide training and awareness on the need to prevent pollution. • Relevant people to undertake Erosion and Sediment Control training. • 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 storms				
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. Impact of floodwaters 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	2	3	6	• Develop Environmental Control Maps to show stockpile areas. • Manage Stockpiles in accordance with SWMP and ESCP • 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	1	3	3	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.

	• 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).	2	3	6	• Environmental Manager (or delegate) to approve all water discharges from site. • Induction and toolbox talks • Toolbox training on site procedures for water discharge and the Sydney Metro dewatering procedure • Educate site staff on licence conditions and consequences of prosecution	1	3	3	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Works with the potential to intercept Ground water table	Ground water entering excavations Without appropriate safeguards onsite runoff could lead to ground water contamination	2	3	6	• Induction and toolbox talks including ERSED controls • Toolbox training on site procedures for water discharge • Educate site staff on licence conditions, potential for groundwater drawdown and consequences of prosecution • Environmental Manager (or delegate) to approve all water discharges from site.	1	3	3	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Groundwater	Ground water entering excavations Without appropriate safeguards onsite runoff could lead to ground water contamination	2	2	4	• Induction and toolbox talks • Toolbox training on site procedures for water discharge • Educate site staff on licence conditions and consequences of prosecution • Groundwater Monitoring and runoff	1	2	2	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
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	2	3	6	• Any site offices, ancillary facilities or hazardous goods storage containers would 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	1	3	3	Monitor weather forecasts
Waste									
Waste disposal during construction.	Incorrect disposal of waste, further costs incurred for classifications and disposal, fines may be issued.	3	2	6	• Implement the controls within the Waste and Spoil ERAP. • Identify opportunities to incorporate recovered materials into the permanent works.	2	2	4	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

					• Provide facilities on site for source separation and recycling. • Ensure accurate waste records are retained. • Removal of wastes from the site would only be undertaken by a licensed contractor as required by the POEO Act and with appropriate approvals, if required, for contaminated materials, etc. • All material that requires off-site disposal to be appropriately tested and classified against the Waste Classification Guidelines (NSW EPA, 2014) including Resource Recovery Exemptions.				Monitor and ensure reporting of all movements of waste from the worksite are recorded in the Waste and Spoil Register. Maintain copies of all disposal dockets and consignment authorisations

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Earthworks spoil disposal.	Incorrect classification of waste (spoil) resulting in incorrect / illegal disposal/re-use. Contamination of soil/water Failure to beneficially re-use waste materials	3	2	6	• Inductions, toolbox talks and training on recycling facilities and waste segregation practices. • Separation of waste on site. • Tracking of disposal processes. • All contamination hotspots would be clearly marked in the field (where possible). Hot spots will be shown within contamination mapping and will be included in the Permit to Disturb process. • All material to be recovered off-site to be appropriately tested and	2	2	4	Regular inspections of work areas Monitor and ensure reporting of all movements of waste form the worksite

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					classified and sent to a 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.	3	2	6	• 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.	1	2	2	Regular inspections of concrete washout areas and controls Regular removal of material from concrete washout areas prior to rain events
Contamination									
Management of contaminated or untreated materials	Non-compliant material and contaminated water entering surrounding waterways. Decrease in health of nearby ecosystems. North Terrace carpark at Bankstown Station is a	3	3	9	• Implement contamination management procedures and protocols from within CSWMP. • Identify any contamination hotspots and incorporate procedures for these locations into construction documentation. Develop and	2	3	6	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

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
	known petrol station site and has potential for contamination.				implement unexpected finds procedures. • Induct personnel on unexpected finds procedure. • Monitor piling spoil for unexpected contamination in accordance with the Unexpected Finds Procedure and separate as required. • Minimise excavation in the North Terrace carpark. Stockpile separately for testing and disposal to a licenced landfill.				
Potential for discovery of unexpected contaminated material 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.	2	3	6	• If contaminated soil is encountered, all works are to stop in the vicinity of the find and investigations commence. • 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.	1	3	3	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 Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Encountering asbestos / contaminated material on site.	Inappropriate storage, transfer or disposal of materials causing further contamination.	3	3	9	• Inspections of excavated and filled surfaces would be made during construction to determine the presence of visible asbestos. • Conduct further site investigations to determine the presence and extent of contamination prior to construction works commencing • Contaminated soils would not be stockpiled on the structural fill layer or formation layers to avoid cross contamination. • Implementation of the Unexpected Finds Procedure • Monitor piling spoil for unexpected contamination in accordance with the Unexpected Finds Procedure and separate as required.	2	3	6	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Complete regular toolbox talks on how to manage unexpected finds.
Hazardous Chemicals and Dangerous Goods (Hazardous Substances)									
Inappropriate 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.	3	3	9	• Induction, toolbox talks and training on appropriate handling and storage of liquids. • All storm water drains should be identified prior to works and protection installed. • Storage areas to be away from identified sensitive areas and appropriately bunded.	1	3	3	Regular inspections of storage areas. Monitoring of weather predictions

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
	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 • Existing rail corridor located east of Canterbury Station • Existing rail corridor 100m west of Canterbury Station • Existing rail corridor 100m west of Campsie Station				• SDS approved prior to bringing hazardous substances on site including risk assessment. • Plans showing storage locations and associated controls e.g. spill kits, etc. (Environmental Control Maps). • Training in use of spill kits. • Contingency plans would 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. • 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 would be located on piers or stilts above the known 1% AEP flood level.				

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Fuel contaminated runoff from construction works leaving site	Fuel contaminated runoff entering stormwater or waterways (i.e. polluting - not compliant with discharge criteria).	3	3	9	• All storm water drains should 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 project conditions and consequences of prosecution.	1	3	3	Regular inspections of works site to ensure all controls are in good health and working.
Biodiversity									
Vegetation trimming / clearing required outside approved work area.	Unauthorised works / removal of vegetation outside defined work area, possibility of removing threatened species, fines incurred.	2	3	6	• Implement the controls within ERAP 1 - Biodiversity • Induction and toolbox training on clearance zones and required protection measures • If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken, and approval sought from Sydney Metro prior to trimming or removal. • Update of relevant tree report • Inspections during clearing activities. • Fencing in place/ clear marking of trees to be retained and cleared / demarcation areas / plans showing clearing areas.	1	3	3	Implement Vegetation Removal Permit System. Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					• Preclearing checklist to be completed before any clearing of vegetation.				
Clearing and grubbing of vegetation within work site or as part of landscaping works.	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. Introduction of pest species	3	2	6	• Tree Report to be prepared and submitted in accordance with the MCoA. • Inductions and toolbox training on erosion and sediment controls. • Where possible works to be staged so environmental controls can be implemented after clearance works. • Avoid importing materials and earth moving plant from Queensland and northern NSW. 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.	2	2	4	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
					• If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken, and approval sought from Sydney Metro prior to trimming or removal. A Tree Report is to be prepared for each tree to be removed or pruned. The Tree				

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					Report is to be submitted to DPHI before the removal or trimming of trees. • Consider impacts to visual amenity relating to vegetation removal. • Approved ESCPs in place prior to starting works.				
					• Where applicable, mature trees and other native vegetation to be retained would be clearly delineated (and protected with fencing or other methods approved by and Arborist), with all construction activities excluded from these areas. • Preclearing checklist to be completed before any clearing of vegetation.				
Weeds	Weeds are not contained or are spread on or off-site	3	3	9	• Regular inspections of worksite for weeds • Segregate weed impacted waste material and dispose of to a licenced facility • Inspect plant and machinery before entering and leaving worksite to ensure no dirt remains as it may cause weeds to spread. • Educate work force on common weeds within Bankstown rail corridor.	1	3	3	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Excavation near protected trees/vegetation	Damage to roots/root structures	3	3	9	• Site inspections to include review of protected tree/vegetation species during excavation works as well demarcation of TEC/Protected vegetation through the use of tape/fencing or other • Toolbox talks/training to include details of nearby protected species • Prior to commencing, trenching or excavation to be investigated if in the vicinity of protected species. Where possible excavation works will be modified to avoid damage to roots	2	2	4	Undertake regular inspections during excavation or trenching works.
Air Quality									
General construction works; site establishment, excavations, piling	Dust activity near residential and commercial premises, complaints received.	3	2	6	• Implement the controls within the Air Quality ERAP (#4) • 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. • ESCPs approved before works commence. Controls are then reviewed for maintenance.	2	2	4	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Exhaust from plant and equipment.	Emissions resulting in air pollution.	3	2	6	• Inductions and toolbox training on Dust and Air Quality Management. • Well maintained plant/ equipment and pre-start checks and servicing. • Non-complaint vehicles removed from site / repaired.	2	2	4	Review plant check list prior to operating on site. Undertake verification checks a required.
Abrasive Blasting Activities	Uncontrolled/uncontained airborne fines from abrasive blasting process resulting in air pollution	3	3	9	• Inductions and toolbox training on Dust and Air Quality Management. • Encapsulation on abrasive blasting activities • Monitoring and inspections of encapsulation	2	2	4	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Heritage									
Unexpected heritage items encountered.	Work delays, additional studies, approvals required, damage to heritage item.	3	3	9	• Implement the controls within the CHCP • 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 Environment Manager contacted. • Clearly highlight no-go zones on the ECM and communicate requirements to construction personnel during pre-start briefs, inductions and toolbox talks.	2	3	6	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Provide frequent toolbox talks on Unexpected Finds Procedure

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Impact to Heritage Structures	Damage to station fabric and other heritage items by works and construction traffic. Visual impacts.	3	3	9	• 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 CNVMP and CNVIS. • Undertake vibration compliance monitoring as per the CNVMP.	2	3	6	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 Where it is deemed necessary, training on specific heritage items could be used as an alternative to general training for heritage management protocols
					• Clearly highlight no-go zones on the ECM and communicate requirements to construction personnel during pre-start briefs, inductions and toolbox talks. • Demarcation of worksites and communicate it clearly with all construction personnel.				

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	

					• The method for the demolition of existing buildings and / or structures, specifically Bankstown Station Parcel Office and Bankstown Station Amenity Block would 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 Bankstown Station Parcel Office and Bankstown Station Amenity Block.
					• 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				

Acid Sulfate Soils									

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Disturbance of Potential Acid Sulfate soils and Actual Acid Sulfate Soils during excavations.	Mobilisation of metals within runoff to levels toxic to natural systems. Release of acidic runoff.	2	2	4	• Assess risk for acid Sulfate soils, and if the risk is determined to be high then implement the Acid Sulfate Soils Procedure. • Awareness training in the identification and management of ASS. • Provide containment and treatment facility on site. • Ensure PASS material is left under the water table, disposed off-site or appropriately treated in a bunded area with sump.	1	2	2	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Salinity									
	Mobilisation of saline groundwater and soils during construction to sensitive ecosystems	2	2	4	• Management measures in accordance with the *Site Investigations for Urban Salinity* (DLWC, 2002) will be incorporated into the works • Minimise water infiltration • Landscaping using native plants • Retention (where practicable) of deep-rooted vegetation • Inclusion of saline and dodic soils within ERSED Plans	1	2	2	▪ S2B works within saline areas considered to have limited impacts on soil with bulk earthworks around retaining wall 21 considered to be outside of the saline areas. ▪ Pile spoil to be stockpiled and disposed to a licenced waste facility
Flora and Fauna									
Loss, damage or injury to endangered or threatened species.	Removal, death, damage or injury to endangered or	2	4	8	• Implement the controls within ERAP 1 – Biodiversity.	1	4	4	Implement Vegetation Removal Permit System.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
	threatened species by plant and equipment				• All personnel attending site will be advised of controls and management for TEC/ Protected vegetation during the onsite induction. • A Toolbox talk 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 would be undertaken in accordance with the Vegetation Removal Permit System.				Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
					• If threatened flora or fauna species are identified on site, work in the vicinity of these species would stop immediately. spotter/catcher/botanist would be engaged to survey the site and advise on species management.				
Traffic									
Loss of on-streetcar 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.	3	2	6	• Community notifications in accordance with Sydney Metro Community Consultation Strategy.	2	2	4	Complete regular toolbox talks on how to minimise impacts in relation to traffic.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					• Site vehicles shall be parked within the rail corridor and not affect public parking area where possible • Develop Traffic Management Plan including Traffic control procedures				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 resulting in complaints.	3	2	6	• 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 • Scheduled road movements shall be minimised where possible • Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services.	2	2	4	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets.
					• 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 noise.	3	2	6	• Deliveries of plant and materials during standard hours, shall be undertaken outside of peak periods where possible	2	2	4	Complete regular toolbox talks on how to minimise impacts in relation to traffic.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					• Site vehicles shall be parked within the rail corridor and not affect public parking areas • Scheduled road movements shall be minimised where possible • Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services. • Designated access routes. • Approved Traffic Management Plans. • Community Notifications. • Pedestrian management with traffic controller in place where required.				Permits from local council and/or RMS
Truck deliveries out of normal working hours	Un-approved deliveries resulting in non-conformance with project requirements. Noise impact to community / potential complaints.	3	2	6	• 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; delivery vehicles will not be able to enter site prior to	2	2	4	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.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					Construction hours in residential areas, unless assessed and approved by an OOHW Permit • Approved traffic/access routes. • Planning and staging of works in approved hours as much as practical.				
Pedestrian/Cyclist access	Loss or disruption of pedestrian and/or cyclist access around the project site	3	2	6	• 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	2	2	4	Regular inspections of work fronts
Visual Amenity									
Building Materials Civil works Stockpiles	Surrounding aesthetic temporary (or permanently) altered during construction Lighting towers used during out of hours works may spill on nearby residents	2	3	6	• 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	1	3	3	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Temporary construction sheds and storage containers Plant and equipment movement Lighting Trees and vegetation Temporary site compound buildings, including double stack	Impacts to residents in properties adjacent to compound areas				• Refer to Visual Amenity Management Plan • Shade cloth • Screening on double stack buildings where possible and in consultation with impacted residents.				
Ancillary Facilities									
Appropriate management of ancillary facilities under approval CSSI 8256	Inadequate assessment of impacts to surrounding business and residential receivers and environmental receptors. Potential for complaints.	2	3	6	•Any ancillary facility not identified in the documents listed within Condition A1 can only be established if; they are located within the Construction boundary of the CSSI; and 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 they have no impacts on heritage items (including areas of archaeological sensitivity), and threatened species, populations or ecological communities beyond the	1	3	3	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					impacts approved under the terms of the planning approval CSSI 8256; and the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of the approval, including in relation to environmental, social and economic impacts. •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. •Any site offices, ancillary facilities or hazardous goods storage containers would be located on piers or stilts above the known 1% AEP flood level				

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					• 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				
Minor Ancillary Facilities									
Appropriate management of minor ancillary facilities under approval CSSI 8256 JHLOR also intend on establishing a Minor Ancillary Facilities at the locations listed in Section 2.2 above	Inadequate assessment of impacts to surrounding business and residential receivers and environmental receptors. Potential for complaints.	2	3	6	• Any site compound not identified in the EIS/PIR must have no greater environmental and amenity impacts than those that can be managed through the implementation of environmental measures detailed in this CEMP and will be assessed by the ER to have; • Minor amenity impacts to surrounding residences and businesses, after consideration of	1	3	3	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
					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;				
					• Minor environmental impact with respect to waste management and flooding; and • No impacts on biodiversity, soil and water, and heritage items beyond those already approved under the planning approval CSSI 8256.				
Utilities									
Utility management	Service strike leading to environmental degradation	3	3	9	• Develop and implement the Utilities Management Strategy in	1	4	4	Permit to Disturb Service searching

					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.				Detailed Site Survey management
Canterbury Compound									
Community sensitive issues	Noise from compound Light pollution from the compound Impacts to trees Privacy/Visual amenity Archaeology	3	4	12	• If permitted, install double stack office to provide noise attenuation and to block light where possible • 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.	1	4	4	Toolbox talks to workers and staff on being sensitive to neighbours. Toolbox talks/pre-starts on archaeological management requirements

					• 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 - at North Terrace and the Metro Services Building									
Community sensitive issues	Noise from compound Light pollution from the compound Impacts to trees Privacy/Visual amenity	3	4	12	• Tree protection and signage • Shade cloth	1	4	4	Toolbox talks to workers and staff on being sensitive to neighbours.
					• 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				
Flooding	Potential impacts from flooding	3	3	9	• Any site offices or ancillary facilities would 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	1	2	2	

					• Removal of equipment and materials out of potential flood areas				

Environmental Risk Assessment Rankings

This table may be used as a guide in determining the level of risk for each environmental issue. For each identified issue, consider the 'maximum credible' (not absolute worst case) risk that could result with **minimal or no controls** other than existing and using normal construction practices.

Note: Any one of the listed consequences must result in the use of the applicable consequence grading.

Probability:	**Consequence:**
5 = Certain 4 = Likely 3 = Possible 2 = Unlikely 1 = Rare	5 = Severe 4 = Major 3 = Moderate 2 = Minor 1= Incidental
1- 4 Acceptable 5 - 9 Acceptable with control measures 10 - 16 Requires the implementation of best practice 17 and Above = UNACCEPTABLE	

Likelihood (Probability and Frequency of Occurrence)			**Consequence (Outcome or Severity of Occurrence)**		
5	Certain	Common or repeating occurrence Consequence can reasonably be expected to occur in life of Project.	5	Severe	• Major pollution incident causing significant and widespread damage or potential to health or the environment • Persistent reduction in ecosystem function and value. • Ongoing disruption and loss of protected species. • Major prosecution likely, outcome in excess of $500,000
4	Likely	Known to have occurred / "has happened" Conditions may allow the consequence to occur on the Project during its lifetime The event has occurred within the Business Unit within the previous 5 years.	4	Major	• Significant widespread and persistent changes to habitat, species or environmental media • Significant pollution incident causing damage or potential damage to health or the environment external to the site. • Potential for prosecution. Potential outcome between $50,000 - $500,000 • Numerous substantial complaints • Actual material environmental harm
3	Possible	Could occur / "heard of it happening" Exceptional conditions may allow consequences to occur on the Project, or has occurred nationally within the Australian Business.	3	Moderate	• Localised irreversible habitat loss or effects on habitat, species or environmental media • Reportable incident to the relevant environmental regulator or other authority. • Demonstrated breach of legislative, licence or guideline requirements. • Likely infringement notice or fine, potential for prosecution up to $50,000. • Will cause complaints.

2	Unlikely	Not likely to occur Reasonable to expect that the consequence will not occur on the Project. Has occurred in industry but not in Business Unit.	2	Minor	• Localised degradation of habitat or short term impacts to habitat, species or environmental media. • Pollution incident that marginally exceeds licence conditions or guidelines for acceptable pollution. • Fine unlikely. • Potential for complaints.
1	Rare	Practically impossible Not known to have occurred in industry or unheard of.	1	Incidental	• Localised or short term effects on habitat, species or environmental media. • Fully contained on site and can be fully remediated. Little potential for fine or complaints. • Insignificant or trivial incident

Probability ► ▼Consequence	CERTAIN 5	LIKELY 4	POSSIBLE 3	UNLIKELY 2	RARE 1
5 – Severe	25	20	15	10	5
4 – Major	20	16	12	8	4
3 – Moderate	15	12	9	6	3
2 – Minor	10	8	6	4	2
1 – Incidental	5	4	3	2	1

APPENDIX 4 – Operational Control Procedures – Environmental Risk Action Plans

Environmental Risk Action Plans will be developed for each environmental issue which has an initial risk ranking of Medium or High and where a Sub-plan is not required. The ERAPs developed for S2B include;

1. Biodiversity
2. Delivery and Storage of Chemicals; Fuels and Oils including Dangerous Goods Requirements
3. Groundwater
4. Air Quality
5. Waste and Spoil

ERAP 1 – Biodiversity (Flora and Fauna Management)

Impact – Biodiversity impacts related to S2B and SWM1, 2, & 3 are expected to be minor. There will be some removal of trees and vegetation associated with site establishment, the installation of CSR, corridor and station fencing packages, the construction of retaining walls and the construction of new entrances and platforms at Bankstown. . 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 – CSSI 8256 CEMF Section 11			
Site specific planning / approval conditions / licence conditions	CoA – E3-E6 Mitigation measures committed in the EIS & PIR			
Potential Impacts and Initial Risk Rating* ***Refer to CEMP – Appendix 3 for Risk Rating Matrix**	**Potential impact**	Initial Risk Rating		
		P X	C	Risk
	Death or injury of fauna	2	4	8
	Unapproved damage or removal to threatened plant species, threatened vegetation community or habitat resource	2	4	8
	Unapproved removal or trimming of vegetation	2	2	4

Controls (means & resources)

Commitments & Mitigation Measures outlined in the EIS / PIR/CEMF:

Mitigation Measure	Applicable to S2B Locality	Responsibility
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 and EPBC Act	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
CoA-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.	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

