PROJECT MANAGEMENT PLAN

Construction Environment Management Plan

Sydney Metro West – Western Tunnelling Package

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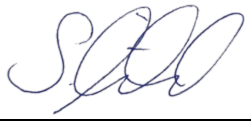		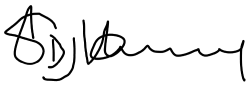
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Date	Date	Date

DOCUMENT CONTROL

The current document version number and date of revision are shown in the document footer. All changes made to the Management Plan during its implementation on a live project are to be recorded in the amendment tables below.

Revision History

Revision	Date	Description of changes	Prepared by	Approved by
A	21/12/2021	Early Works Submission	Stephanie Mifsud	Simon Hussey
B	21/03/2022	Revised draft	Stephanie Mifsud	Simon Hussey
C	20/04/2022	Final	Stephanie Mifsud	Simon Hussey

Terms and Definitions

Term	Definition
AA	Acoustic Advisor
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CSSI	Critical State Significant Infrastructure
DPE	Department of Planning and Environment (NSW)
DSI	Detailed Site Investigation
EA	Environmental Advisor
ECM	Environmental Control Measures
EIS	Environmental Impact Statement
EM	Environmental Manager
EMS	Environmental Management System (Integrated Management System)
EPA	Environmental Protection Authority
EPL	Environmental Protection Licence
ER	Environmental Representative
ESR	Environmental Site Representative
EWMS	Environmental Work Method Statement
GALC	Gamuda Australia and Laing O'Rourke Consortium
MCoA	Minister's Conditions of Approval
MSF	Maintenance and Stabling Facility
OOHW	Out Of Hours Work
PM	Project Manager
POEO	*Protection of the Environment Operations Act 1997* (NSW)
REMMs	Revised Environmental Mitigation Measures
SM	Sydney Metro
WTP	Sydney Metro West Western Tunnelling Package Works

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1 INTRODUCTION

1.1 Context

The Construction Environmental Management Plan (CEMP – this Plan) has been developed for the delivery of the Sydney Metro West Western Tunnelling Package (WTP) (this Project). It will be delivered by Gamuda Australia Laing O'Rourke Consortium (GALC).

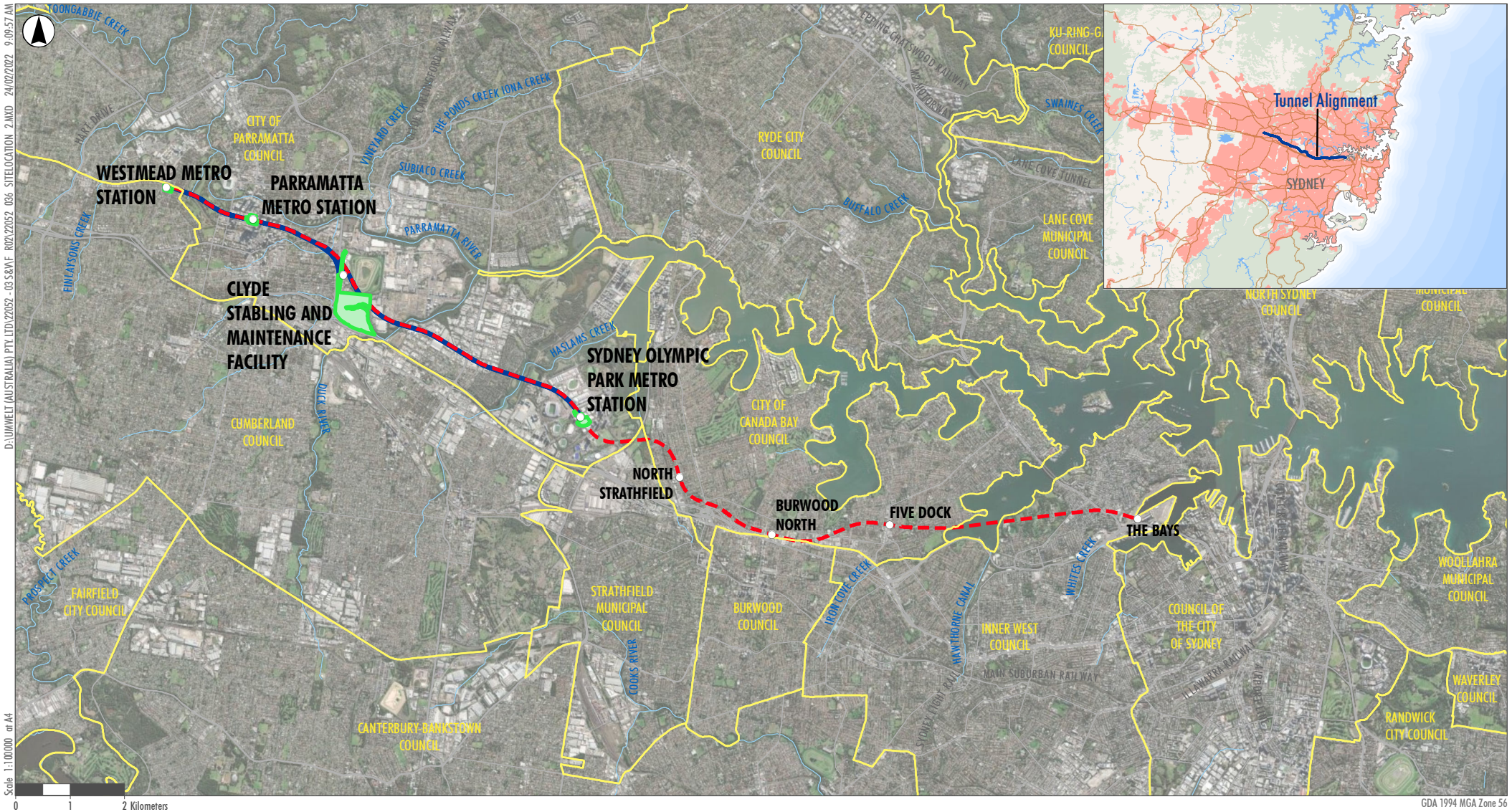
Sydney Metro West – Westmead to The Bays Concept and Stage 1 received planning approval on 11 March 2021 (SSI 10038). The Project comprises the western portion of Stage 1 of SSI 10038, from Sydney Olympic Park to Westmead. This CEMP has been prepared to address requirements of the Minister's Conditions of Approval (MCoA), Revised Environmental Management Measures (REMMs) listed in the Sydney Metro West – Submissions Report, dated 20 November 2020, the Construction Environmental Management Framework (CEMF) requirements and all applicable legislation as they relate to the Project.