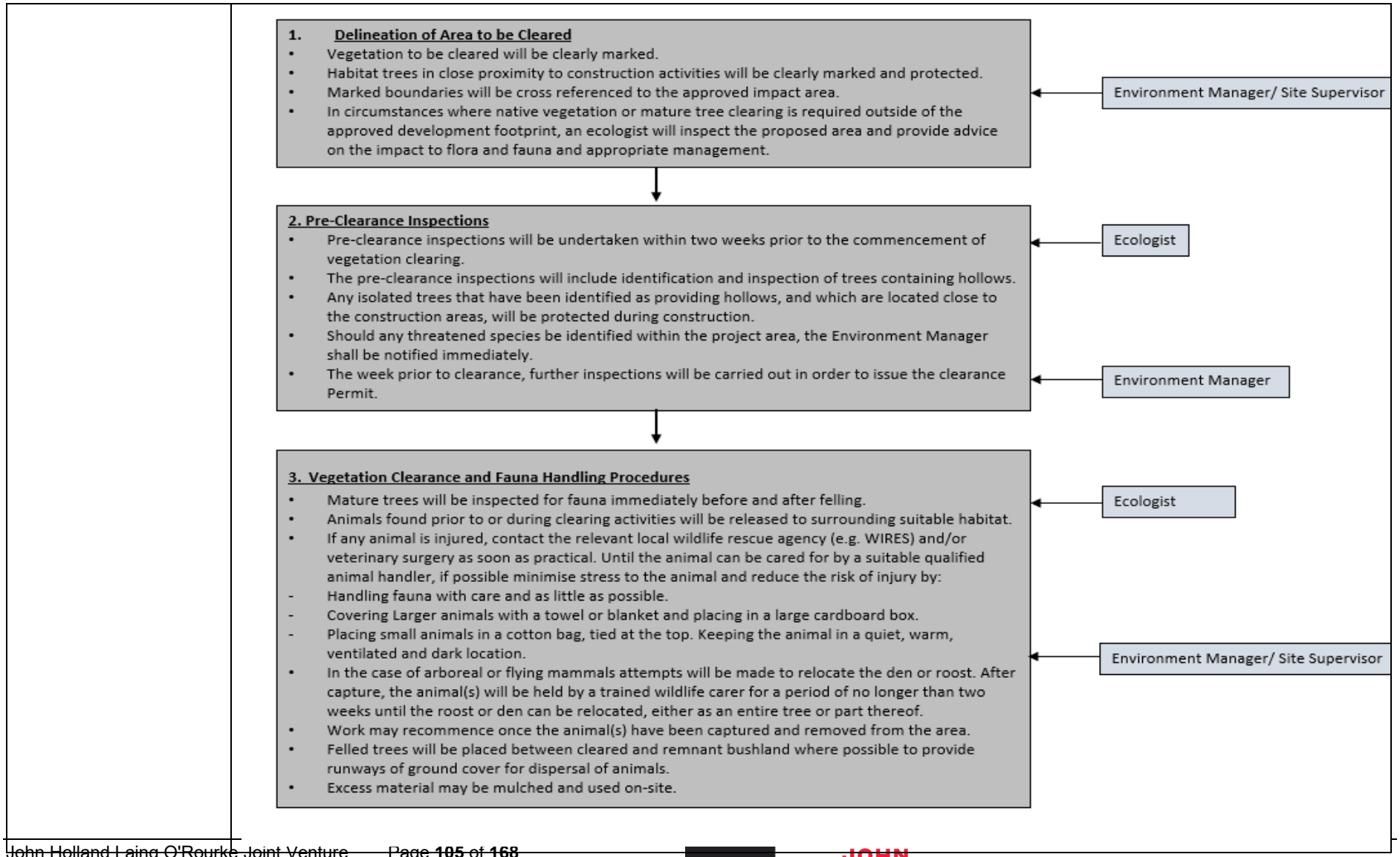
			Site Supervisor
	REMM B6 - A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B7 - Priority weeds would be managed in accordance with the Biosecurity Act 2015. Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B8 - Annual inspections would be undertaken for weed infestations and to assess the need for control measures.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B9 - Any outbreak of priority weeds and/or weeds of national environmental significance would be managed in accordance with the relevant guidelines.	Applicable	Environmental Manager Construction Manager Site Supervisor
	REMM B10 – Sydney Metro would take necessary steps to locate and protect threatened species and habitats where they occur inside the Sydenham to Bankstown rail corridor. Suitable protection measures would include fencing, signage and other measures where this would not impede the safe maintenance and operation of trains and related infrastructure.	Applicable	Environmental Manager Construction Manager Site Supervisor
	CEMF 11.1 a – The following flora and fauna management 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.	Applicable	Environmental Manager Construction Manager Site Supervisor
	CEMF 11.3a – 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 sigh-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 suitable qualified ecologist will be present	Applicable	Environmental Manager Construction Manager Site Supervisor

	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.		

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 Biodiversity Management Procedure will be developed prior to the commencement of construction (this ERAP)	Environmental Manager Construction Manager Site Supervisor
A Tree Report is to 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 to be used.	Construction Manager Site Supervisor
Awareness training in the need to preserve vegetation to be retained.	Environmental Manager Construction Manager
Provide barricading or other suitable protection measures for trees to be retained	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
Vegetation on the S2B site includes trees within the corridor and planted street trees. 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
If native fauna is identified within the disturbance footprint, the JHLOR 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 to be inspected regularly for the presence of fauna species.	Site Supervisor
No clearing or vegetation removal to occur without approval.	Environmental Manager Construction Manager Site Supervisor
All vegetation to be retained shall be protected and demarcated. These areas will be highlighted on the S2B 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
JHLOR 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 and weed impacted waste material and dispose of to a licenced facility	Construction Manager Site Supervisor
Inspect 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
Existing Haul Roads through Threatened Ecological Communities (TEC): An existing haul road was identified through an area of TEC (Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest) as indicated from broad mapping within the EIS. Due to overhanging branches the mapping did not indicate the presence of an existing haul road through the area. JHLOR's Ecologist and Arborist have advised that there will be no impact to the TEC if the following mitigation is put in place; • Barriers, flagging and signage will be placed along either side of the haul road through the TEC. No vegetation will be trimmed/removed to facilitate the installation these measures • Only the existing road is used for construction traffic. If construction traffic routes will be required closer to the trees than the existing road, additional tree protection measured will be required i.e. ground protection, trunk brank protection	Environmental Manager Construction Manager Site Supervisor
The following clearing procedure will be implemented should additional clearing be required	See flow chart


1. Delineation of Area to be Cleared
• Vegetation to be cleared will be clearly marked.
• Habitat trees in close proximity to construction activities will be clearly marked and protected.
• Marked boundaries will be cross referenced to the approved impact area.
• In circumstances where native vegetation or mature tree clearing is required outside of the approved development footprint, an ecologist will inspect the proposed area and provide advice on the impact to flora and fauna and appropriate management.
Environment Manager/ Site Supervisor
2. Pre-Clearance Inspections
• Pre-clearance inspections will be undertaken within two weeks prior to the commencement of vegetation clearing.
• The pre-clearance inspections will include identification and inspection of trees containing hollows.
• Any isolated trees that have been identified as providing hollows, and which are located close to the construction areas, will be protected during construction.
• Should any threatened species be identified within the project area, the Environment Manager shall be notified immediately.
• The week prior to clearance, further inspections will be carried out in order to issue the clearance Permit.
Ecologist
Environment Manager
3. Vegetation Clearance and Fauna Handling Procedures
• Mature trees will be inspected for fauna immediately before and after felling.
• Animals found prior to or during clearing activities will be released to surrounding suitable habitat.
• If any animal is injured, contact the relevant local wildlife rescue agency (e.g. WIRES) and/or veterinary surgery as soon as practical. Until the animal can be cared for by a suitable qualified animal handler, if possible minimise stress to the animal and reduce the risk of injury by:
- Handling fauna with care and as little as possible.
- Covering Larger animals with a towel or blanket and placing in a large cardboard box.
- Placing small animals in a cotton bag, tied at the top. Keeping the animal in a quiet, warm, ventilated and dark location.
• In the case of arboreal or flying mammals attempts will be made to relocate the den or roost. After capture, the animal(s) will be held by a trained wildlife carer for a period of no longer than two weeks until the roost or den can be relocated, either as an entire tree or part thereof.
• Work may recommence once the animal(s) have been captured and removed from the area.
• Felled trees will be placed between cleared and remnant bushland where possible to provide runways of ground cover for dispersal of animals.
• Excess material may be mulched and used on-site.
Ecologist
Environment Manager/ Site Supervisor

Timeframe	Duration of the works.			
Monitoring & Reporting	Tree Report inspections as required Vegetation Removal or Trimming Permits Pre-clearance inspections Daily Clearance reports			
Potential Impacts and Residual Risk Rating* ***Refer to CEMP – Appendix 3 for Risk Rating Matrix**	**Potential impact**	Residual Risk Rating		
		P X	C	Risk
	Death or injury of fauna	1	4	4
	Unapproved damage or removal to threatened plant species, threatened vegetation community or habitat resource	1	4	4
	Unapproved removal or trimming of vegetation	1	2	2

ERAP 2 – 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. JHLOR 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 JHLOR's Operations. • Compliance with relevant transport and storage requirements • All vehicles transporting dangerous goods have appropriate placards, licenses and emergency equipment and procedures			
Legal, Contractual & Other Requirements	• 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)			
Site specific planning / approval conditions / licence conditions	N/A			
Potential Impacts and Initial Risk Rating* ***Refer to CEMP – Appendix 3 for Risk Rating Matrix**	**Potential impact**	Initial Risk Rating		
		P X	C	Risk
	Fuel or chemical leaks impacting on receiving environment	3	3	9
	Inappropriate transport and handling of dangerous/hazardous substances leading to impacts to human health or environment	2	4	8
	Inappropriate spill management	3	3	9

Controls (means and resources)

Commitments & Mitigation Measures outlined in the EIS / PIR

Mitigation Measure	Applicable to S2B Locality	Responsible
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).	Applicable	Safety 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 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 is to 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 to 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.	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 to 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 JHLOR without the Project Manager/Workplace Manager's approval.	Safety Manager Construction Manager Site Supervisor
Where dangerous goods are transported by JHLOR, a SWMS must be developed and include dangerous goods requirements.	Safety Manager Construction Manager Site Supervisor
Transport information/manifest is required to be included with any quantity of Dangerous Goods transported by JHLOR – 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
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 JHLOR 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

ERAP 3 – Groundwater
Impact - Minimal impact during piling activities for retaining walls. There is some potential for piles associated with the retaining wall to intersect the groundwater table. The piles for the Bankstown Station Works are approximately 8.8m deep and are not expected to intercept groundwater at approximately 11 m depth.

<table>
<tr><td>Objective</td><td>• 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>• All groundwater to be tested before dewatering occurs</td></tr>
<tr><td>Legal, Contractual & Other Requirements</td><td>• Planning consent conditions – SSI 8256
• CEMF Section 7.1
• 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>• In accordance with the Sydney Metro City & Southwest –Sydenham to Bankstown Staging Report the S2B project does not require a specific Groundwater Management Plan due to low risk of project related groundwater impacts. As such management of any groundwater encountered during the works is to be managed in accordance with this ERAP</td></tr>
<tr><td>Potential Impacts and Initial Risk Rating*

*Refer to CEMP – Appendix 3 for Risk Rating Matrix</td><td>
<table>
<tr><th rowspan="2">Potential Impact</th><th colspan="3">Initial Risk Rating</th></tr>
<tr><th>P x</th><th>C</th><th>Risk</th></tr>
<tr><td>Inappropriate dewatering of groundwater impacting on receiving environment or groundwater source</td><td>2</td><td>2</td><td>4</td></tr>
</table>
</td></tr>
<tr><td>Controls (means and resources)</td><td>Commitments & Mitigation Measures outlined in the EIS / PIR/CEMF
<table>
<tr><th>Mitigation Measure</th><th>Applicable to S2B Locality</th><th>Responsible</th></tr>
<tr><td>CEMF 7.1a – 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.</td><td>N/A</td><td>N/A</td></tr>
</table>
</td></tr>
</table>

	CEMF 7.3a – Examples of groundwater mitigation measures include: i. Implementing all feasible and reasonable measures to limit groundwater inflows to stations and crossovers; and ii. Undertaking groundwater monitoring during construction (levels and quality) in areas identified as 'likely' and 'potential' groundwater dependent ecosystems.	N/A	N/A

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

Mitigation Measure	Responsible
A Groundwater Management Procedure (ERAP) will be developed prior to the commencement of construction.	Environmental Manager
A dewatering permit is to be in place for all dewatering activities, including the dewatering of any groundwater	Environmental Manager Site Supervisor
Awareness training is to be provided to workers as required	Environmental Manager Site Supervisor
Water treatment units are to be utilised and maintained where water testing indicates treatment is required.	Environmental Manager Construction Manager Site Supervisor
Dewatering may only occur on site at or to licenced discharge points	Environmental Manager Construction Manager Site Supervisor
Control of chemicals as per the requirements of ERAP 2	Refer ERAP 2

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 • The 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 operations.
Monitoring and Reporting	• Dewatering permit • Inspections as required • Inspection and maintenance of treatment units (where applicable).

	• Incidents are to be recorded on form Environmental Incident Report (Environmental Incident Report).			
Potential Impacts and Residual Risk Rating*	**Potential Impact**	Residual Risk Rating		
		P x	C	Risk
***Refer to CEMP – Appendix 3 for Risk Rating Matrix**	Inappropriate dewatering of groundwater impacting on receiving environment or groundwater source	1	2	2

ERAP 4 – 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">• Minimise the emission of dust from the premises to the greatest extent practicable.
• Minimise the release of contaminants, (odour, smoke etc.) into the air.</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</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 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>Dust or plant emission impacting on the receiving environment and human health</td><td>3</td><td>2</td><td>6</td></tr>
<tr><td>Abrasive blasting waste emissions impacting on the receiving environment and human health</td><td>3</td><td>3</td><td>9</td></tr>
<tr><td></td><td>Odour from works causing disturbance to local receivers</td><td>2</td><td>2</td><td>4</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 S2B Locality</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 would be turned off when not in use and not left to idle for prolonged periods.	Site Supervisor
Machinery and plant that will be kept on site will be serviced as per manufactures specifications.	Site Supervisor
Vehicle movements would be limited to designed entries and exits, haulage routes and parking areas.	Construction Manager Site Supervisor
Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.	Environmental Manager Site Supervisor
Materials transported to and from the site would be covered to reduce dust generation in transit.	Site Supervisor
Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.	Environmental Manager Site Supervisor
Provide shaker grids, rumble strip or equivalent stabilisation at site egress points.	Site Supervisor
Remove mud from haul vehicles prior to entering public roads.	Site Supervisor
Stabilisation of any exposed surfaces as soon as practicable, including implementation of final landscaping as early as possible.	Construction Manager Site Supervisor
Shade cloth would be fastened to the perimeter fence on the project site, where practicable, to minimise dust transported from the site during construction.	Construction Manager Site Supervisor
Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken.	Site Supervisor
Works (including the spraying of paint and other materials) would be suspended during strong winds or in weather conditions where high levels of dust or airborne particulates are likely.	Construction Manager Site Supervisor
Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust.	Construction Manager Site Supervisor

	Provision of Water tankers where necessary.	Construction Manager Site Supervisor
	Cover haul vehicles loads & ensure tail gates are closed when operating on public roads.	Construction Manager Site Supervisor
	Provide awareness training in the need to minimise dust.	Environmental Manager
	Note any odours during site inspections, particularly from any effluent tanks, and apply de-odourising agents as required.	Environmental Manager Construction Manager Site Supervisor

Responsibilities	• The Site Manager to implement the requirements of this ERAP. • Site Manager and Environmental Manager (or delegate) are to inspect the works at regular intervals.			
Timeframe	• Duration of site works.			
Monitoring and Reporting	• Inspections as required. • Incidents or complaints to be recorded on form Environmental Incident Report (Environmental Incident Report).			
Potential Impacts and Residual Risk Rating* ***Refer to CEMP – Appendix 3 for Risk Rating Matrix**	**Potential Impact**	Residual Risk Rating		
		P x	C	Risk
	Dust or plant emission impacting on the receiving environment and human health	2	2	4
	Abrasive blasting waste emissions impacting on the receiving environment and human health	2	2	4
	Odour from works causing disturbance to local receivers	1	2	2

ERAP 5 – Waste and Spoil

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 target 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 materials (in accordance with WM4).
• 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
• CEMF Section 6 and Section 17
• Protection of the Environment Operations Act 1997
• Protection of the Environment Operations (Waste) Regulation 2014
• EPL 21147</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</td></tr>
<tr><td rowspan="2">Potential Impacts and Initial Risk Rating*

*Refer to CEMP – Appendix 3 for Risk Rating Matrix</td><td rowspan="2">Potential impacts</td><td colspan="3">Initial Risk Rating</td></tr>
<tr><td>P x</td><td>C</td><td>Risk</td></tr>
<tr><td></td><td>Inappropriate waste disposal impacting on environmental receivers</td><td>3</td><td>2</td><td>6</td></tr>
<tr><td>Controls (means and resources)</td><td colspan="4">Commitments & Mitigation Measures outlined in the EIS / SPIR/CEMF</td></tr>
</table>

Mitigation Measure	Applicable to S2B Locality	Responsible
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, 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
	CEMF 6.1a – 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.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor
	CEMF 6.3a – Examples of spoil mitigation measures include: i. Implementing the spoil re-use hierarchy; ii. Handling spoil to minimise potential for air or water pollution; and iii. Minimise traffic impacts associated with spoil removal.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor

	EPL 21147, O4.1 Waste management The licensee must assess, classify and manage any waste generated at the premises in accordance with the Waste Classification Guidelines Part 1: Classifying Waste, November 2014 prior to taking the waste off the premises.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor
	EPL 21147, O4.2 The licensee must not cause, permit or allow any waste generated: (a) Outside the premises to be received at the premises, except for recycled materials from Sydney Trains rail corridor (EPL 12208) or Sydney Trains recycling facility (EPL 7515), Virgin Excavated Natural Material or materials that meet the EPA's Resource Recovery Exemptions for engineered fill purposes; (b) At the premises to be land applied at the premises, except as permitted in Condition O4.3.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor
	EPL 21147, O4.3 Excavated material suitable for re-use within the premises, may be transported from one part of the premises or the Sydney Trains rail corridor or Sydney Trains recycling facility to another part of the premises by road.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor
	EPL 21147, O4.4 Waste Management Plans Waste Management Plans must be prepared for all demolition/construction/excavation works undertaken on the premises that generate waste that will be disposed offsite (not including office paper or cardboard). The plan must be completed prior to waste being transported off the premises. The plans must include the following: (a) Estimations of the different waste types to be generated from the proposed works; and (b) Estimations of how much of each waste type will be generated from the proposed works; and (c) List of all places (full street address) where waste will be transported to; and (d) Written confirmation from each place of disposal (listed in point c) that they can lawfully receive the types of waste proposed to be transported there. (e) Where the place of disposal changes after the plan has been made, an amendment to the plan can be made as an addendum that includes an update points a) to d) above. EPL 21147, O4.5 The licensee must ensure waste management, waste transport and waste disposal is carried out in accordance with the waste management plans prepared for the premises. EPL 21147, O4.6 A copy of all waste management plans must be kept on the premises.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor

EPL 21147, O4.7 Waste Transport Documentation and Record Keeping Legible copies of all receipts and/or weighbridge dockets in relation to disposal of waste from the premises must be collected from transporters and/or contractors and kept by the licensee.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor
EPL 21147, O4.8 Transport and Storage of Qenos pipe The Qenos pipe identified within the premises in accordance with L3.1 may be transported by road to the secure storage, located within the Canterbury site compound of the premises. EPL 21147, O4.9 Transport of Qenos pipe under Condition O4.8 must be in accordance with Clause 78 of the Protection of the Environment Operations (Waste) Regulation 2014. EPL 21147, O4.10 The Qenos pipe must be securely packaged and stored in a sealed container when stored at the Canterbury site compound of the premises.	Applicable	Sustainability Manager Environmental Manager Construction Manager Site Supervisor

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

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

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

Spoil will be managed to avoid contamination of land or water by implementing appropriate erosion and sedimentation controls, in particular by covering stockpiles where practicable	Environmental Manager Construction Manager Site Supervisor
Spoil will be managed to avoid contamination of land or water by avoiding overland flow paths and known flood zones as storage areas	Environmental Manager Construction Manager Site Supervisor
Spoil will be managed with consideration of the impacts on residents and other sensitive receivers by selecting laydown areas that are as far away from receivers as possible	Environmental Manager Construction Manager Site Supervisor
Spoil will be managed with consideration of the impacts on residents and other sensitive receivers by using approved haulage routes under the Construction Traffic Management Plan	Construction Manager Site Supervisor
Site contamination will be effectively managed to limit the potential risk to human health and the environment by segregating contaminated spoil	Environmental Manager Construction Manager Site Supervisor
Site contamination will be effectively managed to limit the potential risk to human health and the environment by implementing the unexpected contamination finds procedure	Environmental Manager Construction Manager Site Supervisor
Implement the mitigation measures within the Construction Soil and Water Management Plan and other ERAPs 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 S2B site 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
	Spoil is to be reused unless; - Spoil does not meet the criteria for reuse on an industrial/commercial site in accordance with National Environmental Protection (Assessment of Site Contamination) Measure - The spoil does not meet NSW EPA Resource Recovery Exemptions for export to other sites - Geotechnical properties of the spoil do not meet the requirements for reuse as fill. It is noted that a geotechnical report is not always required to assess spoil for reuse. A geotechnical engineer or experienced civil engineer can undertake a visual assessment to determine whether certain properties of the spoil or impurities, such as organics, make the spoil suitable for reuse - There are physical site constraints that prevent the safe or environmentally sound storage of material on site - The scope of project works does not require on-site reuse of material	Environmental Manager Construction Manager Site Supervisor Engineers

Responsibilities	• The Site Manager to implement the requirements of this ERAP. • Site Manager and Environmental Manager (or delegate) are to inspect the works at regular intervals.			
Timeframe	• Duration of site works until all JHLOR waste obligations are met			
Monitoring and Reporting	• Skips monitored visually by the Site Manager on a daily basis. • Inspections as required. • Incidents or complaints to be recorded on form Environmental Incident Report (Environmental Incident Report). • Waste disposal records to be recorded in JHLOR Waste Register.			
Potential Impacts and Initial Risk Rating* ***Refer to CEMP – Appendix 3 for Risk Rating Matrix**	**Potential impacts**	Initial Risk Rating		
		P x	C	Risk
	Inappropriate waste disposal impacting on environmental receivers	2	2	4

APPENDIX 5 – Environmental Control Map

Indicative ECM. The ECMs are considered a "live document" and will continue to evolve as the works progress.