1.2 Sydney Metro West – Westmead to The Bays

Sydney Metro West (SMW) is a new 24-kilometre metro line between Westmead and Sydney CBD providing a turn-up-and-go metro service. The planning approvals and environmental impact assessment for Sydney Metro West will be broken down into a number of stages recognising the size of the Project. This includes:

- Sydney Metro West at a Concept level
- Stage 1 – All major civil construction works between Westmead and The Bays including station excavation and tunnelling
- Stage 2 – All stations, depots and rail systems between Westmead and The Bays.
- Stage 3 – Major civil construction works including station excavation, tunnels, stations, depots and rail systems between The Bays and the Sydney CBD Station, and operation of the line.

Refer to Figure 1 for the location of the Sydney Metro West Stage 1 works, including the Project.



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Legend

- Surface Construction Sites
- The Project (Western Tunnelling Package)
- Sydney Metro West Concept and Stage 1
- Approved Station Sites
- Local Government Boundary
- Road
- Drainage Line
- Railway Line

Image Source: ESRI Basemap (2022) Data source: NSW DFSI (2021)

1.3 Planning Approval

Sydney Metro West – Westmead to The Bays Concept and Stage 1 was subject to environmental impact assessment under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). It was also declared a Critical State Significant Infrastructure (CSSI) by the Minister for Planning & Public Spaces (the Minister).

An Environmental Impact Statement (EIS) has been prepared under Division 5.2 of the EP&A Act and in accordance with Part 3 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000. Following exhibition of the EIS, an Amendment Report and Submissions Report were also prepared, after an assessment was carried out, the Minister determined that the Project be approved subject to conditions.

The planning approval (Infrastructure Approval SSI 10038) and related environmental assessment documents are located at: https://www.planningportal.nsw.gov.au/major-projects/project/25631

1.3.1 Changes to the Approved Project

The Project was approved on 11 March 2021. Since this date, Sydney Metro has completed or commenced changes to the approved Project. Changes are shown in Table 1.

Table 1: Changes to the Approved Project

Description	Approval Pathway	Status
Modification 1 – administrative modification to Conditions A11, C10 and D25 to improve clarity of intent and timing requirements.	Section 5.25 of the *Environmental Planning and Assessment Act 1979* (EP&A Act)	Approved – 28 July 2021
Modification 2 – major civil construction at the Clyde MSF include relocation and extension of the Rosehill dive structure and realignment of Kay and Unwin streets.	Section 5.25 of the EP&A Act	Response to submissions
Construction sequencing change of the tunnel boring machines, for launch and support activities to be moved from Westmead to Clyde.	Consistency Assessment	Approved – 27 November 2020
Improvements to Westmead construction site, including relocation of station box	Consistency Assessment	Approved - TBC
Modified construction methodology at the confluence of the spur tunnel Clyde dive).	Consistency Assessment	Yet to be prepared – to be updated once complete

During delivery of the Project, GALC may undertake additional changes to the Project (where design, construction methodologies etc change). Assessment of the consistency of the change would be undertaken in accordance with Section 5.25 of the EP&A Act. Proposed changes would be supported by appropriate environmental assessments.

If the proposed change is inconsistent with the approved Project GALC may be required to complete further environmental assessment and submit this assessment to Sydney Metro as a Project modification.

Any further environmental assessments would 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).

In the case of an administrative modification, a Consistency Assessment may not be required.

1.4 Purpose of the CEMP

This initial CEMP and its associated sub-plans have been prepared in accordance with MCoA C6. The CEMP and sub-plans will outline and describe how GLC will comply with the requirements for environmental management detailed within the MCoA, REMMs and the Sydney Metro Construction Environmental Management Framework (CEMF). Additionally, it outlines how GALC will minimise the environmental risks and achieve environmental outcomes on the Project.