S2B - Environmental Control Map		
ID	**Environmental Aspect**	**Description**
1	**Project**	• This ECM is a supplementary document to the S2B Construction Environment Management Plan, Sydney Metro City and Southwest Sydenham to Bankstown Environmental Impact Statement, Submissions and Preferred Infrastructure Report, Instrument of Approval and all related planning documentation
2	**Site Access**	• Site access will be from various existing rail corridor access gates
3	**General**	• The team will be trained on this ECM, general environmental issues, location of sensitive areas and erosion/sediment controls. • Works will be subject to inspections by the ER, Sydney Metro Environment and Planning Manager and JHLOR Environmental Manager (or delegate). • This ECM will be displayed on site sheds.
4	**Contamination**	• If suspected contamination is encountered, works will cease in the immediate area, the area will be demarcated and sign-posted and the Occupational Hygienist will be called upon to confirm the contamination and provide advice on the best way to remove or remediate the contamination • Occupational hygienist and asbestos removalist will be in attendance for all shifts to manage contaminated soil.
5	**Air Quality**	• Air quality issues will be managed in accordance with the mitigation measures specified within the Air Quality ERAP. • A water cart will be available to supress any dust. • Plant or machinery will not be left idling • Drive to conditions • Temporary spoil stockpiles to be covered to prevent wind erosion and dust.
6	**Waste**	• Any construction waste generated will be stored within bins as appropriate • Any stockpiles of waste spoil will stockpiled onsite and appropriate erosion and sediments controls will be installed • All waste will be classified in accordance with the Waste Classification Guidelines (EPA, 2014) prior to disposal from site. • Soil and vegetation that could contain weed material will be removed from machinery prior to any movements off site • Weed impacted waste material would be segregated and disposed of to a licenced facility
7	**Soils and water**	• Soil and water will be managed in accordance with the mitigation measures specified within the CSWMP • Stockpiles will be covered to mitigate the risk of erosion • Drainage and waterways will be protected • ESCPs will be implemented for work areas and will be updated to reflect the progress of the works as required. • If water discharge is required, Sydney Metro Water Discharge or Reuse Approval form to be utilised. Form to be approved by JHLOR Environmental Manager (or delegate) prior to discharge.
8	**Heritage**	• Heritage will be managed in accordance with the mitigation measures outlined within the CHMP • Unexpected finds of heritage items must be reported to JHLOR Environmental Manager and Sydney Metro as per the Unexpected Finds Procedure. The site is to

S2B - Environmental Control Map		
ID	**Environmental Aspect**	**Description**
		be isolated and investigated by a heritage consultant. Approval to proceed required prior to re-commencing works. • If material that has the potential to be human remains are uncovered works in the area will cease immediately and the Environmental Manager will be informed.
9	**Noise and Vibration**	• Noise and vibration will be managed in accordance with the mitigation measures outlined within the CNVMP and CNVIS • All works will be completed in compliance with Sydney Metro CEMF, Sydenham to Bankstown Planning Approval, OOHW Approval, CNVS and EPL 21147 requirements. • All plant will have non-tonal reversing alarms. • Staff and workers will be instructed to avoid shouting both on-site and off-site • The Community will be notified of works in accordance with the CNVS. • Noise monitoring will be undertaken in accordance with the CNVS and in response to complaints.
10	**Traffic and Transport**	• Traffic will be managed in accordance with the mitigation measures outlines within the Construction Traffic Management Plan. • Road Occupancy Licences will be obtained as required. • Additional traffic controls will be implemented in accordance with TCP(s) as approved by the relevant local council. • All vehicles to enter rail corridor immediately on arrival to gate • Plant and vehicles engines to be switched off when not in use, with engine idling minimised as much as possible. • Pedestrian and cyclist access will be maintained in public spaces or redirected as appropriate.
11	**Utilities**	• Utilities will be managed in accordance with the Utilities Management Strategy • Any impacts to utilities will be reported to site HSE Manager, supervisors, Sydney Trains and Sydney Metro.
12	**Biodiversity**	• Vegetation trimming/removal must only occur with a valid JHLOR Vegetation Removal or Trimming Permit. • Protection will be put in place around any threatened vegetation communities • Pre-clearance surveys and clearance inspections will be undertaken by a qualified ecologist • If threatened flora or fauna species are identified on site, work in the vicinity of these species would stop immediately. A spotter/catcher/botanist would be engaged to survey the site and advise on species management • Where tree removal is required, a Tree Report must be developed unless the tree has been identified and approved in a previous Tree/Arborist report • Where trenching or excavation is required, the location or route would be modified to avoid any damage to trees or tree roots, where possible • Stockpiles, plant, equipment and materials are to be located on existing cleared areas, away from the drip zone of trees and native vegetation • Soil and vegetation that could contain weed material should be removed from machinery prior to any movements off site • 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.

S2B - Environmental Control Map		
ID	**Environmental Aspect**	**Description**
13	**Chemical, fuel storage and use**	• No chemicals required to be stored onsite. • If you are required to bring any chemicals onto site, they must be verified and registered in an SDS. SDS must be kept on site. • Spill kits located at site compound. Portable spill kits available in site vehicles. • Refuelling is to be undertaken using suitable measure to prevent contamination – this should include the use of absorbent pads, plant nappies, and portable spill trays to prevent splash back spills. • All plant and equipment will be checked daily to ensure there is no leaking oil, fuel or other liquids.
14	**Imported materials**	• Imported materials will include stabilised sand, recovered resources, quarry materials and will be sourced from licenced suppliers. Materials to be stockpiled temporarily within the rail corridor with controls around it. • Avoid importing materials and earth moving plant from Queensland and Northern NSW. 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.
15	**No-go zones**	• Construction activities will be restricted to the Project boundary. Activities outside site boundary will undergo a review for potential environmental impacts and require approval from Sydney Metro and ER as appropriate.

Contact Information		
Position	**Name**	**Phone**
JHLOR Project Leader	Joe Thompson	0437 476 581
JHLOR Construction Manager	Sean Robertson	0422 535 497
JHLOR Environment Manager	Lucas Dobrolot	0422 417 385
JHLOR WHS Manager	Paul Mayne	0438 617 012
ER	Jo Heltborg	0414 554 277
Alternate ER	Brett McLennan	0417 065 403
Sydney Metro Senior Environmental Manager	Emmanuel Smith	0488 310 438
Sydney Metro Info Line		1800 019 989
Sydney Trains Info Line		131 500
Environmental Line / Pollution Incident Response Line		131 555
Office of Environment & Heritage Pollution Line		131 555
Emergency		000 or 112 (mobiles)
WIRES		1300 094 737

Standard Working Hours

As per EPL 21147, audible construction works within the rail corridor will be restricted to the below hours unless otherwise approved by the Environmental Manager:

- 7:00AM to 6:00PM - Monday to Friday
- 8:00AM to 6:00PM - Saturdays
- No work on Sundays or public holidays

Any works outside of the hours above require OOHW and Sydney Metro and JHLOR Environmental Manager's Approval. Refer to Section 2.5 of the S2B CEMP for works occurring outside the rail corridor.

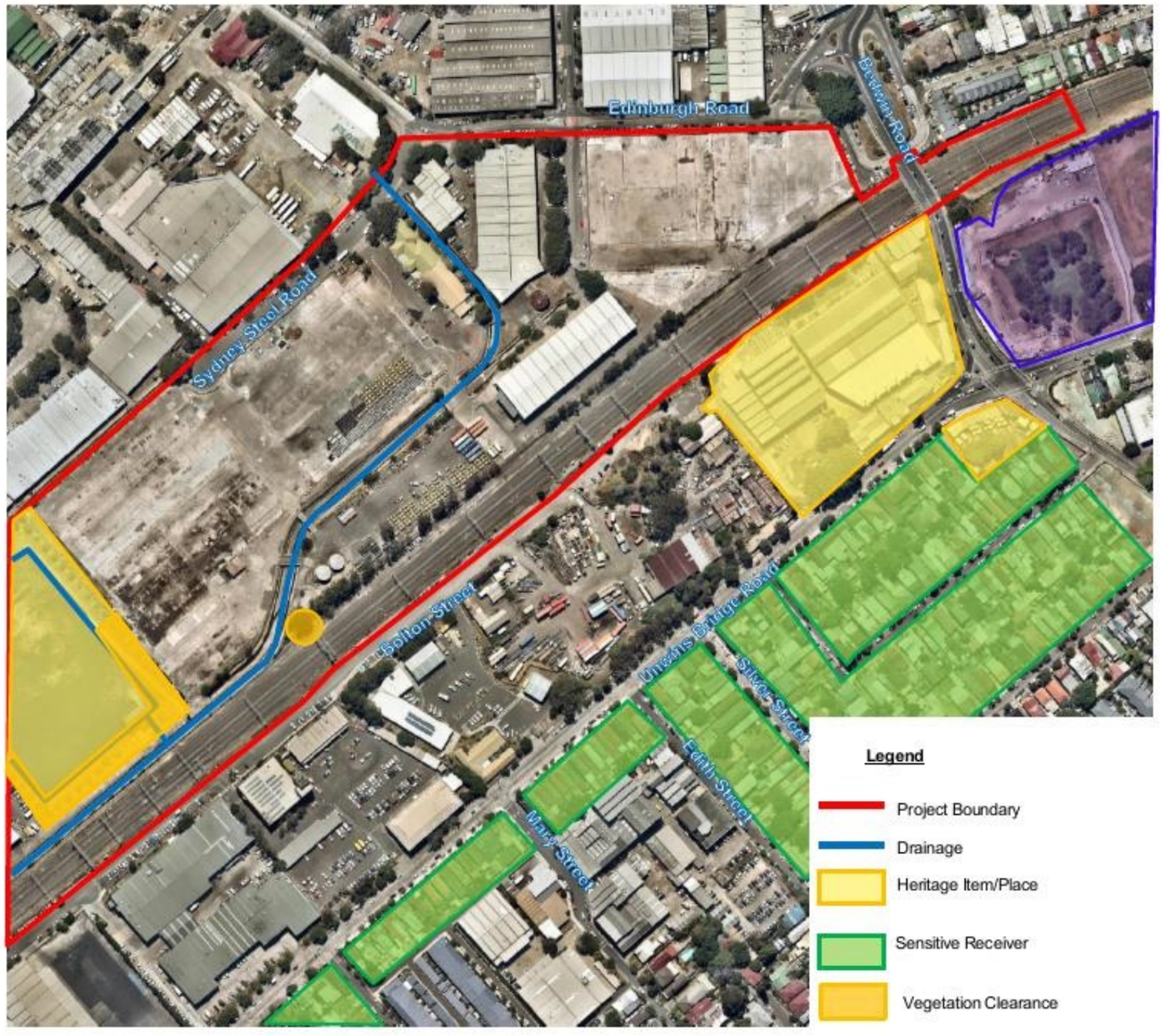
As per EPL 21147, unless otherwise specified by conditions L4.2 and L4.3

(a) High noise impact works and activities must only be undertaken:

i. between the hours of 8:00am to 6:00pm Monday to Friday;
ii. between the hours of 8:00am to 1:00pm Saturday; and
iii. in continuous blocks not exceeding 3 hours each with a minimum respite from those activities and works of not less than 1 hour between each block.

For the purposes of this condition 'continuous' includes any period during which there is less than a 1hour respite between ceasing and recommencing any of the work that is the subject of this condition.

Environmental Control Map — Sydenham Station and Junction – Northeast Portion



Key Environmental Risks & Controls

No works are permitted outside the red project boundary or within protected areas

Report all incidents and any complaints

Notify Environment Manager any unusual finds (odours, discoloured soil, asbestos, remains, suspected artefacts)

SOIL AND WATER:

Hazardous substances must be stored correctly to prevent spills

ERSED controls to be installed as per this SEP and the Erosion and Sedimentation control plans (ESCP) and report damaged controls

No mud/sediment to be tracked outside the site area

FLORA AND FAUNA

No vegetation to be impacted

WASTE:

Place rubbish in appropriate bins, do not litter
Waste must only be disposed off site at licenced waste facilities, meaning they must hold an Environment Protection Licence to receive waste

IMPORTING MATERIALS:

Obtain reports/ certificate for all imported material prior to delivery to site. The paperwork must be checked by the Environment Team to ensure it meets EPA requirements

AIR QUALITY:

Dust suppression measures must be used to prevent impacting nearby residents and all loads must be covered

NOISE AND VIBRATION:

Standard construction hours are 7am to 6pm M-F; 8am—1pm Sat – all Out of Hours Works are subject to approval in accordance with the Conditions of Approval and EPL

No works Sundays or Public Holidays

No idling or parking outside residential properties

High noise impact works only permitted 8am to 5pm M-F; 8am to 1pm

Sat and in continuous blocks not exceeding 3 hours each with a minimum respite of 1 hour between each block

TRAFFIC:

Parking only within designated areas and use only approved haul routes

No queuing in residential streets before or after hours

HERITAGE:

Cadastral survey only permitted in Heritage Areas

INCIDENTS:

All incidents are to be reported immediately to the Environmental Manager. When an incident occurs, act to mitigate the risk of damage to the environment. Spill kits are available at ancillary facilities and within mobile plant.

Environmental Control Map

Sydenham Station and Junction – Centre Portion

Key Environmental Risks & Controls

No works are permitted outside the red project boundary or within protected areas

Report all incidents and any complaints

Notify Environment Manager any unusual finds (odours, discoloured soil, asbestos, remains, suspected artefacts)

SOIL AND WATER:

Hazardous substances must be stored correctly to prevent spills

ERSED controls to be installed as per this SEP and the Erosion and Sedimentation control plans (ESCP) and report damaged controls

No mud/sediment to be tracked outside the site area

FLORA AND FAUNA

No vegetation to be impacted

WASTE:

Place rubbish in appropriate bins, do not litter
Waste must only be disposed off site at licenced waste facilities, meaning they must hold an Environment Protection Licence to receive waste

IMPORTING MATERIALS:

Obtain reports/ certificate for all imported material prior to delivery to site. The paperwork must be checked by the Environment Team to ensure it meets EPA requirements

AIR QUALITY:

Dust suppression measures must be used to prevent impacting nearby residents and all loads must be covered

NOISE AND VIBRATION:

Standard construction hours are 7am to 6pm M-F; 8am—1pm Sat – all Out of Hours Works are subject to approval in accordance with the Conditions of Approval and EPL

No works Sundays or Public Holidays

No idling or parking outside residential properties

High noise impact works only permitted 8am to 5pm M-F; 8am to 1pm

Sat and in continuous blocks not exceeding 3 hours each with a minimum respite of 1 hour between each block

TRAFFIC:

Parking only within designated areas and use only approved haul routes

No queuing in residential streets before or after hours

HERITAGE:

Cadastral survey only permitted in Heritage Areas
INCIDENTS:

All incidents are to be reported immediately to the Environmental Manager. When an incident occurs, act to mitigate the risk of damage to the environment. Spill kits are available at ancillary facilities and within mobile plant.

SSJ-ECM-CEMP Centre Portion Rev04.docx

Environmental Control Map

Sydenham Station and Junction – Southwest Portion

Key Environmental Risks & Controls

No works are permitted outside the red project boundary or within protected areas

Report all incidents and any complaints

Notify Environment Manager any unusual finds (odours, discoloured soil, asbestos, remains, suspected artefacts)

SOIL AND WATER:

Hazardous substances must be stored correctly to prevent spills

ERSED controls to be installed as per this SEP and the Erosion and Sedimentation control plans (ESCP) and report damaged controls

No mud/sediment to be tracked outside the site area

FLORA AND FAUNA

No vegetation to be impacted

WASTE:

Place rubbish in appropriate bins, do not litter
Waste must only be disposed off site at licenced waste facilities, meaning they must hold an Environment Protection Licence to receive waste

IMPORTING MATERIALS:

Obtain reports/ certificate for all imported material prior to delivery to site. The paperwork must be checked by the Environment Team to ensure it meets EPA requirements

AIR QUALITY:

Dust suppression measures must be used to prevent impacting nearby residents and all loads must be covered

NOISE AND VIBRATION:

Standard construction hours are 7am to 6pm M-F; 8am—1pm Sat – all Out of Hours Works are subject to approval in accordance with the Conditions of Approval and EPL

No works Sundays or Public Holidays

No idling or parking outside residential properties

High noise impact works only permitted 8am to 5pm M-F; 8am to 1pm

Sat and in continuous Blocks not exceeding 3 hours each with a minimum respite of 1 hour between each block

TRAFFIC:

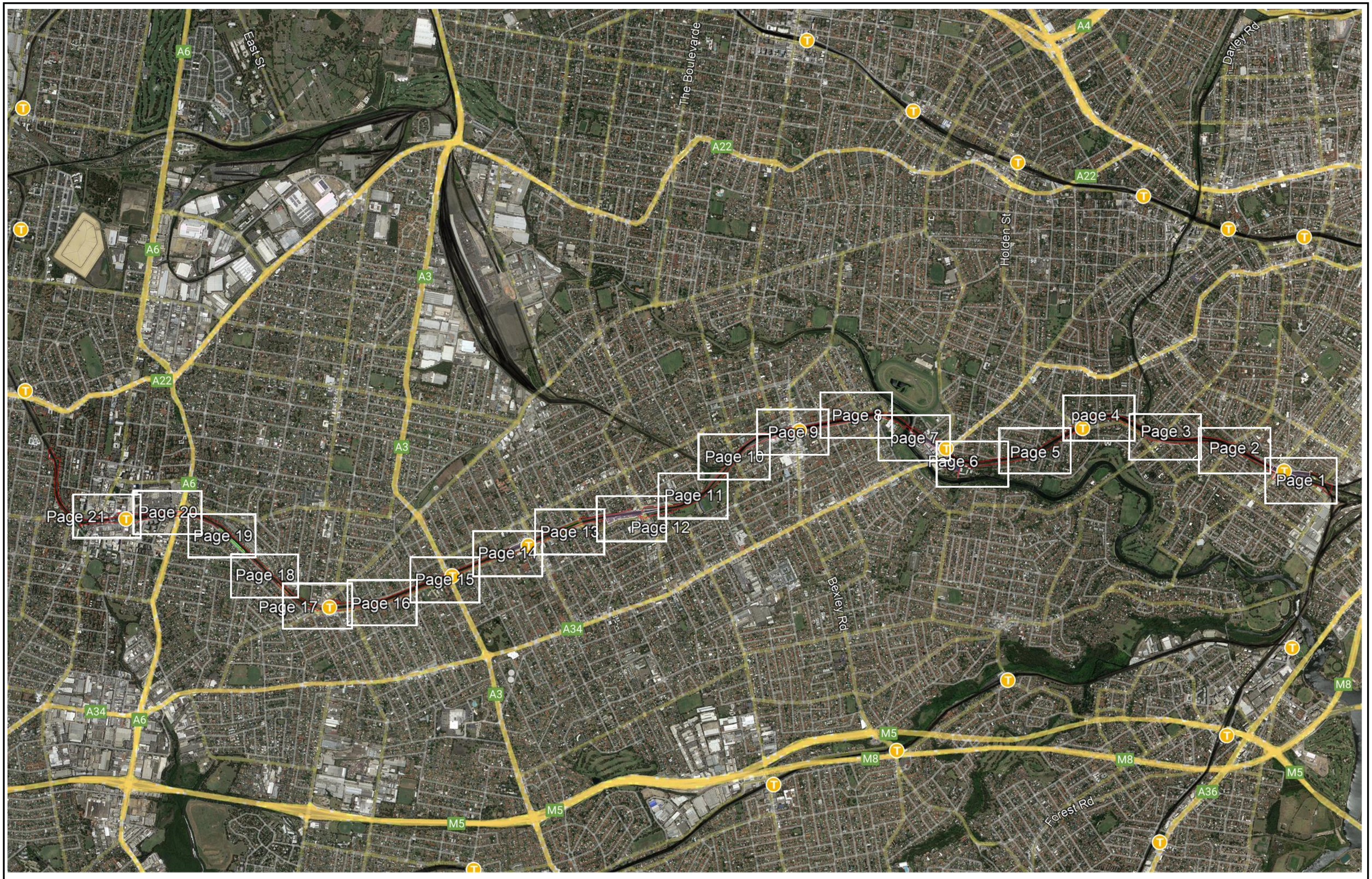
Parking only within designated areas and use only approved haul routes

No queuing in residential streets before or after hours

HERITAGE:

Cadastral survey only permitted in Heritage Areas

SSJ-ECM-CEMP SW Portion Rev04.docx



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

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

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**

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

LAING O'ROURKE

JOHN HOLLAND

SITE OVERVIEW

SWMC

ENVIRONMENTAL CONTROL MAP

Cover Sheet | 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
Schwebel St
Leofrene Ave
Victoria Rd
Meeks Ln
Meeks Rd
Blamire La
Grove St
Charlotte Ave
Myrtle St
Manhoe 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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

ILLAWARRA & VICTORIA ROAD

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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

LIVINGSTONE ROAD BRIDGE

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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

ALBERMARLE ST & WARDELL RD

SWMC

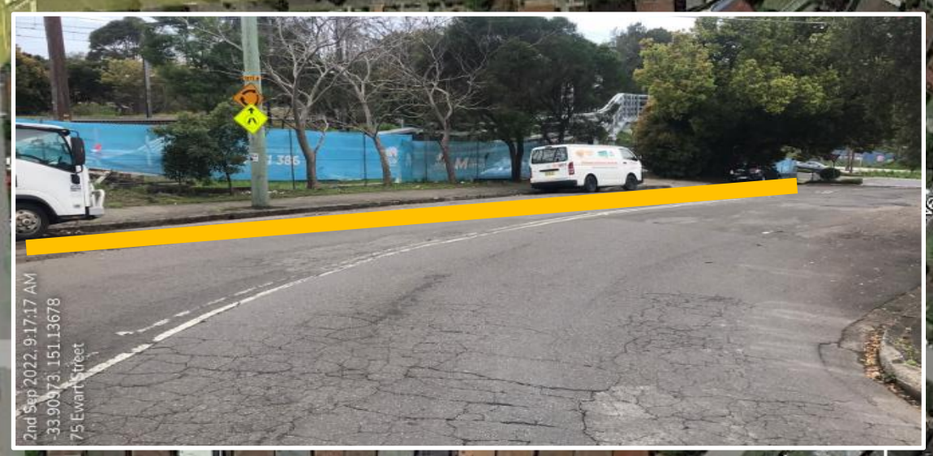
ENVIRONMENTAL CONTROL MAP

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
Hampden St
The Parade
Garnet St
Terrace Rd
Crinan St
Floss St
Floss St
Hurlstone Park Station
Ewart St
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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