This CEMP will be the primary tool to bring Sydney Metro and legislative requirements together throughout project delivery.

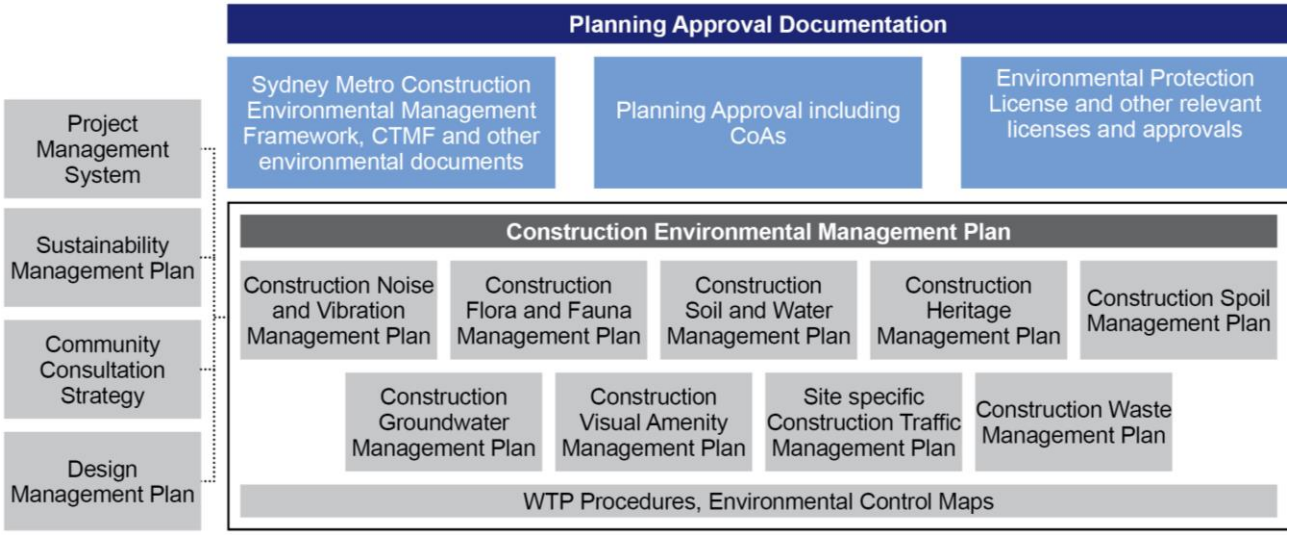

Figure 2: Environmental Management Plans

This CEMP has been prepared in accordance with:

- SSI 10038 MCoA, dated 11 March 2021 including:
  - The Sydney Metro West – Environmental Impact Statement, dated 15 April 2020
  - The Sydney Metro West – Amendment Report, dated 20 November 2020
  - The Sydney Metro West – Submissions Report, dated 20 November 2020
- Sydney Metro Construction Environmental Management Framework v4.0 (TfNSW, 2020)
- Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004)

- Sydney Metro West Overarching Community Communications Strategy (OCCS)
- Community Communications Strategy and Business Management Plan
- Sydney Metro Construction Noise and Vibration Standard (Transport for NSW, v 4.0, 2020)
- Construction Traffic Management Framework, Sydney Metro West and Greater West construction (Transport for NSW, v 1.0, 2020)
- Relevant environmental legislative requirements
- AS/ANZ ISO 14001:2015 Environmental Management Environmental Management Systems – Requirements with Guidelines for use (Australian Standards, 2015)
- All other requirements of The Contract.

Construction will not commence until the CEMP and relevant sub-plans are endorsed by the Environmental Representative (ER) and approved by the Secretary of the Department of Planning and Environment (DPE) as required.

1.5 Scope of Works

A Phasing Report was prepared by Sydney Metro for the Sydney Metro West Stage 1 construction works (SM-21-00062230), in accordance with the Phasing Report requirements of the MCoA. The Sydney Metro West Stage 1 construction works have been split into seven delivery phases, including:

- **Phase A** – Power Enabling Works
- **Phase B1** – Central Tunnelling Early Works
- **Phase B2** – Central Tunnelling Main Works
- **Phase C** – Parramatta and Clyde Enabling Works
- **Phase D** – Greater Sydney Road Works
- **Phase E** – Existing Rail Corridor Enabling Works
- **Phase F** – Western Tunnelling Works (this Project)

The WTP is a tunnelling package for SMW. It involves nine kilometres of twin railway tunnels between Sydney Olympic Park and Westmead as well as:

- Westmead Station box excavation, including temporary support, stub tunnels, partially mined station cavern and crossover cavern including permanent lining and support
- Parramatta Station, including excavation of station box and associated support
- Clyde Maintenance and Stabling Facility (MSF), including permanent dive structure, portal, spur running tunnels, spur tunnel junction cavern, bulk earthworks, civil structures, utilities corridor, road crossing and creek diversion
- Rosehill Services Facility, including shaft excavation, permanent lining, and lateral support
- A precast segment manufacturing facility at Eastern Creek (subject to a separate CEMP and approved under a Review of Environmental Factors)
- TBM retrieval at Sydney Olympic Park.