EWART & GARNET ST

Dulwich Hill - SWMC

ENVIRONMENTAL CONTROL MAP

A3

Heritage Bridge
(No work on bridge unless prior approval has been granted)

Under track culvert

Canterton St
Melford St
Acton St
Kilbride St
Kilbride St
Dunstaffenage St
Commons St
Railway St
Foord Ave
Burnett St
Keir Ave
Smith Ave
Hurlstone Ave
Hurlstone Ave
Hurlstone Ave
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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

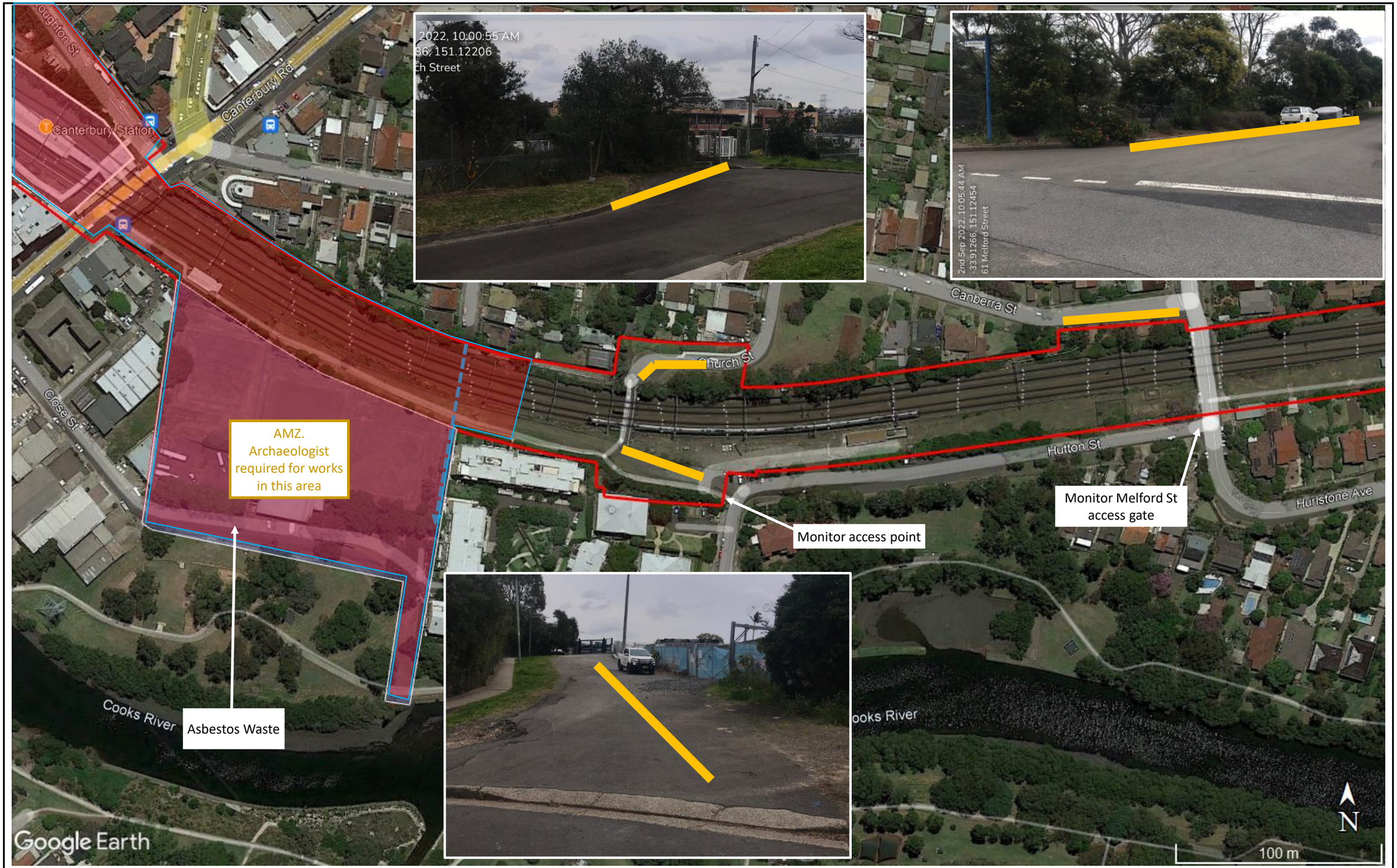
JOHN HOLLAND

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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

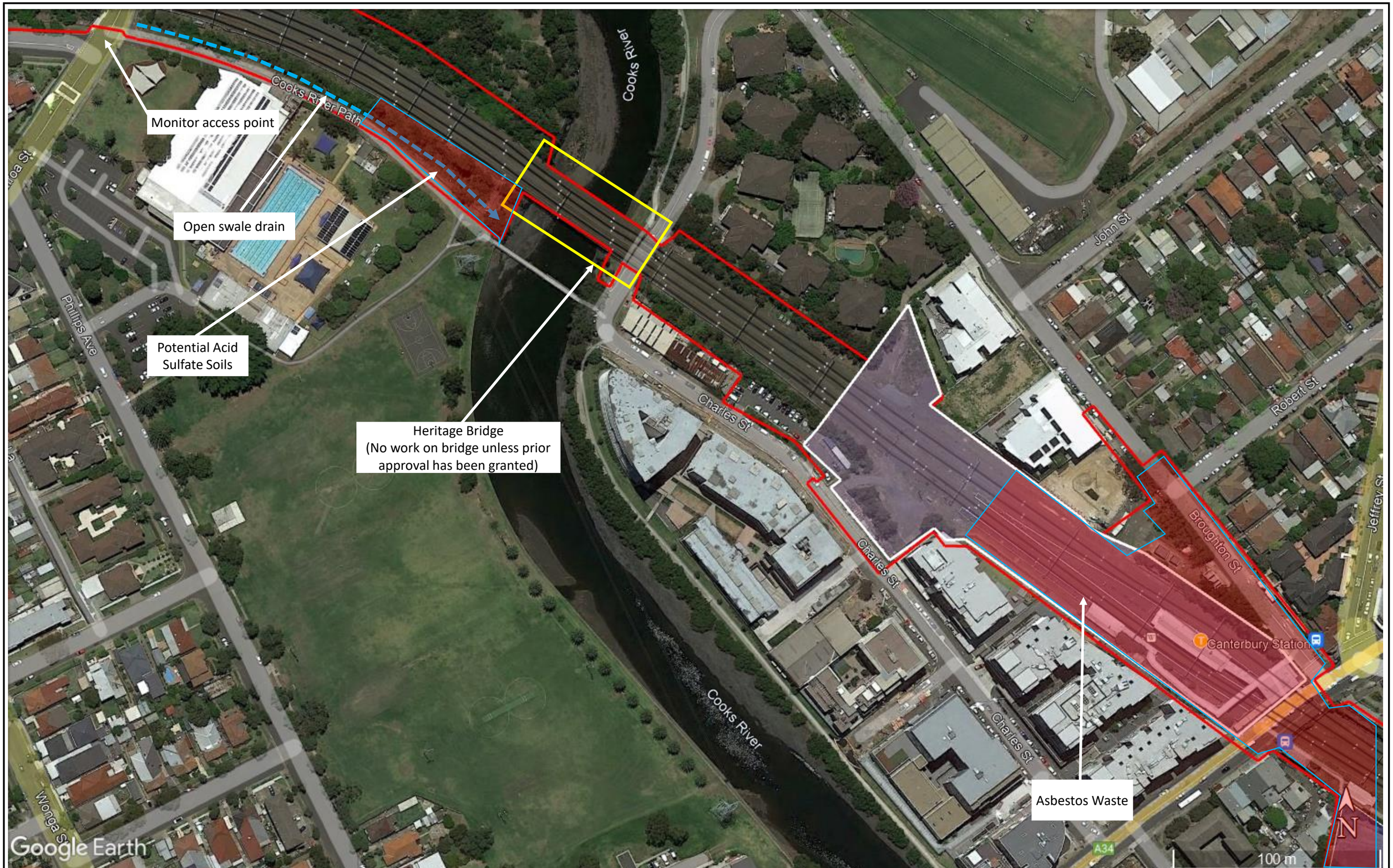
JOHN HOLLAND

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

REV	DESCRIPTION	DATE
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

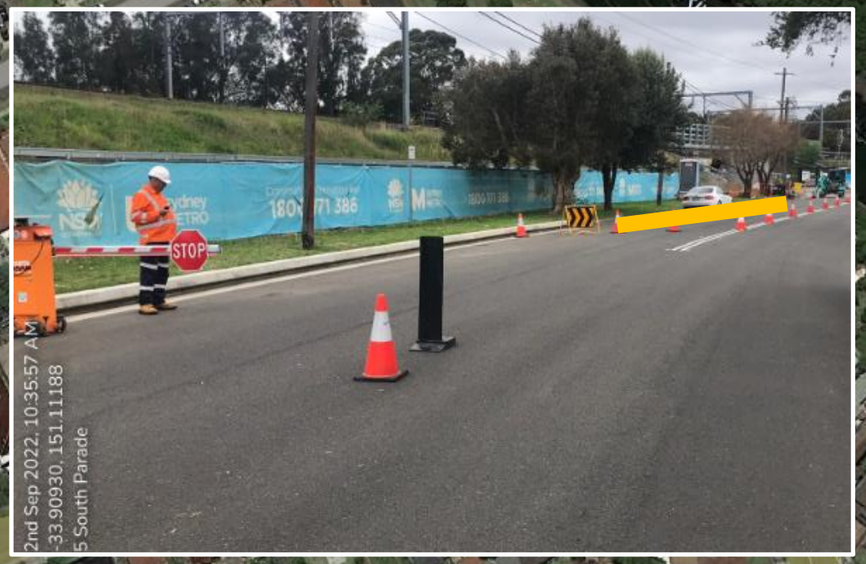
JOHN HOLLAND

CANTERBURY STATION & COOKS RIVER

CANTERBURY - SWMC

ENVIRONMENTAL CONTROL MAP

A3



Open swale drain

Restricted Solid Waste

Monitor access point

Monitor access point

Dwyer St
Moore St
Frederick St
Nowra Ln
N Parade
N Parade
S Parade
Park St
Wonga La
Wonga St
Walroa St
Phillips Ave
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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

S PARADE & NOWRA LANE

CAMPSIE - SWMC

ENVIRONMENTAL CONTROL MAP

A3

Monitor access point

Asbestos Waste

Wilfred Ave
Lilian St
Assets St
London St
Dispensary Ln
Campsie Station
Anzac Square
Anzac Mall
Beamish St
Anglo Rd
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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

CAMPSIE STATION

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
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

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
- TEC — Threatened Ecological Community

REV	DESCRIPTION	DATE
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

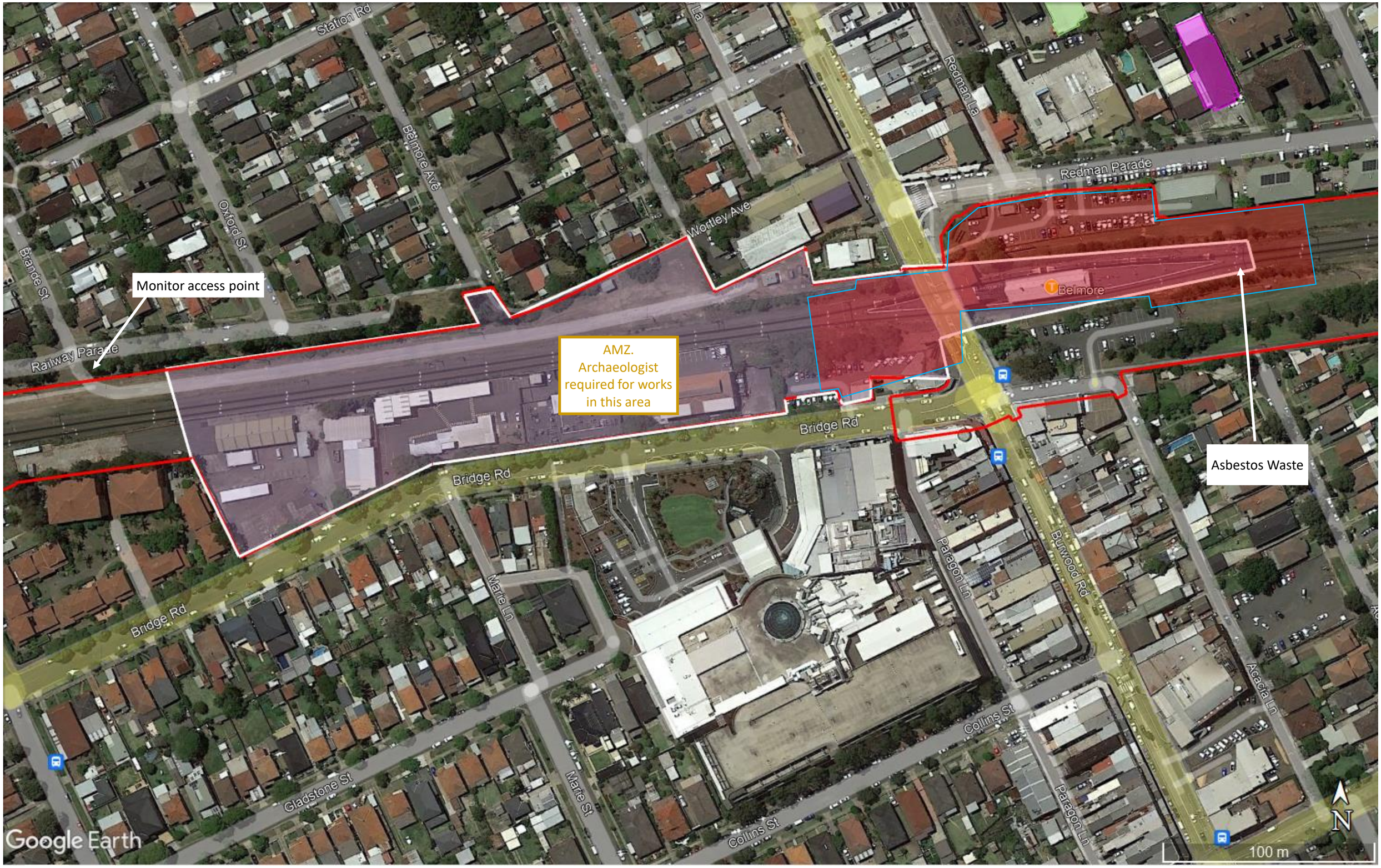
JOHN HOLLAND

BELMORET & REDMAN PDE

BELMORE - 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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

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
Gillies 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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

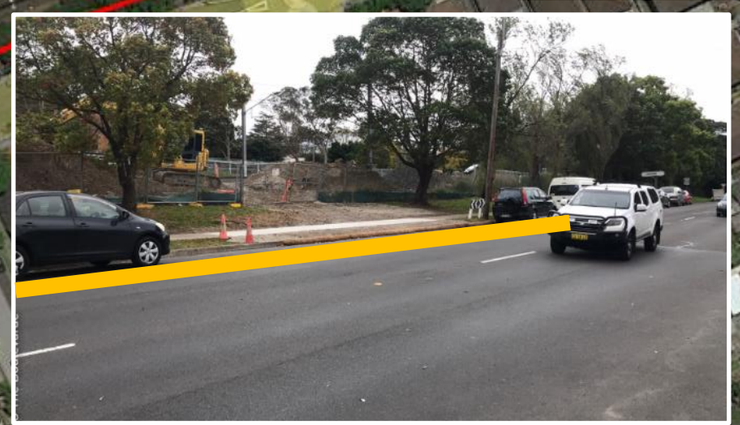
JOHN HOLLAND

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 St
Croydon La
Railway Parade
Lakemba Station
The Boulevarde
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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

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
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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

WILEY PARK STATION

WILEY PARK - SWMC

ENVIRONMENTAL CONTROL MAP

A3

Open culvert

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

Hazardous Waste

Monitor access point

Monitor access point

TEC

Punchbowl Laydown

Dudley St

Urunga Parade

Urunga Parade

Urunga Parade

The Boulevarde

Broadway

Dudley St

Rosemont St S

Robinson St S

Faux St

Hillcrest St

Renown

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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

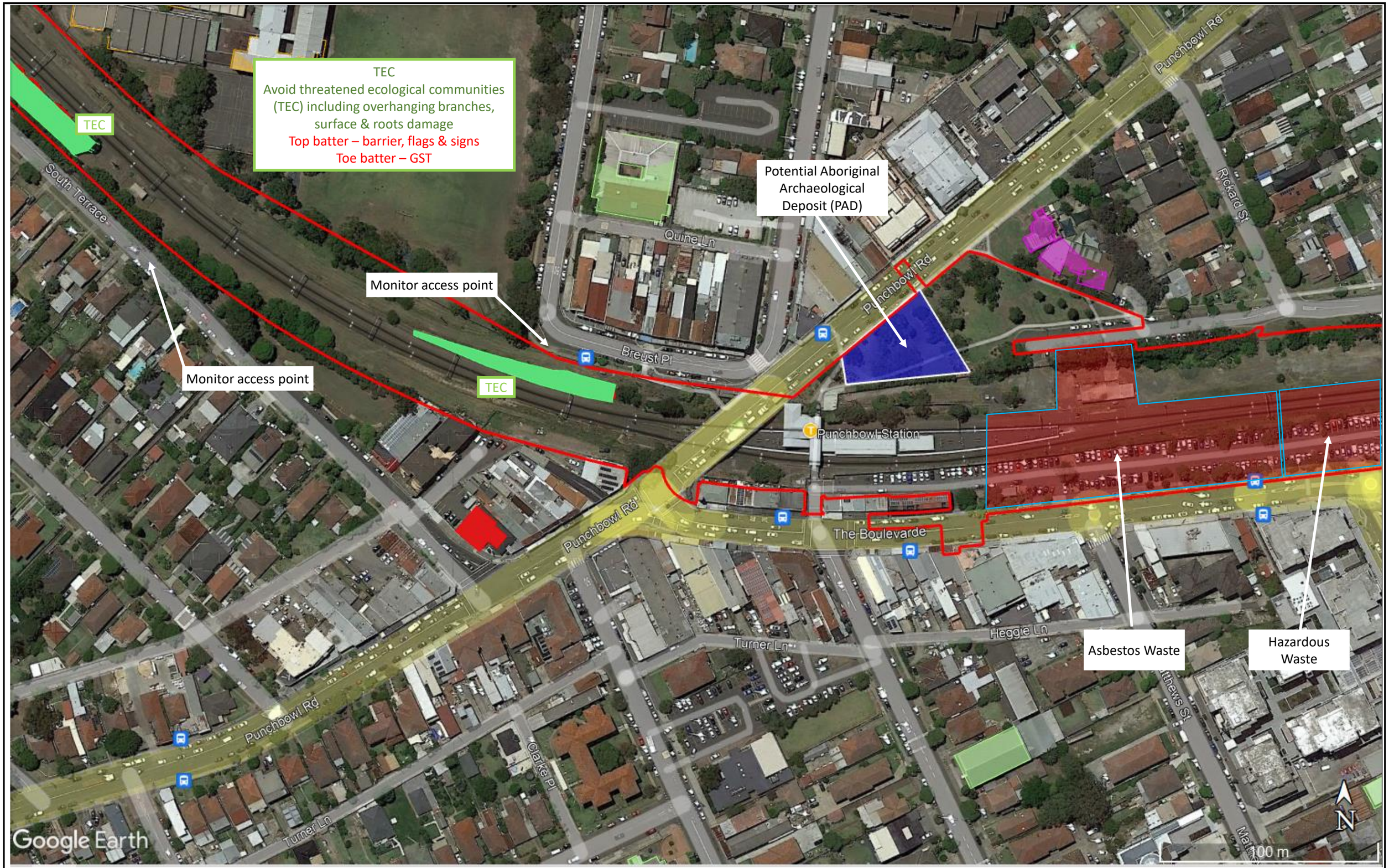
JOHN HOLLAND

WILEY PARK TO PUNCHBOWL STATION

PUNCHBOWL - 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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

PUNCHBOWL STATION

PUNCHBOWL - 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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

PUNCHBOWL TO BANKSTOWN

PUNCHBOWL - 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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

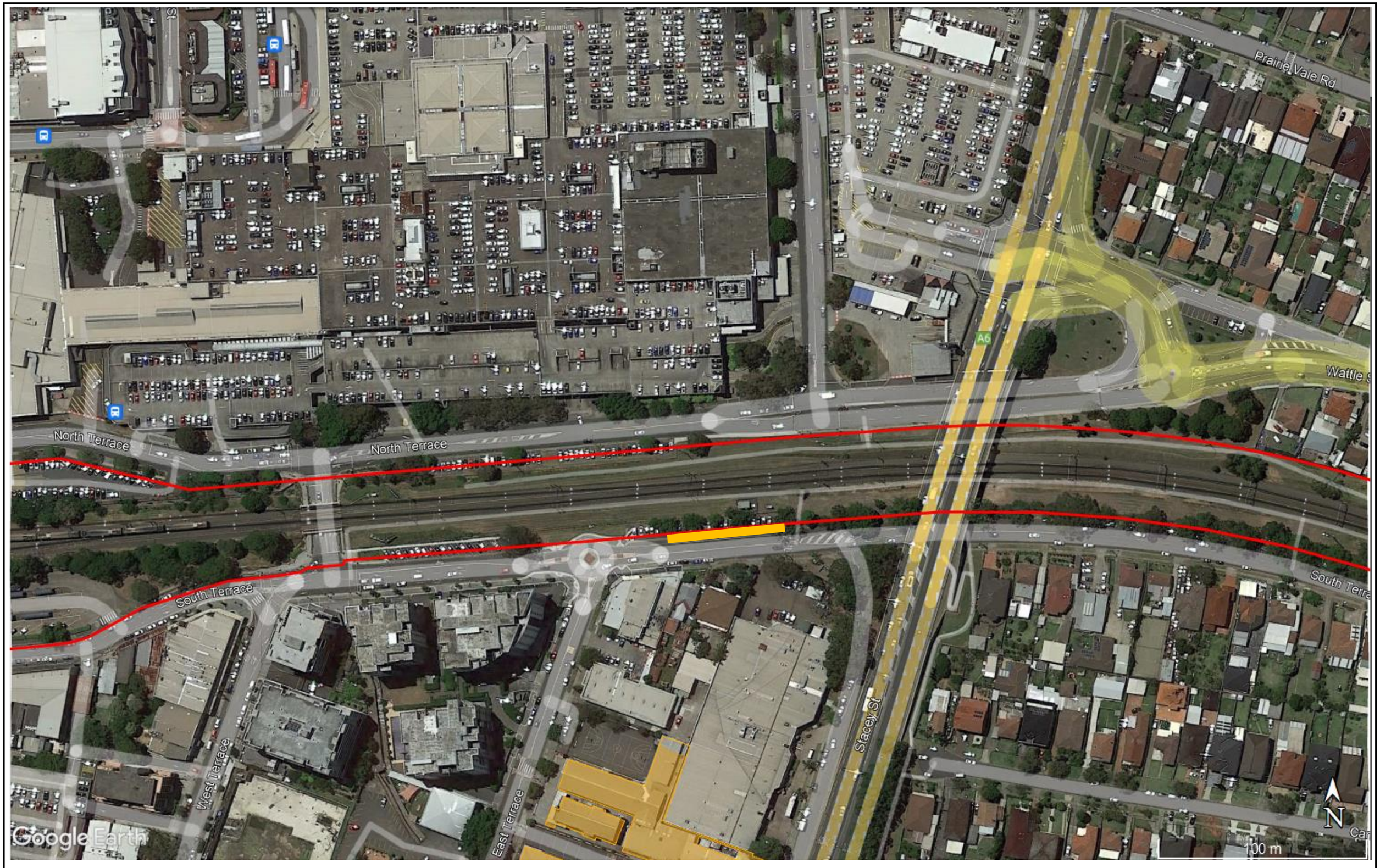
JOHN HOLLAND

PUNCHBOWL TO BANKSTOWN

BANKSTOWN - 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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

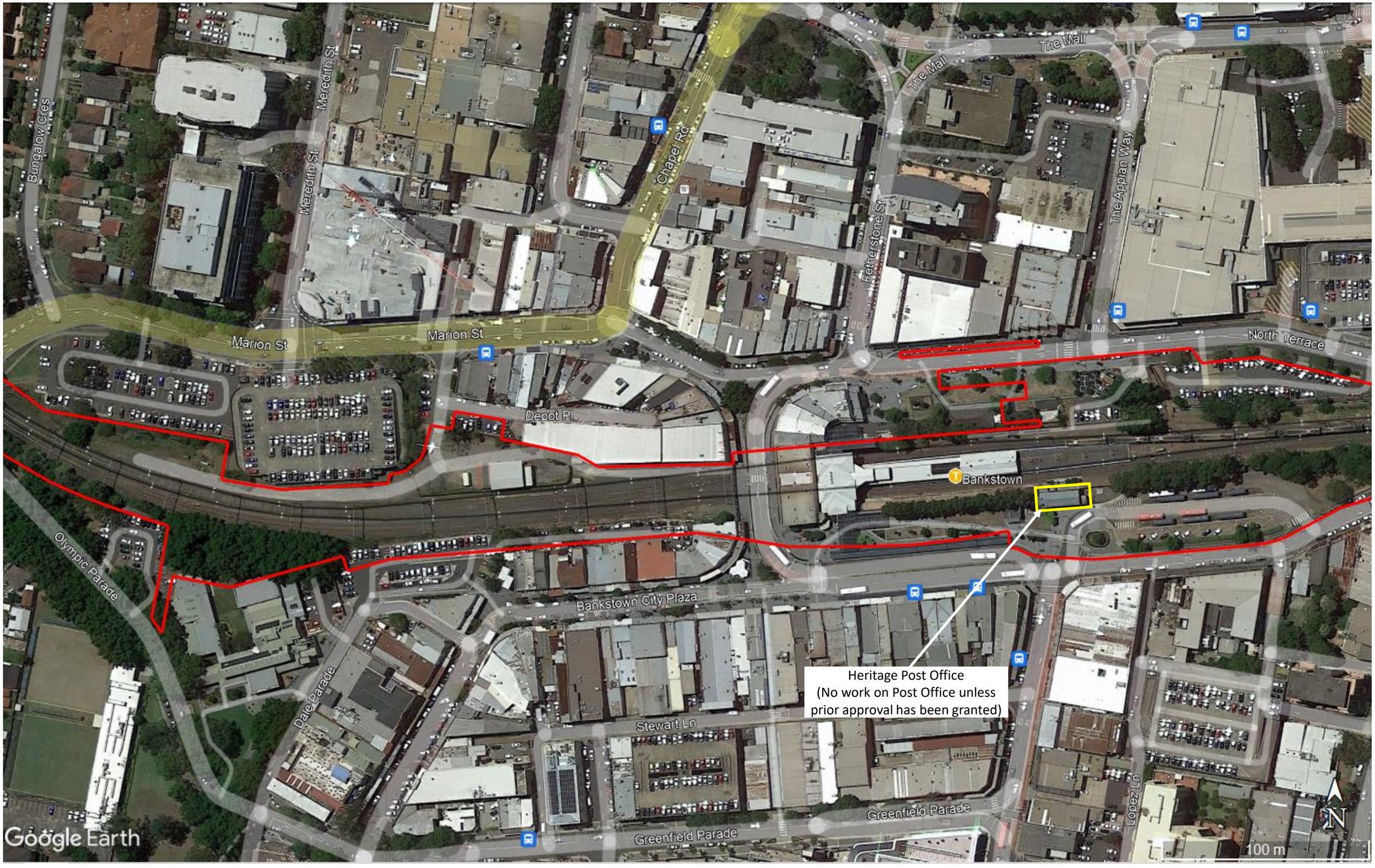
JOHN HOLLAND

SOUTH & NORTH TERRACE

BANKSTOWN - 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
1	Added Plant Offloading Locations	26/9/22
4	Including MAF at MSB	29/6/23
5	Including heritage sandstone garden bed at Wily Park Station city side	15/12/23

LAING O'ROURKE

JOHN HOLLAND

BANKSTOWN STATION

BANKSTOWN - SWMC

ENVIRONMENTAL CONTROL MAP

A3

APPENDIX 1

Possession plant parking for Canterbury Compound

REV	DESCRIPTION	DATE	REV	DESCRIPTION	DATE
0	Initial Submission	26/09/22	3	Including Station Bracket Scope and possession plant parking at Canterbury	23/06/2023
1	Added Plant Offloading Locations	18/05/23	4	Including Minor Ancillary Facility for MSB PC taking over	29/06/2023
2	General Updates: Plant Parking, Heritage Bridges & Contamination Areas	18/05/23			

LAING O'ROURKE

JOHN HOLLAND

SWMC

ENVIRONMENTAL CONTROL MAP

Cover Sheet | A3

LEGEND

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

LAING O'ROURKE

JOHN HOLLAND

Appendix 1 – Possession Plant Parking

Canterbury - SWMC

ENVIRONMENTAL CONTROL MAP

-	A3

APPENDIX 2

Metro Service Building (MSB) MAF

REV	DESCRIPTION	DATE	REV	DESCRIPTION	DATE
0	Initial Submission	26/09/22	3	Including Station Bracket Scope and possession plant parking at Canterbury	23/06/2023
1	Added Plant Offloading Locations	18/05/23	4	Including Minor Ancillary Facility for MSB PC taking over	29/06/2023
2	General Updates: Plant Parking, Heritage Bridges & Contamination Areas	18/05/23			

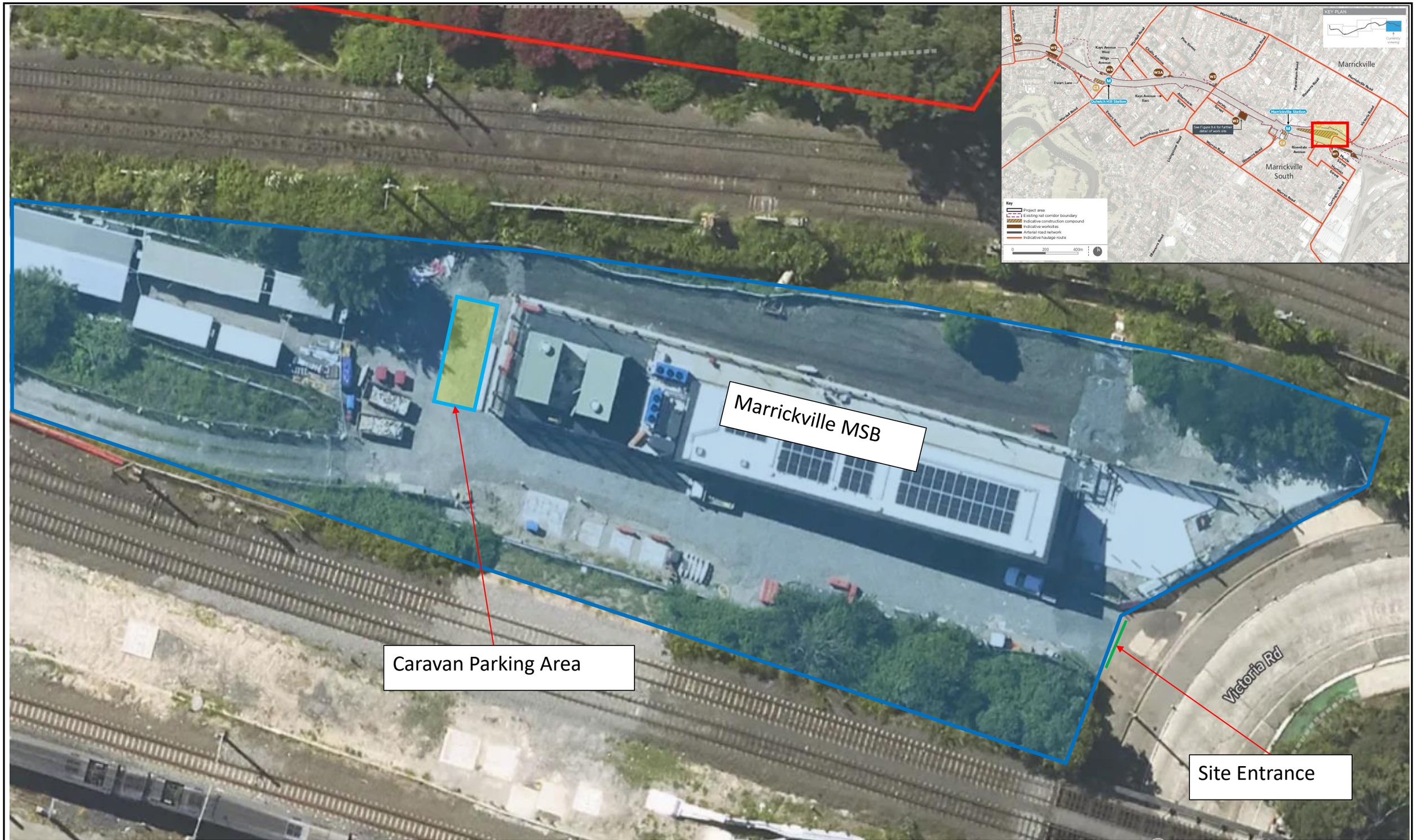
LAING O'ROURKE

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

JOHN HOLLAND

Appendix 2 – Dulwich Hill MSB

Dulwich Hill - SWMC

ENVIRONMENTAL CONTROL MAP

-	A3

LEGEND

Project Boundary

LAING O'ROURKE

JOHN HOLLAND

Appendix 2 – Hurlstone Park MSB

Hurlstone Park - SWMC

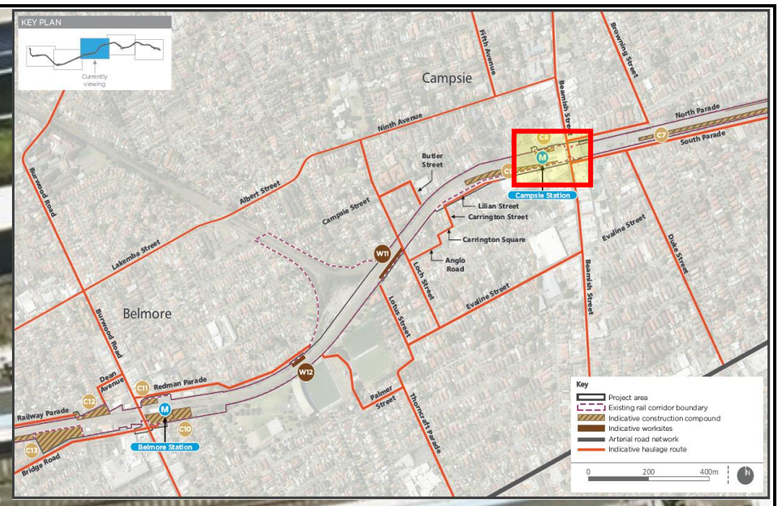
ENVIRONMENTAL CONTROL MAP

-	A3

Caravan Parking Area

Campsie MSB

Site Entrance



LEGEND

Project Boundary

LAING O'ROURKE

JOHN HOLLAND

Appendix 2 – Campsie MSB

Campsie - SWMC

ENVIRONMENTAL CONTROL MAP

-	A3

LEGEND

Project Boundary

LAING O'ROURKE

JOHN HOLLAND

Appendix 2 – Belmore MSB

Belmore - SWMC

ENVIRONMENTAL CONTROL MAP

-	A3

Caravan Parking Area

Site Entrance

Lakemba MSB

Railway Parade

Railway Parade

Lakemba railway station

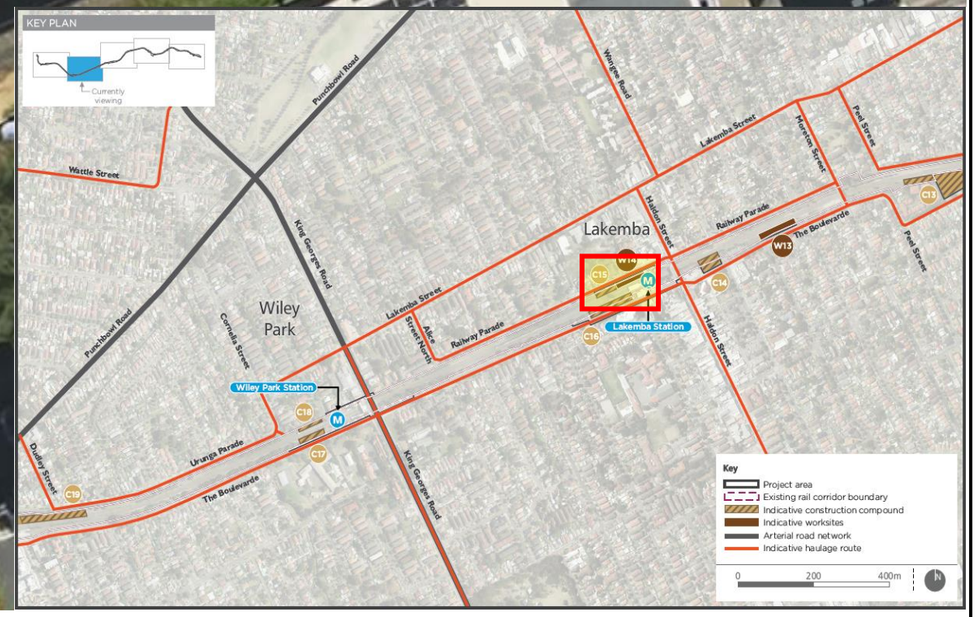
15-19

15-19

15-19

53

130



LEGEND

Project Boundary

LAING O'ROURKE

JOHN HOLLAND

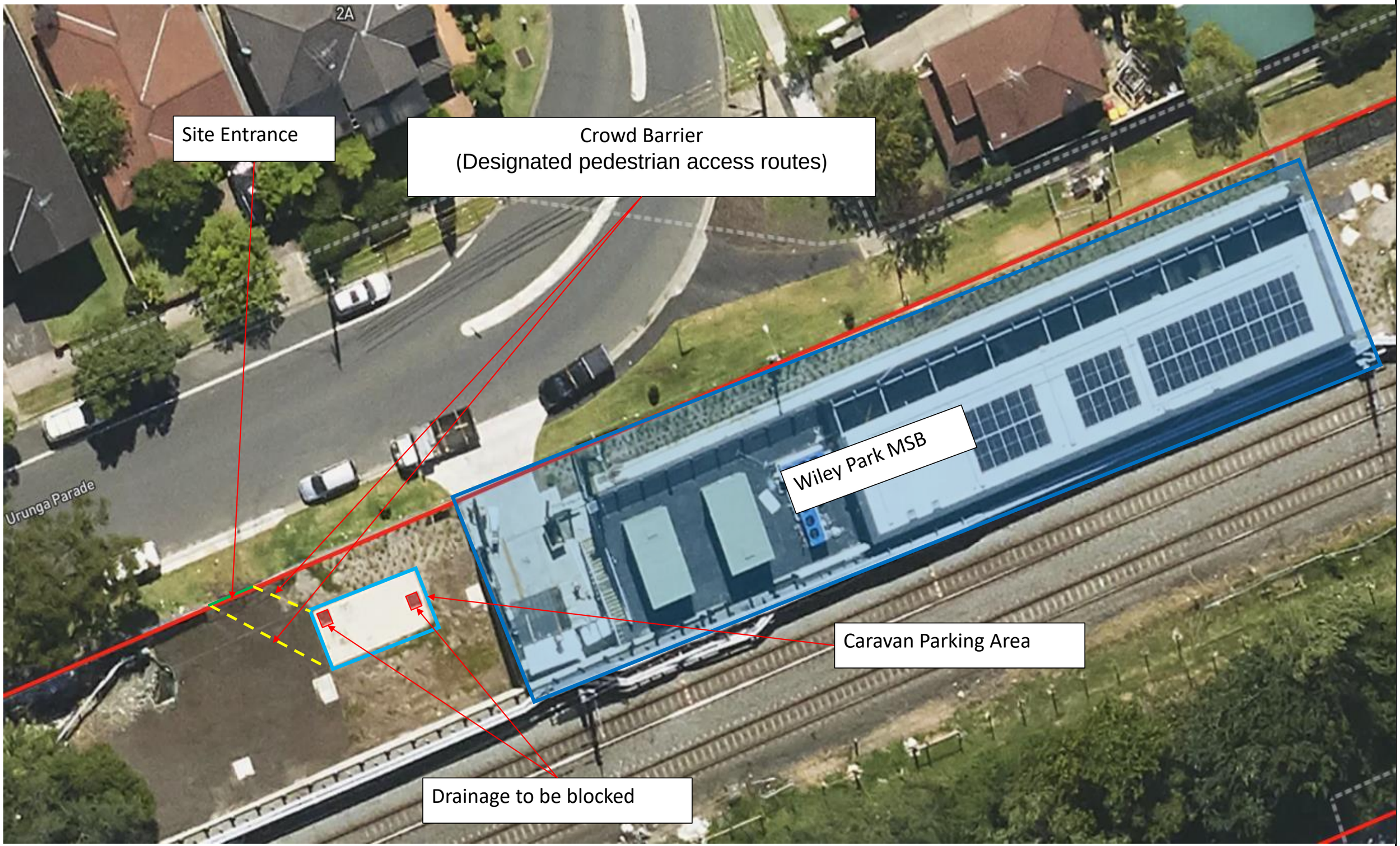
Appendix 2 – Lakemba MSB

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

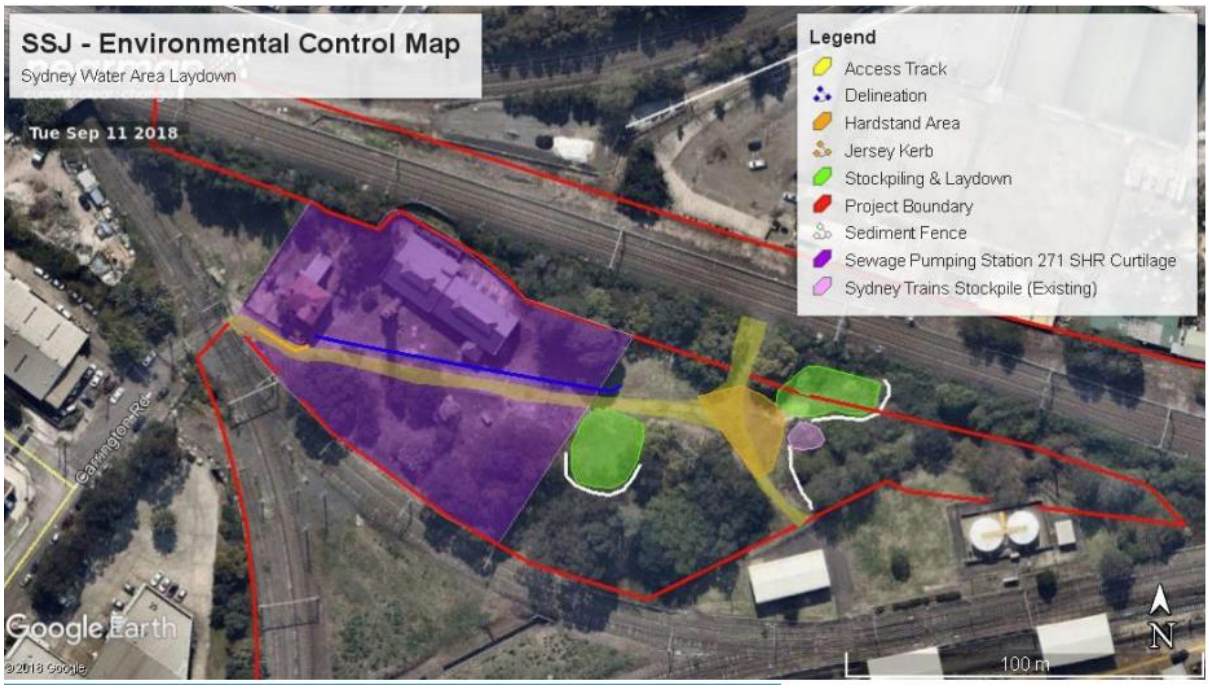
LEGEND

Project Boundary

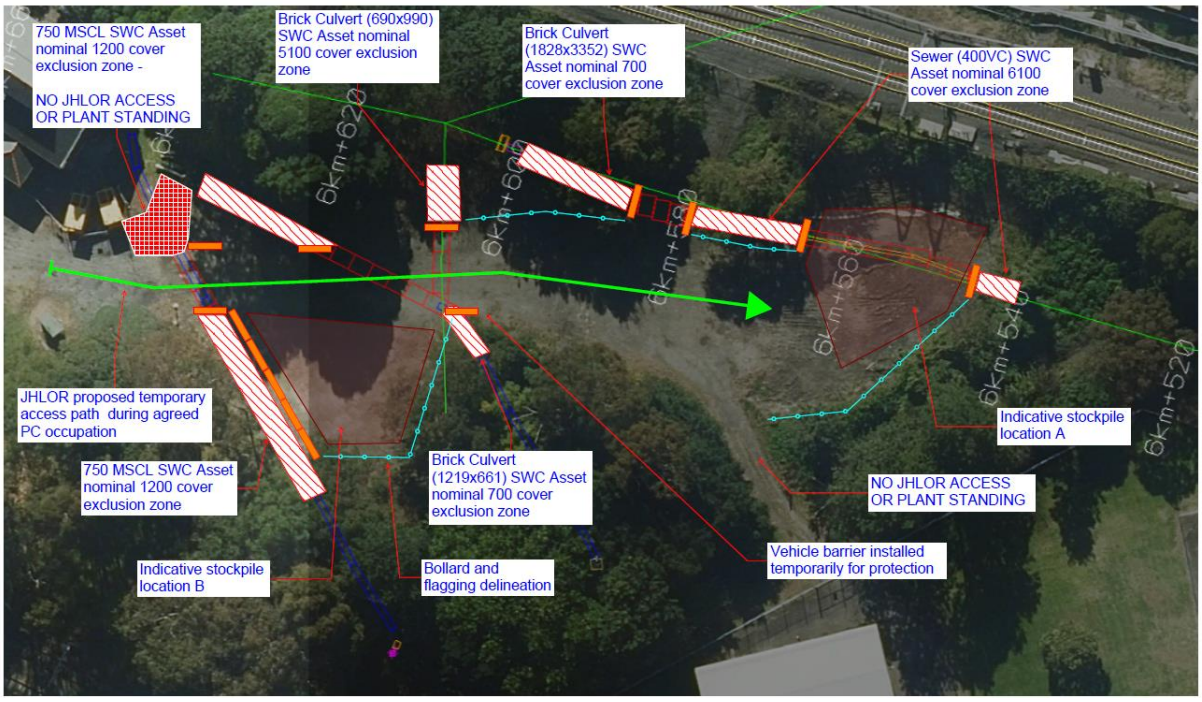
LAING O'ROURKE / JOHN HOLLAND	**Appendix 2 – Punchbowl MSB** Punchbowl - SWMC ENVIRONMENTAL CONTROL MAP	
	-	A3