1.5.1 Project Delivery and Construction Methodology

GALC's overall delivery strategy has been developed to mitigate program risks and meet project milestones. As such, the overall construction sequence for the project will incorporate simultaneous construction across sites, with key minor works and site establishment undertaken to assist delivery.

1.5.1.1 Site Establishment and Low Impact Works

Site specific strategies with consideration to the wider project includes site establishment works and Low Impact works, which will be undertaken prior to construction commencing at each construction site. This includes:

1. Rosehill Services Facility (within the Clyde MSF construction site)
   - Development of a Site Establishment Management Plan (SEMP) for early works
   - Low Impact works approval for other site establishment activities.
2. All sites
   - Low Impact works approval (DSI, geotechnical assessment, potholing etc)

Low Impact works approvals will be prepared by GALC separately to this CEMP, in accordance with the WTP Low Impact Works Application process.

Low Impact Work described in the MCoA definition becomes ‘Construction’ with the approval or endorsement of a CEMP. Where Low Impact Work has already commenced, this is considered to remain as Low Impact Work and is managed in accordance with the framework under which it commenced. If any work actually or potentially affects heritage items, threatened species, populations or endangered ecological communities, these works are defined as ‘Construction’ unless otherwise determined by the ER.

Low Impact Works applications and all supporting information will be submitted to Sydney Metro and the ER for review. Where required, the ER will endorse the Low Impact Works Application prior to the commencement of works. The ER will assess the impacts of activities as required by the Low Impact Work definition in the MCoA for the duration of the work.

1.5.1.2 Ancillary Works

Ancillary works will include fencing, hoarding, maintenance access, utility works, drainage, noise barriers, road and transport network works and temporary site offices, laydown and establishment of work sites to support construction.

Operation of ancillary facilities will be undertaken in accordance with this CEMP. If ancillary facilities are required to be established prior to the approval of this CEMP, a SEMP will be developed in accordance with MCoA A17.

The Rosehill SEMP will be endorsed by the ER one month prior to establishment of that facility in accordance with MCoA A19. Minor ancillary facilities that meet the criteria in MCoA A21 will be established subject to a review by the ER.

1.5.1.3 Construction Works

The role of this CEMP, associated sub-plans and other management plans, is to provide a framework for environmental management across the project and to ensure legislative, environmental and approval requirements are fulfilled for construction activities associated with the Project. The four key above ground sites for the project, covered by this CEMP, are:

1. Westmead
2. Parramatta
3. Clyde MSF
   - Including Rosehill Services Facility
4. Sydney Olympic Park

The construction methodology for the Project works will generally involve:

- Demolition of remaining existing structures and concrete hardstand
- Design investigations/ground treatment works including archaeological testing, heritage salvage works and treatment
- Establishment of construction sites at all locations
- D-wall construction across Rosehill and Parramatta
- Utilities works across all sites
- Acoustics shed installation at Rosehill and Westmead
- Box excavation at Clyde to allow for the launch of Tunnel Boring Machines (TBM)
- Retaining and excavation works across Westmead, Parramatta and Rosehill, including spoil disposal
- Tunnelling activities utilising Roadheaders and TBM's, including spur tunnel, cross passage construction and spur cavern excavation
- Minor road and footpath adjustments to facilitate access to construction sites
- Nozzle excavations at Sydney Olympic Park.

1.5.2 Construction Sites

The main construction sites and key activities at each site are outlined in Table 2.

Table 2: Main construction sites

Site	TBM launch and support	TBM retrieval	Roadheader works and support	Spoil removal	Station excavation	Services facilities excavation	Construction staff facilities	MSF civil works	Creek crossings	Tunnel dive structure
Westmead Metro Station		●	●	●	●		●			
Parramatta Metro Station				●	●		●			
Clyde Maintenance and Stabling Facility	●			●		●	●	●	●	●
Sydney Olympic Park Station		●		●	●		●			
Segment Manufacturing Facility – Eastern Creek							●			

2 PROJECT OBJECTIVES AND TARGETS

2.1 Objectives and Targets

The key objective of the CEMP is to establish the environmental requirements of the Project. Key environmental objectives and targets are set out in Table 3 below.

Table 3: Objectives and targets of the project

Objective	Target	Performance Indicators
Compliance with the Minister for Planning's Project Planning Approval as it applies to the Project	Full compliance	Compliance Reporting
Compliance – permits/licences	Full compliance	Compliance Reporting
Implementation of performance outcomes, commitments and mitigation measures specified in planning approval documents.	Full compliance	Compliance Reporting
Engage with the community, minimise complaints and respond to complaints within defined timeframes	Provide timely and relevant information. Record and respond to complaints within the specified timeframe.	Audits Complaints records
Minimise environmental risk and respond to emerging environmental hazards throughout project delivery	All actions raised during inspections and audits are closed out within proposed timeframes	Inspection and audit reports
Effective site environmental controls	Set-up prior to starting work in the affected area. Maintain effective controls.	Weekly inspection checklists and daily environmental surveillance (informal inspection)
Promote a culture of innovation and continuous improvement of environmental management.	Training program implemented and learnings shared amongst the team	Toolbox talks Lessons Learned Inspection / audit reports Training logs
Demonstrate commitment to environmental objectives	80% leadership attendance rate at environmental inspections 80% actual vs. planned attendance at environmental awareness training (excluding tool box talks / inductions)	Inspection Reports Training logs

3 ENVIRONMENTAL MANAGEMENT SYSTEM

This CEMP and its sub-plans capitalise on the strong Australian project delivery experience of Laing O'Rourke and the global expertise of Gamuda Australia. This CEMP has been developed in accordance with the robust Gamuda Australia Branch Environmental Management System (EMS) which is aligned to the requirements of ISO14001.