Site Layout and controls

Environmental Control Plan



Site controls




Legend
Corridor Boundary
Proposed Ancillary Facility Boundary
Access / haul Road
Ablution block
Containers
Laydown area
Way St
Way St
Way St
24
24A
22F
22E
22D
22C
23
21
19
2
2A
4
6
1

APPENDIX 6 – Emergency Preparedness and Response

The types of environmental emergencies that could occur on this site are tabulated below. These are the key risks based on the project design components, site characteristics and locality.

Note: This plan is designed to supplement the Client's site emergency response plan/s where available. In case of conflict, the Client's plan will apply.
All incidents are to be reported to the Environmental Manager and Community Stakeholder Manager.

Emergency	Preparation	Response	Responsibility
Significant adverse dust event due to weather conditions: High winds	• Monitor meteorological conditions for the area - develop contingency for wind speeds in excess of 16m/s (55km/hr) • High wind 'stop works' protocols in place • Establish contingency strategy for additional dust control measures, additional water carts, dust suppressants, stockpile covers etc.	• Dust generating activities will cease under direction of the Environment Manager or Site Supervisor until adverse conditions subside. • Deploy additional mitigation measures to exposed areas, stockpiles and other dust generating items will be water sprayed or covered.	Site Supervisor Environmental Manager
Discovery of friable asbestos.	• Review previous land uses, environmental reports for potential for friable asbestos. • Include asbestos awareness in the site induction where the potential exists • Include contingency in relevant work procedures and SWMSs • Stop works where potential asbestos has been detected. • Identify potential service providers for asbestos control and removal.	• Quarantine suspected area • Cover or provide dust mitigation strategy • Engage licensed/approved removal and disposal organisation • Complete post removal verification	Construction Manager Site Supervisor Environmental Manager Safety Manager
Flooding	• Monitor meteorological conditions – develop contingency strategy for rainfall > 100mm in 24 hours • All chemicals, fuels and other hazardous substances to be in secured containers and stored within a sealable shipping container • Remove plant and equipment from low lying areas • Secure plant that cannot be removed	• Recover materials washed from site including sediment and other waste. • Check effectiveness of erosion and sedimentation devices and other flood controls, maintain where required and safe to do so.	Site Supervisor Environmental Manager

	• Review site drainage flow paths: • Redirect site drainage to prevent flooding of residential/business premises • Ensure site drainage does not concentrate surface flow • Review and address the potential for excess water entering the site • Review and maintain erosion and sedimentation controls		
Temporary erosion and sediment controls are damaged during rainfall.	• Plan controls to be suitable for expected conditions • Ensure sufficient materials, labour and plant are available for additional controls.	• A review of the site to be undertaken by an Environmental Manager and Site Supervisor. Controls to be repaired or replaced within 24 hours of detection, immediately if inclement weather current.	Site Supervisor Environmental Manager
Spill of hazardous or toxic substance (< 20L)	• Awareness training of appropriate response and procedures to be incorporated into Project Induction • Stop works within vicinity of impacted area if a spill occurs • SDS on site for all materials and kept up to date • Adequate supply of absorbent materials available in the site compound and on vehicles at work location	• Report spills immediately to Site Manager and/or the Project Environment Manager • Attempts to be made to limit or contain the spill using sand bags to construct a bund wall, use of absorbent material, temporary sealing of cracks or leaks in containers, use of geotextile or silt fencing to contain the spill. • Site Manager and Supervisors to coordinate the response, clean up and disposal of the material • Material to be disposed of in accordance with the manufacturers' recommendations and applicable legislation.	Site Supervisor Environmental Manager
Major spill of hazardous or toxic substance off site or to environmentally sensitive area (> 20L)	• Awareness training of appropriate response and procedures to be incorporated into Environmental and Safety Induction • SDS on site for all materials and kept up to date • Stop works within vicinity of impacted area if a spill occurs • Adequate supply of absorbent materials available in the site compound and on vehicles in work location	• Report spill immediately to Project Environmental Manager, Project Leader and/or Site Supervisor who will notify the Client • Attempts to be made to limit or contain the spill using sand bags to construct a bund wall, use of absorbent material, temporary sealing of cracks or leaks in containers, use of geotextile or silt fencing to contain the spill, transferring remaining material. • Implement procedures to notify the relevant authorities. • Site Manager to coordinate the response, clean up	Project Leader Construction Manager Site Supervisor Environmental Manager

	• Emergency telephone numbers for Emergency Response organisations/fire brigade prominently displayed around office and issued to supervisors • Initial contact to be made with relevant organisations at project commencement	• Fire brigade or emergency organisations should be called if spill cannot be controlled by site resources. • Evacuation procedures are to be implemented to remove non-essential personnel from the affected area • On site Client personnel are informed of the incident, internal reporting as per potential Class 1 matter. • Access and egress to the area is established to ensure the appropriate vehicles have effective access and congestion is minimised. • Senior Officer from fire brigade /emergency organisation assumes control of the operation with JHLOR personnel assisting as required. • Commence data gathering and investigation once emergency is contained	
Fire	• Awareness training of appropriate response and procedures to be incorporated into Environmental and Safety Induction • Fire extinguishers maintained, clearly labelled and distributed around site compound and vehicles • Training in the use of fire extinguishers and which one to use for each type of fire • Stop works within the vicinity if a fire is encountered • First Aid supplies are stocked and adequate • Emergency telephone numbers for Emergency Response organisations/fire brigade prominently displayed around office and issued to supervisors • Initial contact to be made with relevant organisations at project commencement	• For small fires, attempts to be made to extinguish the fire or limit its spread with available fire extinguishers or water hoses if appropriate. • Supervisor is to be informed immediately. • Supervisor to contact Client and external services where necessary (fire, ambulance) as a precautionary measure. • All personnel in the vicinity to be assembled in the Evacuation Assembly Area and a head count performed • Any resulting fuel or chemical spill to be handled as detailed above • Supervisor to coordinate with emergency services and provide assistance as required.	Site Supervisor Environmental Manager
Vibration causing structural damage	Choose correct plant when working near structures; minimise size and impact Use safe working distances during planning phase	Activities causing vibration would cease under direction of the Environment Manager or Site Supervisor. Any occupants of buildings may be evacuated with due	Environmental Manager Construction Manager

	Stop works where structural damage (or the potential for structural damage) has been identified Implement vibration monitoring at commencement of vibration generating works to ensure compliance with standards	consideration to safety, and the area secured to prevent unauthorised access. A structural assessment to be undertaken; and if any damage is associated with construction, rectification work would be agreed.	
Unapproved clearing / damage to protected vegetation – threatened/endangered species	Clearly demarcate site boundaries Clearly demarcate clearing areas and brief site personnel Identify/mark vegetation to be retained or that is protected. Identify species that may be impacted, include material within the project induction Included requirements within construction planning documentation. Stop works within area where a breach to the above may have occurred	Immediately cease activities Report incident immediately to Project Environmental Manager, Project Leader and/or Site Supervisor. Engage consultant to assess damage to vegetation and presence of any endangered or threatened communities.	Site Supervisor Environmental Manager
Injury/death to protected/endangered/threatened fauna	Identify potentially impacted species prior to commencement on site. Identify species that may be impacted, include material within the project induction Stop works within area Review/inspect vegetation to be cleared prior to clearing – utilise ecologist/spotter where there is the potential for endangered/threatened species Engage with local vet/WIRES representative on the appropriate contact/procedure Site procedure for the short term management of injured fauna	Immediately cease activities upon discovery of injured fauna Report incident immediately to Project Environmental Manager, Project Leader and/or Site Supervisor. Implement procedure for short-term stabilisation and transport to Vet or WIRES Undertake additional vegetation inspection to identify any remaining fauna prior to recommencement.	Site Supervisor Environmental Manager
Damage / destruction of indigenous heritage item	Ensure site investigations detail any heritage items on or in proximity to the site. Include awareness material within the project induction Develop a 'stop works' protocol for any heritage find on site.	Cease works and stabilise the area, under the direction of the Environmental Manager or Site Supervisor. The Environmental Manager is to report the remnants to the Client and regulatory authority. Request an archaeologist to assess the significance and archaeological potential of the uncovered feature.	Environmental Manager

Damage / destruction of European heritage	Ensure site investigations detail any heritage items on or in proximity to the site. Ensure exclusion zones are implemented around heritage structures/items. Work within Safe Working Distances as detailed in the CNVMP Undertake vibration monitoring as detailed in the CNVMP Develop a 'stop works' protocol for any heritage find on site.	Cease works and stabilise the area, under the direction of the Environmental Manager or Site Supervisor. Contact an archaeologist to assess the significance and archaeological potential of the uncovered feature.	Environmental Manager

APPENDIX 7 – Project Permits and Licences Register

Project Permit and Approvals Register	Applicable to the project (Yes / No)	Permit / licence / Approval Number / registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Environmental Planning and Assessment Act 1979							
Planning Determination under Part 5.1 of the EP&A Act TfNSW required approval of the Minister of Planning NSW under Section 115ZB of the EP&A Act	Yes	SSI_8256	MOD 1 determined 22/10/20	This approval lapses five (5) years after the date on which it is granted, unless works for the purpose of the CSSI are physically commenced on or before that date.	Construction Compliance Report to determine regular periodic status of compliance against the conditions of the planning approval and the approval to be closed out after completion of construction and operation phases to which the approval applies	JHLOR Project Environmental Manager	
Protection of Environment Operations Act 1997							
The S2B Project will be completed under an Environment Protection Licence, as required under Protection of Environment Operations Act 1997	Yes	Laing O'Rourke EPL 21147	The Laing O'Rourke EPL premise Maps were updated to include the Sydney Metro City and Southwest Sydenham to Bankstown project boundary between Marrickville and Bankstown.	Upon surrender by licence holder or when revoked by the NSW EPA. Anniversary date 17 January 2018 – licenced to be reviewed after 5 years.	JHLOR to submit a Licence Surrender Applications to the NSW EPA	Project Environmental Manager	Relevant EPL requirements will be briefed to all project personnel prior to and during construction as per the requirements stated in the Section 10 of this CEMP
Water Act 1912							
Section 10 Surface Water Licence	No						

Project Permit and Approvals Register	Applicable to the project (Yes / No)	Permit / licence / Approval Number / registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Part 5 Section 112 Groundwater Licence	No						
Water Management Act 2000							
Section 56 Access Licences	No						
Section 89 Water use approvals	No						
Section 90 Water management work approvals	No						
Section 91 Activity Approvals	No						
Fisheries Management Act 1994							
Division 3 (Sections 199, 200, 201) Dredging and Reclamation	No						
Section 205 Marine vegetation - regulation of harm Permit to Harm Marine Vegetation	No						
Section 220ZW Licence to harm threatened species, population or ecological community or damage habitat	No						
Sydney Water Act 1994							
Section 49 Offence to discharge into works - Trade Waste Permit	No						
Permit to Use Approved Metered Standpipes on Sydney Water Hydrants	Yes	JHLOR Subcontractors may work under these approvals – copies of approvals to be obtained	Details to be confirmed once the approval is in place on the Project	Details to be confirmed	Details to be confirmed	Project Construction Manager	Requirements will be briefed to all project personnel prior to and during construction as per the

Project Permit and Approvals Register	Applicable to the project (Yes / No)	Permit / licence / Approval Number / registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
		upon engagement of subcontractors and this register will be updated accordingly					requirements stated in the Section 12 of this CEMP
Section 31 Offence to discharge into works - Trade Waste Permit	No						
Dangerous Goods (Road and Rail) Transport Act 2008							
Section 6 Licensing of vehicles transporting dangerous goods	Yes	JHLOR Subcontractors will work under these approvals – copies of approvals to be obtained upon engagement of subcontractors and this register will be updated accordingly	Details to be confirmed once the licence is in place on the Project	Details to be confirmed	Details to be confirmed	Project Environmental Manager	Requirements will be briefed to relevant project personnel
Section 7 Licensing of drivers transporting dangerous goods	Yes	JHLOR Subcontractors will work under these approvals – copies of approvals to be obtained upon engagement of subcontractors and this register will be updated accordingly	Details to be confirmed once the licence is in place on the Project	Details to be confirmed	Details to be confirmed	Project Environmental Manager	Requirements will be briefed to relevant project personnel
Local Government Act 1993							
Section 68 - What activities, general, require the approval of council	No						

Project Permit and Approvals Register	Applicable to the project (Yes / No)	Permit / licence / Approval Number / registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Section 68A - Operation of a system of sewage management	No						
Roads Act 1993							
Section 138 Works and structures - permit to undertake works to roads	Yes	TBC	Details to be confirmed once the licence is in place on the Project	Details to be confirmed	Details to be confirmed	Project Construction Manager	Requirements will be briefed to relevant project personnel
National Parks and Wildlife Act 1974							
Section 90 Aboriginal heritage impact permit	No						
Heritage Act 1977							
Section 60	No						
Division 3 Applications for approval	No						
Section 139 Excavation permit	No						
Marine Safety Act							
Section 29 Types of marine safety licences	No						
Management of Waters and Waterside Lands Regulations							
Division 3 Occupation of Waters	No						
Rural Fires Act 1997							
Section 89 Issue of permits (includes "hot works" which would constitute lighting a fire)	No						
Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)							

Project Permit and Approvals Register	Applicable to the project (Yes / No)	Permit / licence / Approval Number / registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Include details of approvals under this Act where applicable	No						
Other							
List other relevant legislation here							

APPENDIX 8 – Environmental Incident Investigation Guidelines

Class 1 incidents shall be subject to an ICAM or Tap Root investigation. The following section outlines the environmental incident and complaint investigation. The actual detail required will vary depending on the class of the incident. In any case, form E-T-8-1222 Environmental Incident and Complaint Report is to be used to document the incident.

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

Step 2 - Observation and information gathering.
The first priority is to understand the incident and how the incident occurred.

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

Collect related documentation - Attach additional material as appropriate such as Work Method Statements, JSEA's, ERAPs, Erosion and Sediment Control Plans, Risk Assessments, induction records, toolbox talks, pre-start, environmental training records, subcontractor/Client incident report, relevant design documentation, maintenance records.

Step 3 - Give detailed description of the incident

- Outlined exactly what happened and give the following details as applicable:
- Area or people affected and pollutant type as appropriate
- Time, date and weather conditions
- Plant, equipment, organisations involved
- Potential stakeholders involved
- Describe the nature of the incident including:
- Breach of licence condition, Act or regulation
- Discovery of cultural heritage item, artefact, etc.
- 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:
- Notify relevant parties
- Contain pollution or clean up affected area
- Repair to environmental controls
- Rectify damage and remediate the affected area

Step 4 - Undertake basic level incident analysis
List the elements involved including people, equipment and environment (weather conditions), procedures, organisational elements involved in the incident. List the essential and contributing factors for the items above.

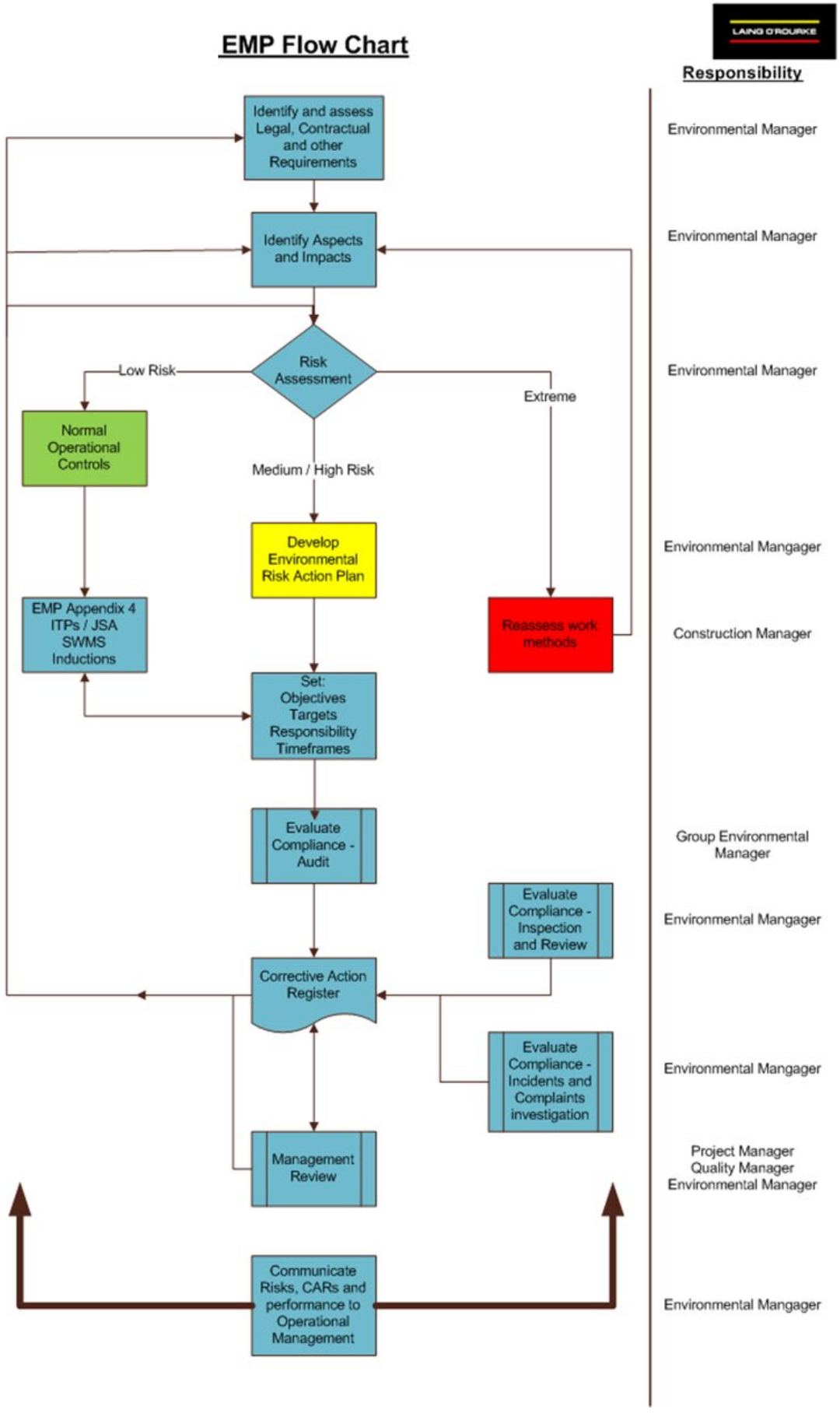
- **Step 5** - Identify the corrective and preventative actions.
- Change to equipment/machinery design / maintenance
- Improve environmental control measures
- Implement additional resources
- Change to work methods, procedures or processes
- Change or additional induction training
- Address organisational issues

Step 6 - Implement the corrective and preventative actions outlined above

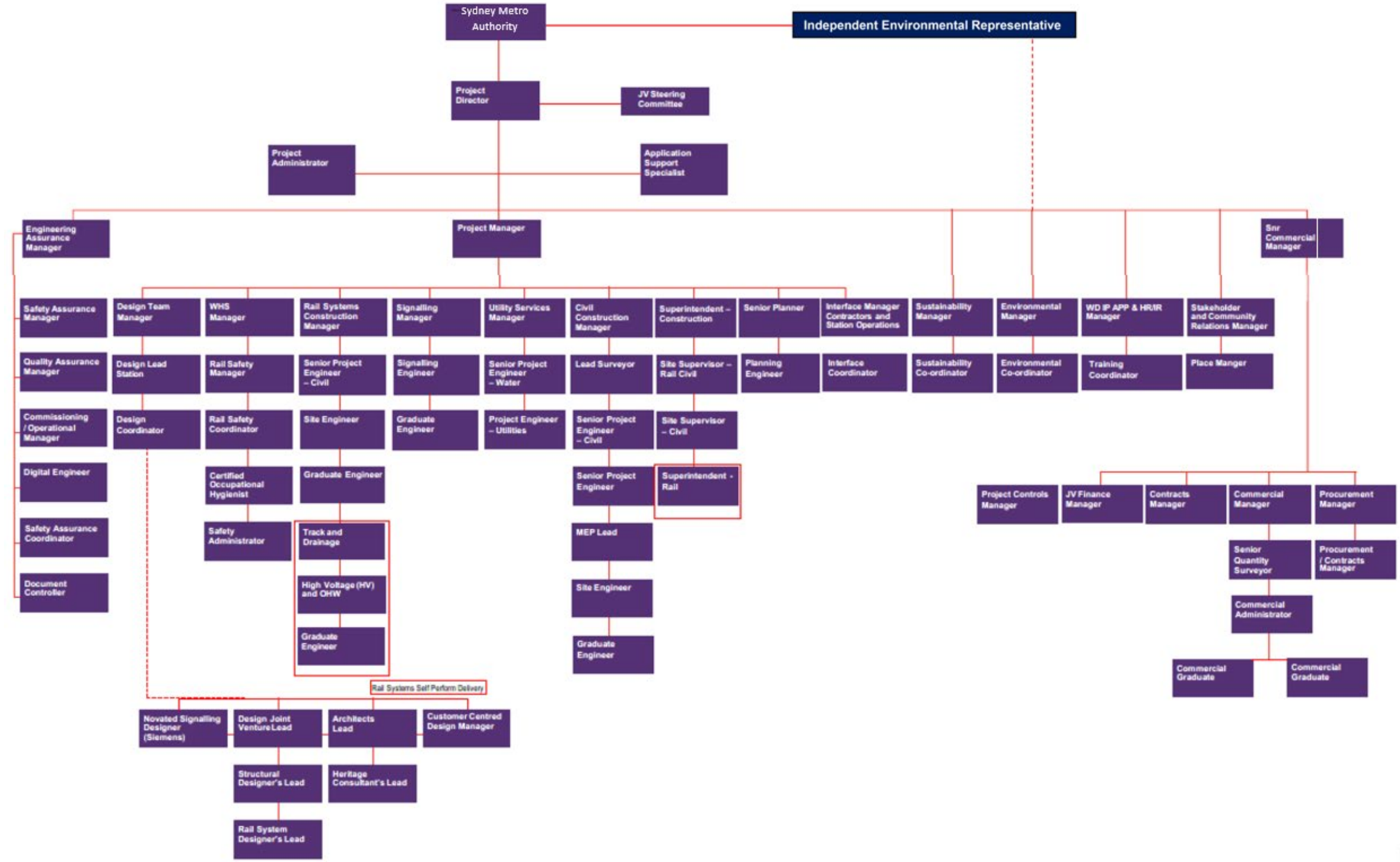
- Outline responsibilities and accountabilities
- Obtain relevant approvals for the corrective and preventative actions (i.e. Regulatory Authority or Client requirement)
- Provide proposed completion dates for the approved actions
- Document actions implemented and close out

Note: where a Class 1 Incident has occurred the HSE Director will initiate the investigation and allocate responsibilities, an external consultant may be engaged. Authorities are to be notified in accordance with the legislative periods in the applicable state.

APPENDIX 9 – EMP Flowchart



APPENDIX 10 – Organisation Chart



APPENDIX 11 – Sydney Metro Environment & Sustainability Statement of Commitment

Environment & Sustainability Statement of Commitment

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.
- 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 measureable 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.

Jon Lamonte
Chief Executive, Sydney Metro

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

APPENDIX 12 – Stakeholder Consultation Matrix

Condition of Approval SSI 8256	CEMP Document	Agency	Consultation Comments	Status	Comments
C3(a), C6	Construction Noise and Vibration Management Plan (including the Construction Monitoring Program)	City of Canterbury Bankstown	Building damage vibration goals: At locations where the predicted and/or measured vibration may cause damage to buildings, a condition report should be prepared. BEW Presentation given to CCBC on 10/09/2021 regarding BEW, traffic, access and pre-construction activity. A presentation was also given to CBCC on 16/09/2021 regarding BEW the CHMP, CSWMP and CNVMP. CCBC consulted in relation to the CHMP. CSWMP and the CNVMP for the Bankstown Early Works due to works in Council area. BAC James.Magsipoc@cbcity.nsw.gov.au Monday, 8 August 2022 12:04 PM Council had a review of the Metro Construction Noise and Vibration Management Plan. Have nothing major to comment on, it overall looks satisfactory and suitable for its purpose.	Implemented	Section 4.6 of the CNVMP updated Questions were resolved during meeting. No comments of were made on the CHMP, CNVMP and CSWMP,
		Inner West Council	If and when an EPL licence is granted for Sydney Metro's Principal Contractor, Inner West Council would like to be informed of the specific changes this has on the Noise and Vibration Management Plan (Section 2.3, p20). BAC No comments	Implemented	A copy of the JHLOR EPL (EPL 21147), which covers the S2B Project extents (Sydenham to Bankstown Rail Corridor) can be found at the below link. This EPL was granted prior to writing the CNVMP, as such all relevant requirements of the EPL have been included within the CNVMP that IWC has reviewed. https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21147&id=21147&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued
			What constitutes the limits of Sydney Trains EPL 12208? Would any interface with council roads/footpaths not be covered under this EPL?	Implemented	JHLOR will not be working under the Sydney Trains EPL (12208). It is noted that other packages of work within the Sydenham to Bankstown Project may use the Sydney Trains EPL – however this is not applicable to the JHLOR CNVMP. For information on EPLs used by other packages please direct any questions to Sydney Metro.
			In Appendix A (Conditions of Approval), conditions E23 and E25 (p82-83) pertaining to out-of-hours work state that community consultation will take place to discuss respite periods and notice periods for out-of hours work, and that the outcomes of community consultation are to be provided to the EPA. Inner West Council will want to be notified of these outcomes.	Implemented	JHLOR will provide any information gained regarding preferred respite periods – this consultation is still to occur.
			As the review period for the NVMP is 6 months, will the review date on the front page be changed to 6 months after this revised version is issued?	Implemented	Reviews to be carried out every 6 months and the revision details updated on the front page of the plan to reflect the review dates.
C3(b), C6	Construction Soil and Water Quality Management Plan (including the Construction Monitoring Program)	Environment Energy and Science Group (EESG) (formerly Office of Environment and Heritage)	The EESG will not be providing comments on the sub-plan.	N/A	
		Natural Resources Access Regulator (NRAR) (formerly Department of Industry) (also a requirement of REMM FHW4)	NRAR do not have any comments on the Plans provided. NRARs jurisdiction is water licencing and approvals and controlled activities.	N/A	
		City of Canterbury-Bankstown	CCBC do not have any comments on the CSWMP. BAC	N/A	

			James.Magsipoc@cbcity.nsw.gov.au Monday, 1 August 2022 9:03 AM Council had a review on these Construction Soil and Water Management Plan and there is nothing major to comment on and overall it looks quite good. Consultation with CCBC is underway in relation to the CSWMP for the BAC. Records would be made available upon request and included in the final revision of the CEMP.		
		Inner West Council	Provision of Water Balance Study	Implemented	The Water Balance Study forms part of the Sustainability Management Plan. The Strategy will be provided to Council for information.
			Water quality testing – targets should use those from Botany Bay and Catchment Water Quality Improvement Plan	Implemented	Details have been included in Section 6.2.3 of the CSWMP in the event that discharge is required by the project.
			The plan references the 'draft Overland Flow Study Canterbury LGA Cooks River Catchment (Cardno 2016)'. Is there a more current Flood Management Study?	Implemented	Study has been referenced as per the EIS. No further studies appear to have been published
			IWC prefers green infrastructure/WSUD rather than the Stormfilter cartridges proposed.	Implemented	Section 6.1.4 CSWMP updated
			Seedbank from remnant vegetation in soil at Dulwich Hill Station. Refer 'Missing Jigsaw Pieces of the Cooks River Valley' (Ondinea D., Benson, D. and Bear, V.) Dulwich Hill Station is in the Wildlife Corridor and Bandicoot Protection Area as per Marrickville LEP and DCP. Inner West population of Long-nosed Bandicoots is listed as threatened in the Biodiversity Conservation Act (2016). * Refer Biodiversity section, Marrickville DCP. Bandicoot protection measures must be put in place Add potential impact of loss of seedbank in topsoil. <u>BAC</u> No comments	Implemented	Details included in the Appendix 4 (ERAP 1) of this CEMP for protected species Section 6.1.1 and Section 6.1.4 of the CSWMP have been updated in regards to the protection of seeds within the topsoil. It is noted that Dulwich Hill Station is outside the scope of the S2B works.
C3(d), C6	Construction Heritage Management Plan Note: submitted CHMP rev08 for comment due to scope changes within SHR curtilage and Archaeological Management Zones	Heritage Council	Dear Mr. Keegan Thank you for your email dated 25 November 2020 inviting comments from the Heritage Council of NSW on the Construction Heritage Management Plan for the above State Significant Infrastructure (SSI) proposal. The South West Metro Corridor includes several State Heritage Register (SHR) listed placed located within or near the proposed project area including: • Marrickville Railway Station Group (4801091) • Old Sugarmill (00290) • Canterbury Railway Station Group (01109) • Belmore Railway Station Group (01081) The following s170 items are located within and near the project area: RailCorp: • 12 items Sydney Water: • Interwar water pumping station – Item No. 4570136 Ausgrid: • Electricity Substation no. 275 – Item No. 3430425 There are also several locally listed heritage places within and adjacent to the site listed on the Marrickville LEP 2011 and Canterbury LEP 2012. The Construction Heritage Management Plan to guide the works required for South West Sydney Metro has been reviewed. Please note that the Construction Heritage Management Plan supplied by Sydney Metro for the same SSI (8256) also lists the Sewage Pumping Station (SHR 01342) as being affected by the project proposal, which has been omitted from this document. It is recommended that this item be included as part of this report. HNSW notes the conclusion in the CHMP that impacts to potential archaeological resources are expected to be negligible to minor (Section 2.3.3) and that impacts to archaeology would be managed through archaeology specific documents prepared for the project such as the AARD and AMS documents as necessary. The submitted CHMP is considered satisfactory to guide the works required the South West Metro Corridor Works and the applicant is advised to follow the recommendations therein.	Implemented	Noted. Potential impacts to Sewage Pumping Station 271 (SHR 01342) and Lakemba Water Pumping Station (WP0003) (Sydney Water S170 4570136) were included in the HIA prepared for S2B (Appendix D). Management of potential impacts to the heritage items have been included in this CHMP. It is noted that there will be no direct impacts to Ausgrid or Sydney Water heritage items and therefore consultation is not necessary. Sydney Trains (Railcorp) has been consulted through the detailed design process. As such there is no need to consult through this CHMP.

			As the site contains local heritage items, and other local are in the vicinity, advice should be sought from the relevant local councils. It is recommended that RailCorp, Sydney Water and Ausgrid be consulted for comment on items from their s170 registers. BAC Submitted 22/07/2022 Response received 12/08/2022 Refer to Letter DOC22/664659-1 from Rochelle Johnston Senior Manager – Major Projects Heritage NSW As delegate of the Heritage Council of NSW 11 August 2022		
		City of Canterbury Bankstown	Hi all, Not very many comments from us, just a couple of things: **Heritage Management Plan** In the event of Unexpected Finds of Aboriginal cultural material, Sydney Metro should notify the Canterbury Bankstown Council Aboriginal and Torres Strait Islander Reference Group. BAC Comments not received by time of publication	Implemented	Noted. Recommendation added to the Aboriginal management of unexpected finds (Section 6.1.3).
		Inner West Council	Hi Ken I have reviewed the CHMP, and the following issues have been identified: **Table 6.2 (p. 62):** Amend 'could' to 'shall' **Table 7-1 Role and Responsibilities:** The responsibility for advice regarding built heritage should rest with a conservation architect BAC niall.macken@innerwest.nsw.gov.au Tuesday, 9 August 2022 1:40 PM I have reviewed the updated document (Southwest Metro Corridor – Construction Heritage Management Plan; SMCSWSSJ-JHL-WEC-EM-PLN-000013) and have no additional comments.	Implemented	Noted. Responsibility of the conservation architect has been updated.

Note 1: Further details are contained within the specific documents to be reviewed.

APPENDIX 13 – Environmental Audit Schedule

Refer to Section 18 for a description of the Internal Audit process.

			2021												2022											
			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**																								
JHLOR General HSEMS or HSEMS with Environmental Management Plan focus	TfNSW or Parent Company	6 monthly (biannually)	X	X						P					P										P	

			2023												2024											
			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**																								
JHLOR General HSEMS or HSEMS with Environmental Management Plan focus	TfNSW or Parent Company	6 monthly (biannually)		P									P			P						P				

Note: To limit social interactions as part of JHLOR's COVID-19 site management requirements, some audits may be postponed where appropriate

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 Inspections

APPENDIX 14 – Compliance Matrix

Table 18 - Planning Approval Compliance Matrix

Condition Reference	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 21
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 21
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 21
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 21
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 21
A21	Boundary screening required under Condition A20 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.	Section 21
A22	Work must not commence until an ER has been approved by the Planning Secretary and engaged by the Proponent.	Section 7
A23	The Planning Secretary's approval of an ER must be sought no later than one (1) month before the commencement of Work.	Section 7

Condition Reference	Condition Requirements	Document Reference
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 7
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 7
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 16
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 16

<table>
<tr><th>Condition Reference</th><th>Condition Requirements</th><th>Document Reference</th></tr>
<tr><td>A31</td><td>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.</td><td>Section 16</td></tr>
<tr><td>A32</td><td>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.</td><td>Section 16</td></tr>
<tr><td>A33</td><td>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.</td><td>Section 18</td></tr>
<tr><td>A34</td><td>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.</td><td>Section 18</td></tr>
<tr><td>A35</td><td>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.</td><td>Section 18</td></tr>
<tr><td>A36</td><td>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.</td><td>Section 17</td></tr>
<tr><td>A37</td><td>Subsequent notification must be given, and reports submitted in accordance with the requirements set out in Appendix A</td><td>Section 17</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 the Project CEMP.
The S2B Compliance Matrix 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 18.1</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 subplans</th><th>Relevant Government Agencies to be consulted for CEMP subplans</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>Consultation with the relevant government agencies has occurred in accordance with the Consultation Matrix as shown in Appendix 12.</td></tr>
</table>

<table>
<tr><th>Condition Reference</th><th>Condition Requirements</th><th>Document Reference</th></tr>
<tr><td>C4</td><td>The CEMP Sub-plans must be prepared in accordance with the CEMF.</td><td>Refer to Construction Air Quality Management Plan, Construction Noise and Vibration Management Plan (CNVMP), Construction Soil and Water Management Plan (CSWMP), Construction Waste & Recycling Management Plan (CWRMP), Construction Spoil Management Plan (CSpMP), and Construction Heritage Management Plan (CHMP)</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 CNVMP, CSWMP, CWRMP, CSpMP, and CHMP
Appendix 12</td></tr>
<tr><td>C6</td><td>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.</td><td>Section 8.1</td></tr>
<tr><td>C7</td><td>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</td><td>Section 8.1</td></tr>
<tr><td>C8</td><td>The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of Construction of the CSSI against the predicted performance.
<table>
<tr><th>ID</th><th>Consultation required for Construction Monitoring Programs</th><th>Relevant Government Agencies to be consulted for Construction Monitoring Programs</th></tr>
<tr><td>a)</td><td>Noise and Vibration</td><td>Relevant Council(s)</td></tr>
<tr><td>b)</td><td>Water Quality</td><td>Relevant council(s)</td></tr>
</table></td><td>Refer to CNVMP, CSWMP, CWRMP, CSpMP, and CHMP</td></tr>
<tr><td>C9</td><td>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.</td><td>Refer to CNVMP, CSWMP, CWRMP, CSpMP, and CHMP
Appendix 12</td></tr>
</table>

Condition Reference	Condition Requirements	Document Reference
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 CNVMP, CSWMP, CWRMP, CSpMP, and CHMP Appendix 12
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 CNVMP, CSWMP, CWRMP, CSpMP, and CHMP
C12	Construction must not commence until the Planning Secretary has approved all of the required Construction Monitoring Programs.	Refer to CNVMP, CSWMP, CWRMP, CSpMP, and CHMP
C13	The Construction Monitoring Programs, as approved by the Planning Secretary including any minor amendments approved by the ER must be implemented for the duration of Construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.	Refer to CNVMP, CSWMP, CWRMP, CSpMP, and CHMP
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 CNVMP, CSWMP, CWRMP, CSpMP, and CHMP
C15	Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.	Refer to CNVMP, CSWMP, CWRMP, CSpMP, and CHMP
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 pollutants during the Construction and Operation of the CSSI.	Refer to the CAQMP
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.*	N/A
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 CSSI approval applies if requested by the relevant council(s) or where no more practicable land for planting can be found within and up to 500 metres from the CSSI boundary. The location of replacement trees must be determined in consultation with the relevant council(s).	Refer to Appendix 4 ERAP 1 and the Tree Report

Condition Reference	Condition Requirements	Document Reference
E5	The Proponent must commission an independent experienced and suitably qualified arborist, to prepare a comprehensive Tree Report(s) before removing any trees as detailed in the documents listed in Condition A1. The Tree Report may be prepared for the entire CSSI or separate reports may be prepared for individual areas where trees are required to be removed. The report(s) must identify the impacts of the CSSI on trees and vegetation within and adjacent to the Construction footprint. The report(s) must include: (a) a description of the conditions of the tree(s) and its amenity and visual value; (b) 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 (c) 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.	Refer to the Tree Report
E47	Construction Traffic Management Plans (CTMPs) must be prepared for each Construction site or stage (or Low Impact Activity where required) in accordance with the CEMF and relevant Austroads, Australian Standards and RMS requirements. The CTMPs must be submitted to the RMS following engagement with the Sydney Coordination Office and before Construction commences at the relevant Construction site or stage. A copy of the Construction Traffic Management Plans must be submitted to the Planning Secretary for information.	Refer to the CTMPs
E56	Station Design and Precinct Plans must be prepared to inform the final design of the CSSI and to give effect to the commitments made in the documents listed in Conditions A1 and A2. The Station Design and Precinct Plans do not apply to those elements, which for technical, engineering, or ecological requirements, or requirements as agreed by the Planning Secretary, do not allow for alternate design outcomes.	Refer to the CEMP and the VAMP
E57	Station Design and Precinct Plans must be prepared by a suitably qualified and experienced person(s) in consultation with the relevant council(s), the community and affected landowners and businesses or a representative of the businesses. A station precinct is defined as an area within 200 metres radius of a station, or beyond for the purposes of connecting pedestrian and cycle paths from stations to existing or planned future pedestrian and cycle paths. The Station Design and Precinct Plans must include: (a) Context and form (i) an analysis of the built, natural and community context and the urban design objectives, principles and standards for the CSSI, (ii) the location of existing heritage items, (iii) the location and type of existing vegetation, (iv) detailed consideration of integration and continuity with urban design and landscape outcomes for SSI 7400, taking into account the approved station design and precinct plans for that project; (b) Design (i) the design of the CSSI elements including their form, materials and detail, (ii) the design of the CSSI landform and earthworks, (iii) visual screening requirements for the CSSI, (iv) developed visuals, cross sections and plans showing the proposed	Refer to the SDPP Refer to the VAMP

Condition Reference	Condition Requirements	Document Reference
	design outcome of the CSSI, (v) consideration of opportunities for provision of public art within each station precinct, (vi) consideration of the principles of Crime Prevention Through Environmental Design (CPTED); (c) Landscaping (i) areas of vegetation to be retained and proposed planting and seeding details, including the use of local indigenous species for revegetation activities, (ii) details of strategies to rehabilitate, regenerate or revegetate disturbed areas and successfully establish and maintain the resulting new landscape; (d) Transport and access (i) design measures to maximise the amenity of public spaces, permeability around entrances to stations and integration with other transport modes, (ii) measures to safeguard a new pedestrian crossing of the rail corridor to the west of Foord Avenue and east of Melford Street in Hurlstone Park, (iii) integrate with relevant initiatives identified in the Sydney Metro Sydenham to Bankstown Walking and Cycling Strategy, (iv) detailed consideration of measures to allow for the removal and/or relocation of existing ancillary infrastructure (such as fencing, substations and signaling boxes) and any structures that may be made redundant by the CSSI that may inhibit or detrimentally impact the provision of open space, pedestrian and cyclist pathways along the rail corridor or new access points into the stations in the future, (v) detailed consideration of design measures to ensure the location of infrastructure does not preclude future enhancements and upgrades to existing parks and public open spaces adjoining the rail corridor; and (e) Consultation (i) evidence of consultation with the community, the relevant council(s) in the preparation of the Plans and how feedback has been addressed before seeking review by the Design Review Panel, where required.	
E58	In addition to the requirements of Condition E57, the Station Design and Precinct Plan Bankstown Station must: (a) remove the existing at grade car park immediately opposite the intersection of North Terrace and The Appian Way to improve the public domain; (b) consider opportunities to improve legibility and access to the existing station entrances from North Terrace and Bankstown City Plaza, including rationalisation of retail outlets; (c) investigate opportunities to relocate the bus layover on South Terrace and off-street parking from the station interface; (d) consider opportunities to consolidate amenities such as toilets and other infrastructure into new integrated station facilities that are not isolated or dominant in the public domain; and (e) investigate and document opportunities for the relocation of the heritage listed parcel office or retention of its interpretive elements, and provide justification to explain why the opportunities have progressed or not; and (f) include a master plan for the transport interchange at Bankstown Station and consider the relationship to and outcomes of any broader master planning of the Bankstown commercial district.	Refer to the SDPP Refer to the VAMP