The CEMP and CEMP sub-plans have implemented the CEMF requirements to a degree that is appropriate for the Project's scope of work and inherent level of environmental risk, as identified in Section 3 of this Phasing Report. Depending on the scope and scale of the works, Sydney Metro may decide to streamline the CEMP and sub-plan requirements.

All contractors and subcontractors will work under the EMS. All contracts will be developed to clearly articulate the contractor's responsibilities under the EMS and relevant training provided).

3.1 Construction Environmental Management Plan

This CEMP incorporates the following requirements:

- Legislative and contractual requirements and other environmental obligations
- Planning approval and regulatory licence conditions
- Gamuda Environment Policy and Sustainability and Innovation Policy objectives
- Project specific Environment and Sustainability Policy (SMW WTP Environment Policy - refer to Section 6.1)
- Objectives and measurable targets associated with the potential environmental impacts of the Project
- Processes and procedures that Gamuda Australia will adopt to identify, manage, and control the environmental aspects and impacts (using a risk management approach)
- Provision of adequate resources and allocation of responsibilities for ensuring the effective implementation of this CEMP
- Methods for maintaining records and requirements for reporting
- Process for monitoring and reviewing the environmental management performance of the Project to drive continual improvement.

This CEMP explains how the Gamuda Australia Branch EMS will be applied on the Project. The basis for the EMS (and this CEMP) is the concept of Plan-Do-Check-Act (PDCA). The PDCA model provides an iterative process to achieve continual improvement, as follows:

- **Plan**: establish environmental objectives and processes necessary to deliver results in line with the SMW WTP Environment Policy.
- **Do**: implement the processes as planned.
- **Check**: monitor and measure processes against the SMW WTP Environment Policy, including its commitments, environmental objectives, and operating criteria, and report the results.
- **Act**: take actions to continually improve.

3.2 Construction Environmental Management Sub-Plans

CEMP sub-plans have been prepared to support the CEMP, as outlined in Table 4. These sub-plans have been prepared to address the requirements listed in the Sydney Metro West – Stage 1 Phasing Report, MCoA, REMMs and CEMF specific to the type of environmental impact.

Table 4: CEMP Sub-plans

Sub-plan	Document Reference	MCoA Reference
Noise and Vibration	SMWSTWTP-GLO-1NL-NL000-NV-PLN-000001	MCoA C5(a)
Flora and Fauna	SMWSTWTP-GLO-1NL-NL000-EO-PLN-000001	MCoA C5(b)
Soil and Water	SMWSTWTP-GLO-1NL-EN-PLN-000001	MCoA C5(c)
Heritage	SMWSTWTP-GLO-1NL-HE-PLN-000001	MCoA C5(d)
Groundwater	SMWSTWTP-GLO-1NL-EN-PLN-000002	MCoA C1
Air Quality	SMWSTWTP-GLO-1NL-NL000-AH-PLN-000001	MCoA C1
Visual Amenity	SMWSTWTP-GLO-1NL-NL000-EN-PLN-000003	MCoA C1
Spoil	SMWSTWTP-GLO-1NL-SM-PLN-000001	MCoA C5(e)
Waste	SMWSTWTP-GLO-1NL-NL000-WM-PLN-000002	MCoA C1

Prior to submission for endorsement from the ER (and Acoustic Advisor (AA) for the Noise and Vibration Management Sub-plan), several CEMP sub-plans require consultation from relevant government agencies, as well as approval from DPE. Table 5 outlines the consultation, endorsement and approval requirements for each sub-plan.

Table 5: Environmental Requirements for CEMP Sub-plans

Sub-plan	Consultation	Endorsement	Approval
Noise and Vibration	Sydney Olympic Park Authority (SOPA); Cumberland City Council; City of Parramatta Council	ER and AA	DPE
Flora and Fauna	DPE EES; DPI Fisheries; SOPA; Cumberland City Council; City of Parramatta Council	ER	N/A
Soil and Water	DPE EES; DPE Water; NSW State Emergency Service (SES); Sydney Water; SOPA; Cumberland City Council; City of Parramatta Council	ER	DPE
Heritage	Heritage NSW; SOPA; Cumberland City Council; City of Parramatta Council	ER	DPE
Groundwater	N/A	ER	N/A
Air Quality	N/A	ER	N/A
Visual Amenity	N/A	ER	N/A

Sub-plan	Consultation	Endorsement	Approval
Spoil	SOPA; Cumberland City Council; City of Parramatta Council	ER	DPE
Waste	N/A	ER	N/A

Note: this will be revised with the updated Phasing Report.