Condition Reference	Condition Requirements	Document Reference
E64	Station Design and Precinct Plans for Bankstown Station and Campsie Station must include an Interchange Access Plan to inform the final design of transport and access facilities and services. The Interchange Access Plan(s) must consider mode transfer, from both active transport or road- based transport and take into account: (a) station access hierarchy consistent with the transport planning principles identified in the EIS; transport initiatives and plans; and (c) patronage changes resulting from land use, population, employment, transport infrastructure and service changes.	Refer to the SDPP Refer to the VAMP
E65	The Station Design and Precinct Plans for Bankstown Station, Campsie Station and Dulwich Hill Station, must be reviewed by the Design Review Panel. The Proponent must provide a response to the outcomes of the Design Review Panel's review indicating how the relevant precinct plans will be amended to accommodate the review outcomes. Where the review outcomes are not addressed, the Proponent must provide the Design Review Panel with reasons.	Refer to the SDPP Refer to the VAMP
E66	With respect to the Bankstown Station, Campsie Station and Dulwich Hill Station precincts, the Proponent must submit the relevant Station Design and Precinct Plans to the Planning Secretary for approval no later than one (1) month before commencement of Construction of permanent built works that are the subject of these Station Design and Precinct Plans (in the area to which the relevant Station Design and Precinct Plan applies).	Refer to the SDPP Refer to the VAMP
E67	With respect to the Bankstown Station, Campsie Station and Dulwich Hill Station precincts, Construction of permanent built works or landscaping that are the subject of the Station Design and Precinct Plans must not be commenced (in the area to which the relevant Station Design and Precinct Plan applies) until the relevant Station Design and Precinct Plans have been approved by the Planning Secretary, after responding to the outcomes of the Design Review Panel review. Evidence of response to the Design Review Panel's review must be provided to the Planning Secretary. The Station Design and Precinct Plans, as approved by the Planning Secretary, must be implemented as required during Construction and Operation.	Refer to the SDPP Refer to the VAMP

Table 19 - CEMF Compliance

Clause	Requirement	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.	Appendix 11
2	The key environmental obligations to be addressed are contained within:	Section 8 Appendix 2

Clause	Requirement	Reference
	• Legislative requirements. • Project approval documentation. • Conditions of Approval. • Environment Protection Licences. • Other permits, approval and licences. • Standards and guidelines.	
2.1	Table 1.1 (of the CEMF) identifies key NSW environmental legislative requirements and their application to SM C&SW construction works, current as at the date of this document. TfNSW and its Contractors should regularly review their legislative requirements	Section 8 Appendix 2 Appendix 14
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 1 Section 8 Appendix 2 Appendix 14
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 8
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 • 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	Section 6 Section 8 Appendix 2 Specific Sub-plans

Clause	Requirement	Reference
	• 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.	Section 4
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 the Principle Contractors corporate Environmental Management System and AS/NZS ISO 14001:2004 or 2015; (ii) Be supported by a process for identifying and responding to changing legislative or other requirements; (iii) Include processes for assessing design or construction methodology changes for consistency against the planning approvals; (iv) Include processes for tracking and reporting performance against sustainability and compliance targets; (v) Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and (vi) Be consistent with the SM C&SW Sustainability Strategy and Sydney Metro Environment and Sustainability Policy	This Plan
3.1(c)	All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's E&SMS.	Section 4
3.1(d)	The relationship between key documents within the Sydney Metro Environment and Sustainability Management System and the Principal Contractor's Environment and Sustainability Management System is shown in Figure 2 (of the CEMF).	This Plan
3.1(e)	The Principal Contractors Sustainability Plan and its Sub-plans will capture governance and design requirements as well as social sustainability initiatives as required by the Sydney Metro Sustainability Strategies.	Refer to Sustainability Management Plan
3.1(f)	These plans vary in scope across different delivery packages.	Noted.
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.	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 1 Section 8 Appendix 14
3.3 (d)	As a minimum the CEMP will:	
(i)	Include a contract specific environmental policy;	Section 5
(ii)	Include a description of activities to be undertaken during construction	Section 2
(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 the relevant Sub-plan

Clause	Requirement	Reference
(iv)	For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	Refer to the relevant Sub-plan Section 6
(v)	For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with overall project organisation structure;	Section 7 Appendix 10
(vi)	Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principle Contractor's Project Director will be accountable for the implementation of the CEMP;	Section 7
(vii)	Identify communication requirements, including liaison with stakeholders and the community	Section 8 Section 11 Section 17
(viii)	Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.9(b)	Section 10
(ix)	Management strategies for environmental compliance and review of the performance of environmental controls;	Section 14 Section 16 Section 17 Section 19
(x)	Processes and methodologies for surveillance and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	Section 14 Section 16 Section 18 Section 20
(xi)	Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	Section 17 Appendix 1 Appendix 6
(xii)	Include procedures for the control of environmental records.	Section 12 Section 13
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, Housing and Infrastructure (DPHI).	Section 3 Section 8
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. Furthermore S2B will utilise any Sydney Metro forms or systems documentation to facilitate works approval.
3.4(a)	Subject to Section 3.3(b) and Section 3.2(b) the Principle Contractor will prepare issue-specific environmental Sub-plans to the CEMP and SMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific Sub-plans will include: (i) Spoil management;	Refer to Staging Report and specific Sub-plans

Clause	Requirement	Reference
	(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)	The principle Contractor will prepare and implement activity specific environmental procedures. These procedures should support environmental management Sub-plans, but may substitute for Sub-plans in agreement with TfNSW if a reasonable risk based justification can be made and the Sub-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 4
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 4
3.5(c)	The Principal Contractor will prepare and implement site based progressive Environmental Control Maps (ECM's) 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 Principal Contractors Environmental Manager or delegate; and (vi) Relevant workers will be trained in the requirements of and will sign off the procedures prior to commencing works on the specific site and / or activity.	Appendix 5
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 8.2
3.7(a)	Prior to the commencement of construction the Principal Contractors will offer Pre-construction Building Condition Surveys, in writing, to the owners of buildings where there is a potential for construction activities to cause cosmetic or structural	Refer to Sub-plan Construction Noise

Clause	Requirement	Reference
	damage. If accepted, the Principal Contractor will produce a comprehensive written and photographic condition report produced by an appropriate professional prior to relevant works commencing.	and Vibration Management Plan. Also refer to Construction Noise and Vibration Impact Assessment.
3.7 (b)	Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles.	Refer to Construction Traffic Management Plan and Business 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 14
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 14
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; • 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 the Principal Contractor	Section 10
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 10
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)	Section 15 Section 16 Section 17 Appendix 1 Appendix 6 Appendix 16

Clause	Requirement	Reference
	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.	
3.10(b)	The Contractor will make all personnel aware of the plan and their responsibilities.	Section 10
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: 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.	Section 7
3.12(a)	In relation to Roles and Responsibilities the CEMP will: i. Describe the relationship between the Principal Contractor, TfNSW, key regulatory stakeholders, the independent environmental representative and the independent certifier ii. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure iii. Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders.	Section 7
3.12(b)	All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor	Section 4
3.13(a)	Issue specific environmental monitoring will be undertaken as required or as additionally required by approval, permit or licence conditions	Refer to relevant Sub-plans
3.13(b)	The results of any monitoring undertaken as a requirement of the EPL will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results	Section 16
3.13(c)	Environmental inspections will include: i. Surveillance of environmental mitigation measures by the Site Foreman. ii. Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record.	Section 16
3.13(d)	Regular site inspections by the ERs and TfNSW representatives at a frequency to be agreed with the Principal Contractor	Section 16
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.	Section 18

Clause	Requirement	Reference
	iii. Community consultation and complaint response. iv. Environmental training records. v. Environmental monitoring and inspection results	
3.13(f)	TfNSW (or an independent environmental auditor) will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation, including this Construction Environmental Management Framework.	Section 18
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 on-compliances in a timely manner	Section 17
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 17
3.14(c)	TfNSW or the Environmental Representative may raise non-compliances against environmental requirement	Section 17
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 12
3.15(b)	Records will be retained onsite for the duration of works	Section 12
3.15(c)	Additionally records will be retained by the Principal Contractor for a period of no less than 7 years in total. Records will be made available in a timely manner to TfNSW (or their representative) upon request	Section 12 Section 13
3.15(d)	Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.13) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to TfNSW at an agreed frequency	Section 7 Section 12
3.16(a)	Principal Contractors will ensure the continual review and improvement of the E&SMS. This will generally occur in response to: i. Issues raised during environmental surveillance and monitoring ii. Expanded scope of works iii. Environmental incidents iv. Environmental non-conformances.	Section 4 Section 19
3.16(b)	A formal review of the E&SMS by the Principal Contractor's Senior Management Team will also occur on an annual basis, as a minimum. This review will generate actions for the continual improvement of the E&SMS and supporting management plans.	Section 19
5.1(a)	Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.	Section 2.5
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	Section 2.5

Clause	Requirement	Reference
	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.	
5.1(c)	Principal Contractors may apply for EPA approval to undertake works outside of normal working hours under their respective Environment Protection Licences	Section 2.5
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.	Section 21 Refer to the CNVMP and CNVIS for details on noise attenuation
5.3(a)	Mitigation measures for reinstatement will be produced in consultation with TfNSW, the community and stakeholders.	Section 21
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 ii. At the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site iii. All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better iv. Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction.	Section 21
6.1a	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 4
6.3a	Examples of spoil mitigation measures include: i. Implementing the spoil re-use hierarchy; ii. Handling spoil to minimise potential for air or water pollution; and iii. Minimise traffic impacts associated with spoil removal.	Appendix 4
7.1a	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 4
7.3a	Examples of groundwater mitigation measures include: i. Implementing all feasible and reasonable measures to limit groundwater inflows to stations and crossovers; and ii. Undertaking groundwater monitoring during construction (levels and quality) in areas identified as 'likely' and 'potential' groundwater dependent ecosystems.	Appendix 4
11.1a	The following flora and fauna management 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	Appendix 4

Clause	Requirement	Reference
	iv. Appropriately manage the spread of weeds and plant pathogens.	
11.3a	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 sigh-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 suitable 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 4

Table 20 REMM Compliance

REMM	Requirement	Reference
NAH6	A Heritage Interpretation Plan would be prepared to document the development of the Bankstown Line and detail the history of each station and its contribution to both the Bankstown Line and the surrounding suburbs. Appropriate heritage interpretation would be incorporated in the design and would provide legible connection between stations.	Refer to the CHMP
NAH7	A moveable heritage item strategy would be prepared by an appropriately qualified and experienced heritage specialist in consultation with Sydney Trains, and would include a comprehensive record of significant railway elements to be impacted. This would include items contained within station and platform buildings as well as of any other significant equipment within the curtilage of the heritage railway stations. The moveable heritage item strategy would form part of the broader interpretation strategy.	Refer to the CHMP
NAH8	Where significant buildings are to be re-purposed or refreshed: • the inherent character of the building should be retained with new additions, including form, palette and materiality, sympathetic to its heritage values • a suitably qualified and experienced heritage architect should advise on appropriate materials and finishes which would be sympathetic to the heritage values of each individual station. • the internal layout of the building should be retained where possible, and rooms should not be subdivided unless it can be completed without adverse impact and/or is reversible without any long term adverse impact. • a significant element register should be prepared by a suitably qualified and experienced heritage architect. The register should list significant fabric, assess its condition, tolerance for change and recommend retention or salvage.	Refer to the CHMP
NAH9	The design and materials used for the construction of new access stairs, concourses, canopies and lift shafts should be as sympathetic as possible to the existing character of the stations with the aim of minimising visual impacts. The design should use unobtrusive, modern, lightweight materials such as glass panelling and slim frame elements. The Design Review Panel should be consulted in regard to the design, form and material of these additions.	Refer to the CHMP
NAH10	Where platforms are re-levelled, door thresholds and steps should be accessible without raising or relocation of entries. Sub-floor ventilation should remain open to avoid long term impacts to the structures.	Refer to the CHMP
LV3	Transport for NSW would prepare Station Design and Precinct Plans for each station. The plans would aim to ensure that the stations and facilities are sympathetic and complement local character, and are integrated with future plans for development. The plans would consider the following: • urban design context • sustainable design and maintenance • community safety, amenity and privacy, including 'safer by design' principles where relevant • opportunities for public art • landscaping and design opportunities to mitigate the visual impacts of rail infrastructure and operation facilities • incorporation of salvaged historic and artistic elements on the project design	This requirement has been addressed during the Design / Pre-construction phase. Refer to the VAMP

	• details of where and how recommendations from the Design Review Panel have been considered in the plan. • Documents to be considered by the plans include, but are not limited to: Inner West Council's Dulwich Hill Station Precinct public domain master plan • Outcomes of the master plan for Bankstown Station. The plans would be prepared and implemented in consultation with the Department of Planning, Housing and Infrastructure, Inner West and Canterbury- Bankstown councils, Chambers of Commerce, and the local community.	
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.	Section 21
LV9	The detailed design of the substations would ensure that they incorporate appropriate architectural treatments and landscaping, guided by the design guidelines, to minimise the potential for visual impacts. Surrounding property owners would be consulted during design of the substations.	This requirement has been addressed during the Design / Pre-construction phase.
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.	Section 21
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.	Appendix 3 Appendix 4
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.	Appendix 3 Appendix 4
B3	Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	Appendix 3 Appendix 4
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.	Appendix 3 Appendix 4
B5	Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	Appendix 3 Appendix 4
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.	Appendix 3 Appendix 4
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.	Appendix 3 Appendix 4
B8	Annual inspections would be undertaken for weed infestations and to assess the need for control measures.	Appendix 3 Appendix 4
B9	Any outbreak of priority weeds and/or weeds of national environmental significance would be managed in accordance with the relevant guidelines.	Appendix 3 Appendix 4
B10	Sydney Metro would take necessary steps to locate and protect threatened species and habitats where they occur inside the Sydenham to Bankstown rail corridor. Suitable protection measures would include fencing, signage and other measures where this would not impede the safe maintenance and operation of trains and related infrastructure.	Appendix 3 Appendix 4
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.	Appendix 3 Appendix 4
WM2	A recycling target of at least 90 per cent would be adopted.	Appendix 3 Appendix 4

WM3	Spoil would be managed in accordance with the spoil management hierarchy.	Appendix 3 Appendix 4
WM4	Target 100 per cent reuse of reusable spoil.	Appendix 3 Appendix 4
WM5	Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging.	Appendix 3 Appendix 4
WM6	All waste would be assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).	Appendix 3 Appendix 4
WM7	Waste segregation bins would be located at various locations within the project area, if space permits, to facilitate segregation and prevent cross contamination.	Appendix 3 Appendix 4
HSR1	A hazard analysis would 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.	Section 14.4
HRS3	All utilities adjustments or relocation would be undertaken in accordance with the Utilities Management Framework	Appendix 3
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).	Appendix 3 Appendix 4

Table 21 PIR Revised Environmental Performance Outcomes relevant to the CEMP

Biodiversity	The preferred project is designed to minimise impacts on biodiversity and avoid impacts to biodiversity that requires offsets. Where practical, the design minimises the need to clear vegetation. Potential impacts on biodiversity are managed in accordance with relevant legislation, including the EP&A Act, TSC Act, EPBC Act, and the *Biosecurity Act 2015*. The biodiversity outcome is consistent with the *Framework for Biodiversity Assessment* (OEH, 2014a).	Appendix 4 - Operational Control Procedures – ERAP 1 Biodiversity
Utilities	Impacts to utilities during construction are minimised. The design takes into account the input of utility providers and owners.	Appendix 3

*Note: refer to CEMP Sub-plans for performance outcomes that relate to the environmental aspects associated with the specific Sub-plan.

APPENDIX 15 – Environmental Schedules and Forms

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?								

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.

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)			

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 –								

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.									

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

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		

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

File Ref:

ENVIRONMENTAL INCIDENT & COMPLAINT REPORT No. ……

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 16 – Sydney Metro Environmental Incident and Non-compliance Reporting Procedure

CLASS ONE (INCLUDING POTENTIAL)	CLASS TWO	CLASS THREE
Class One Environmental Events 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. These events must be reported immediately to the General Manager Sustainability and Environment, Head of Legal and Environmental Leader.	Class Two Environmental Events 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. Class 2 events will likely result in regulatory investigation and action. Class 2 events must be reported immediately to the Environmental Leader.	Class Three Environmental Events typically cause short term or nuisance damage. The damage is easily rectified usually within one day. Class 3 events do not cause medium- or long-term damage. All events MUST be reported into IMPACT within 48 hours.

PARAMETERS		
• Serious or material environmental harm or damage. • Reportable incident and potential prosecution > $50,000 • Cost to make good >$50,000 • Breach of a statutory environmental permit or approval condition that results in serious or material environmental harm or results in the project being shut down.	• Potential or actual material environmental harm or damage reportable as per State regulator • Potential for prosecution <= $50,000 • Event related to actual or potential Infringement / Improvement Notices by any authority related to environmental legislation or planning approvals conditions • Breach of a statutory environmental permit or approval condition • Cost to make good on environmental damage $5000 -$50,000	• Minor pollution event • Minor failure of environmental controls which does not result in a risk of regulatory action. • No mandatory external reporting requirements • Typically cost ≤$10,000 to make good.

EXAMPLES

CLASS ONE	CLASS TWO	CLASS THREE
• Chemical, oil or diesel spills or pollutant discharges ≥100L to nearby waterways. • Failure of sediment basin or spillway or dewatering basin or other environmental temporary works causing offsite impacts. • Direct offsite discharge of waters that are polluted or contaminated, outside the water quality guidelines or outside limits set by licenses or approvals on the Project that causes serious environmental harm. • Sewage/septic overflows into nearby water courses • ≥1000L.	• Chemical, oil or diesel spills or pollutant discharges to waterways between 10 – 100L. • Direct discharge offsite of water (dewatering) greater than approved limits or without verification testing <1000L • Wilful or negligent damage (including removal) to erosion and sediment controls, leading to sediment laden water moving offsite. • Failure of sediment basin or spillway or dewatering basin or other environmental temporary works that does not cause off site impact.	• Oil/fuel/chemical spill/leak ≤ 10L to waterways • Oil/fuel/chemical spill/leak ≤200L to land, i.e., hydraulic oil spill/failure/diesel spill from machinery/equipment/refuelling or curing compound or radiator fluid. • Overflow to land from on-site sewage or septic tanks ≤1000L • Dust emission more than nominated limits by less than 20% or visible at a sensitive receptor, whichever is less.

CLASS ONE	CLASS TWO	CLASS THREE

• Oil/Fuel/Chemical Spill ≥1000L onsite or a spill to land.
• Any spill or discharge which threatens to alter the classification of land to a "contaminated site".
• Wilful unlawful disposal of waste materials/liquid to an offsite facility resulting in environmental harm.
• Overflow to land from on- site sewage/septic tanks between >1000L
• Spreading fire ants/electric ants/crazy ants outside of the restricted area – QLD for fire and electric, Lismore for crazy
• Breach of an Environmental Protection Order or Notice.
• Major breach of licence conditions
• Unauthorised significant/material harm or damage to native vegetation
• Un-authorised damage/destruction of cultural/heritage artefacts or significant places resulting in significant/material harm
• Odour, dust, or noise pollution that reaches an offensive level and causes significant impact on nearby environmental receptors and residents.
• Fire that travels beyond the site boundary causing adverse impact to the environment, property, or community.
	• Any fuel/oil/chemical spills to land between 200L – 1000L.
	• Uncontrolled or direct discharge or unlawful disposal of contaminated materials/liquids off site to the land > 100L.
	• Disposal of waste at an unapproved facility:
	  ◦ Construction waste
	  ◦ Spoil material
	  ◦ Liquid waste
	  ◦ Hazardous wastes
	• Overflow to land from on-site sewage/septic tanks between >1000L.
	• Verified complaints relating to excessive dust levels offsite, affecting environmental receptors and nearby residents. e.g., includes visible dust settlement on surrounding properties or significant exceedance of nominated criteria.
	• Noise pollution that reaches an offensive level and causes impact on nearby environmental receptors and residents
	• Unauthorised damage or loss to threatened/vulnerable/ endangered fauna or flora species.
	• Verified complaints relating to odour
	• Not having required statutory licence/permits or approvals.
	• Works undertaken without internal permit completed and approved.
	• Working outside permitted hours without approval.
	• Unauthorised vegetation removal outside approved clearing limits.
	• Unapproved works undertaken within the Tree Protection Zone.
	• Works undertaken outside of project boundary limits or the assessment footprint without approval.
	• Damage to 3rd party property because of construction vibration.
	• Breach of regulatory environmental condition triggering external reporting or resulting in environmental harm.
	• A fire that does not cause or potentially cause adverse effects to the environment or local community.
	• Transport and disposal of fire ant items outside of fire ant restricted areas – QLD only.
	• Un-authorised impact to cultural/heritage artefacts or places or breach of associated management plan (e.g., CHMP).
	• Supplying plant or materials containing pest plant reproductive material.
		• Damage to or partial failure of sediment controls where run-off does not cause impact off site.
		• Light pollution – unwanted illumination of neighbouring properties.
		• Unapproved trimming or accidental damage to vegetation to be protected or retained.
		• Entry into an environmental no-go area, TPZ or environmentally sensitive area without approval or control measures that does not result in an impact.

REPORT ONLY / NEAR MISS

- Class 3 incident type that does not result in any environmental damage.
- Complaints that do not result in an environmental impact are to be recorded in the project's complaints management system. If there is no separate complaints management system, complaints not resulting in an environmental impact are to be recorded in Impact as class 3 events.
- Third party environmental events not related to the project such as unlawful waste disposal on site, third party environmental events.
- For example – fuel, chemical or oil leak that does not contaminate the ground water.
- The definitions of material or serious environmental harm are to be applied as per the relevant jurisdiction.