Site establishment works for the Rosehill Services Facility, including construction of ancillary facilities, will be conducted in accordance with the Site Establishment Management Plan (GA-PLN-SEM-001), which will be approved and implemented separately to the CEMP and CEMP sub-plans.

3.3 Construction Monitoring Programs

The Sydney Metro West – Stage 1 Phasing Report has identified the following Construction Monitoring Programs as applicable to the Project:

- Noise and Vibration Monitoring Program
- Surface Water Quality Monitoring Program
- Groundwater Monitoring Program.

These monitoring programs will be prepared as part of the applicable CEMP sub-plan. No blasting monitoring program would be undertaken as blasting will not be adopted for this Project.

Prior to submission for endorsement from the ER (and AA for the Noise and Vibration Monitoring Program), these Construction Monitoring Programs require consultation from relevant government agencies, as well as approval from DPE. Table 6 outlines the consultation, endorsement and approval requirements for each monitoring program.

Table 6: Environmental Requirements for Construction Monitoring Programs

Monitoring Program	Consultation	Endorsement	Approval
Noise and Vibration	EPA; SOPA; Cumberland City Council; City of Parramatta Council	ER and AA	DPE
Surface Water Quality	DPE Water; Sydney Water; Cumberland City Council; City of Parramatta Council	ER	DPE
Groundwater	DPE Water; SOPA	ER	N/A

Note: this will be revised with the updated Phasing Report.

3.4 Relationship with Other Environmental Management Documents

The CEMP is the overarching document in the EMS for the Project. The EMS also includes the CEMP sub-plans, GALC and Sydney Metro policies and procedures, as well as requirements for

detailed site investigations, monitoring, inspection, auditing, reporting and compliance. Figure 3 illustrates the relationship between the CEMP and other EMS documents.

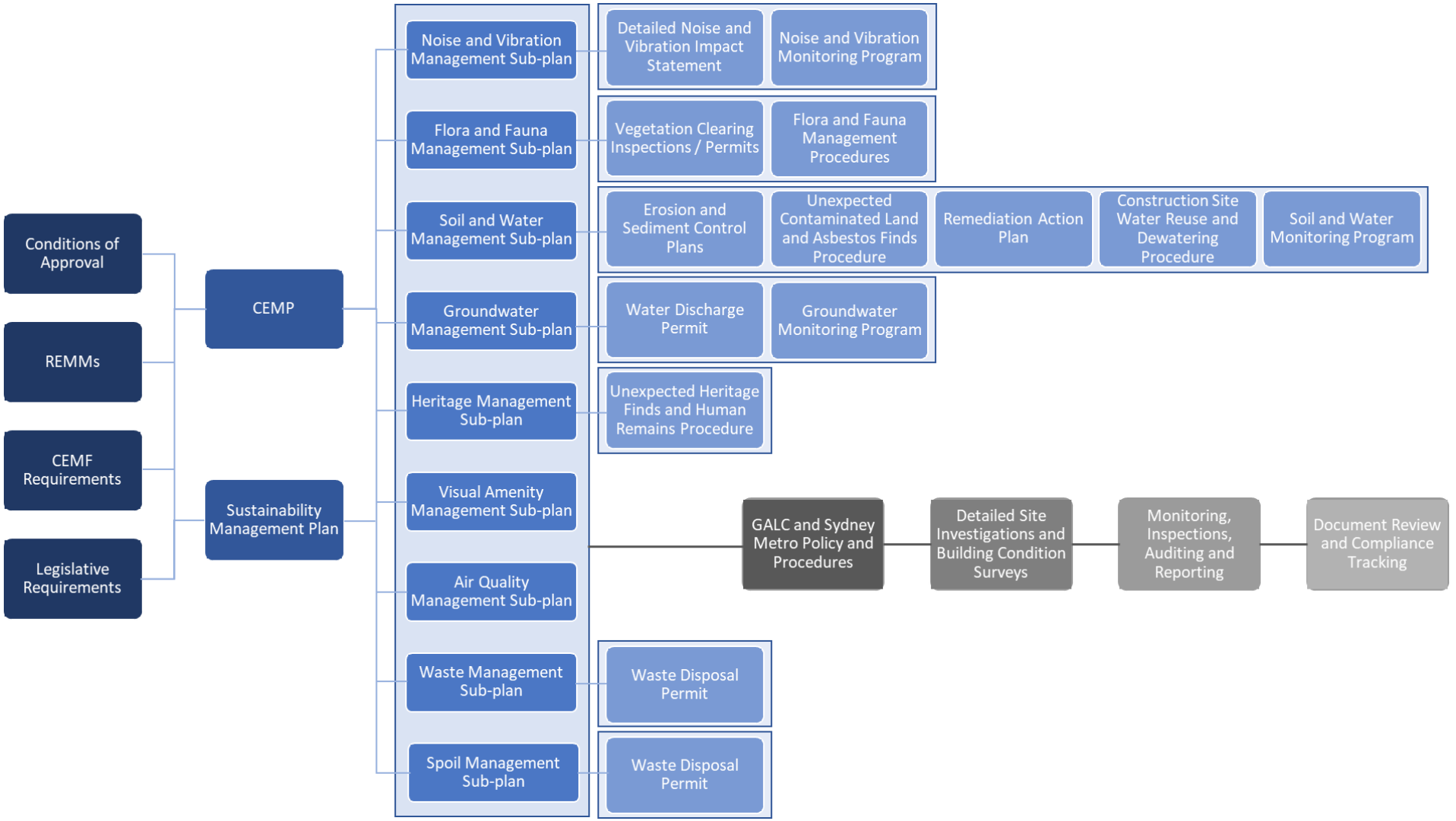

Figure 3: Relationship between the CEMP and other EMS Documents

4 REVIEW AND APPROVAL

4.1 Internal Review and Approval

Draft versions of this plan will be reviewed by the Environmental Manager to ensure it meets the requirements of the SMW WTP Environment Policy, contract, specifications and standards.

The plan will be approved for use in delivering the Project by the Project Director. Evidence of initial review and approval is by signatures on the Quality Assurance Statement on page one of this document. Documents and records other than the CEMP and Sub-plans as outlined below will be reviewed and endorsed by the Environment and Sustainability Lead and approved by the Project Director. This includes but is not limited to procedures and forms.

4.2 External Review and Approval

Final draft documents will be provided to Sydney Metro, the ER, AA and other relevant stakeholders for comment. Upon receipt of any comments, GALC will amend the document to reflect the comments as required and document changes and justification as to why they may not be made. This evidence will be retained by GALC.

This CEMP, CEMP sub-plans and Construction Monitoring Programs have been expressly nominated by the Planning Secretary to be endorsed by the ER, and the AA in the case of the Noise and Vibration Management Sub-plan. Several CEMP sub-plans and Construction Monitoring Programs will also require approval by DPE, refer to Section 3.2 and Section 3.3.

This CEMP, CEMP sub-plans and Construction Monitoring Programs will be submitted to the ER for endorsement no later than one (1) month before the commencement of construction for the Project, or where construction is phased no later than one (1) month before the commencement of that phase.

Construction will not commence until the CEMP and CEMP sub-plans have been endorsed by the ER, unless otherwise agreed by the Planning Secretary. Additionally, construction will not commence until the ER has endorsed all of the required Construction Monitoring Programs, and all relevant baseline data for the specific construction activity has been collected. Additionally, construction will not commence until the ER has endorsed all of the required Construction Monitoring Programs, and all relevant baseline data for the specific construction activity has been collected. The ER will approve any minor amendments to this Plan. Any amendments which are more than minor will be approved by the Planning Secretary.

This CEMP, as submitted to the ER, including any minor amendments approved by the ER, will be implemented for the duration of construction.

4.3 Review and Continual Improvement

The Project Management Team will review the status and adequacy of the EMS including this CEMP. The objective of the review will be to ensure that it meets current Sydney Metro and GALC requirements as well as relevant environmental standards.

GALC will undertake an internal audit within the first three months from commencement of construction and then annually for the CEMP and associated Sub-plans.

Additionally, continual review and improvement of the EMS will occur in response to:

- Issues raised during environmental inspections and/or monitoring
- Change in scope of works
- Changes in legislation
- Environmental incidents (Class 1 and Class 2, as defined in Section 12.2)
- Environmental non-conformances.

The Plan and an analysis of key environmental risks as defined in Attachment 4 will be reviewed during the course of the Project in response to:

- Opportunities identified by Sydney Metro or the ER
- Changes to the Gamuda Australia EMS
- Non-compliances, incidents or recurring issues
- In response to internal or external audits
- Changes in legislation
- Changes in the risk assessment
- Changes in environmental management practices or technology.

A review will be undertaken by the GALC Senior Management Team during the HSEQ relaunch process, which is undertaken at six-monthly intervals.

For the duration of the Project, the ER will consider any minor amendments made to the CEMP, associated sub-plans and construction monitoring programs without increasing impacts to nearby sensitive receivers. The amended document will be consistent with the MCoA, CEMP, associated sub-plans and construction monitoring programs approved by the Planning Secretary. If satisfied that such amendment is necessary, the ER will approve the amendment. This does not include any modifications to the MCoA.

4.4 Document Control

All project documentation, including environmental records, will be controlled in accordance with GALC Project requirements using the project electronic document management system (Scenario).

Environmental records will be:

- Kept as objective evidence of compliance with environmental requirements
- Filed on the project drive and in the Document Control System, Scenario, and made available to all Project personnel, subcontractors, and the Client.

Typical records may include:

- Site inspections, audits, monitoring, reviews or remedial actions
- Compliance tracking reports
- Induction and training records
- 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.

Updates to this plan will be numbered consecutively and issued to holders of controlled copies.

Revised versions of the CEMP and Sub-plans will be updated on GALC's internal document management system, and notifications sent to the Project team.

The master ‘controlled’ CEMP 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 CEMP will be considered as ‘uncontrolled’.

5 LEGAL AND OTHER REQUIREMENTS

5.1 Legislation

An assessment of the relevant legislative instruments has been conducted and listed in a register in Attachment 2 of this CEMP. This register will be reviewed at regular intervals, such as during management reviews and updated accordingly. Changes to the register will be communicated to the wider project team through toolbox talks and other specific training as detailed in Section 9 of this CEMP.

5.2 Approvals, Permits and Licenses

The primary approvals required for the Project are detailed in Table 7. A complete list of approval and legislative requirements are included in Attachment 2. The list of Project permits and licenses will be maintained at Attachment 3. A copy of relevant permits, licences and any planning approvals relevant to GALC's activities will be kept on site.

Table 7: Primary approvals

Approval	Legislation	Regulatory Authority	Approval holder	Status
Planning Approval	*Environmental Planning and Assessment Act 1979* (NSW)	DPE	Sydney Metro	The Planning Approval was issued on March 11, 2021.
Planning Approval Modifications	*Environmental Planning and Assessment Act 1979* (NSW)	DPE	Sydney Metro	A modification will be sought if variations are proposed where impacts would be inconsistent with the Planning Approval.
Environment Protection License	*Protection of the Environment Operations Act, 1997 (POEO Act)*	EPA	Gamuda Australia	EPL to be sought following contract award.
Road Occupancy License	*Roads Act 1993 (NSW)*	TfNSW	GALC	Applies to works impacting classified roads. Requested as necessary.
Out of Hours Works (OOHW) Approval	N/A	DPE, ER, AA and/or Sydney Metro	GALC	Applies to select elements of works. Requested as necessary in accordance with the OOHW Protocol.

5.3 References, Standards, Codes and Regulations

- In addition to legislative requirements, environmental publications, standards, codes of practice and guidelines are relevant to the Project and will be adhered to throughout construction of the Project. Examples include:
- ISO 14001:2015 Environmental Management Systems – Requirements with Guidelines for use
- Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2001)
- Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009)
- Managing Urban Stormwater: Soil and Construction (Landcom, 2008)
- AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting
- Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2008)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality
- Sydney Metro Construction Environmental Management Framework, 2020
- Sydney Metro Environmental Incident and Non-Compliance Reporting Procedure, 2019
- Sydney Metro Planning Approval Consistency Assessment Procedure, 2019
- Sydney Metro Construction Traffic Management Framework
- Sydney Metro Construction Noise and Vibration Standard
- Infrastructure Sustainability Council's (ISC) IS Rating Tool v1.2 requirements.

Other aspect specific guidelines are discussed in Sub-plans and other project management plans.

5.4 Conditions of Approval and Construction Environmental Management Framework

Attachment 1 lists each MCoA relating to the development of this CEMP and indicates where the condition/measure is addressed within the CEMP and sub-plans. Requirements of the Revised Environmental Management Measures (REMMs), CEMF and *Guideline for the Preparation of Environmental Management Plans* (DIPNR, 2004) have also been addressed in Attachment 1.

5.5 Assessment of Consistency

Changes to the Project may require an assessment to determine consistency with the Project Approval and Environmental Documents. This assessment will be carried out in accordance with the Sydney Metro Planning Approval Consistency Assessment Procedure (SM-17-00000103).

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 construction works and operational phase (including, but not necessarily limited to traffic, noise and vibration, air quality, soil and water, ecology, heritage and social and amenity impacts upon sensitive receivers), details of mitigation measures, 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).

6 POLICY

GALC has prepared a Project Environmental Policy that will be displayed at prominent locations on the project site, communicated to site personnel during induction and training, and made accessible to clients and concerned/interested members of the public. It aligns with the Sydney Metro Environment & Sustainability Policy. Refer to Attachment 10 for the full policy. All personnel associated with the project, including subcontractors, must comply with the spirit and intent of the policy.

6.1 SMW WTP Environment Policy

6.1.1 Our Commitment

GALC values the natural environment and its cultural heritage and is committed to providing net positive environmental outcomes. We support ecologically sustainable development and will adopt responsible environmental practices in all our business operations.

6.1.2 Our Approach

GALC addresses its commitment to environmental sustainability and conservation through the consistent implementation of its Environmental Management System and by the following:

- Comply with relevant legal and regulatory obligations, standards, licences, and client requirements.
- Integrate environmental aspects into all project decision making, including planning, design, construction, and delivery.
- Enhance the awareness and knowledge of our employees, subcontractors, and supply chain to promote a shared culture of environmental accountability.
- Establish environmental objectives and targets, and transparently communicate our performance to ensure we continually improve.
- Focus on identifying and implementing opportunities throughout design and construction to identify and implement operational resource use efficiencies.
- Take proactive steps to prevent adverse environmental and heritage impacts.
- Minimise waste generation as far as reasonably practicable and prioritise the re-use and recycling of surplus materials.
- Investigate significant environment incidents and take immediate actions to prevent recurrence.
- Work collaboratively with all stakeholders to leave a positive environment and heritage legacy.

7 RESPONSIBILITIES AND AUTHORITIES

7.1 Key Personnel

The proposed organisational structure of the GALC Environment and Sustainability team and their interface with the project team and lines of communications with Sydney Metro are outlined in Figure 4 below.

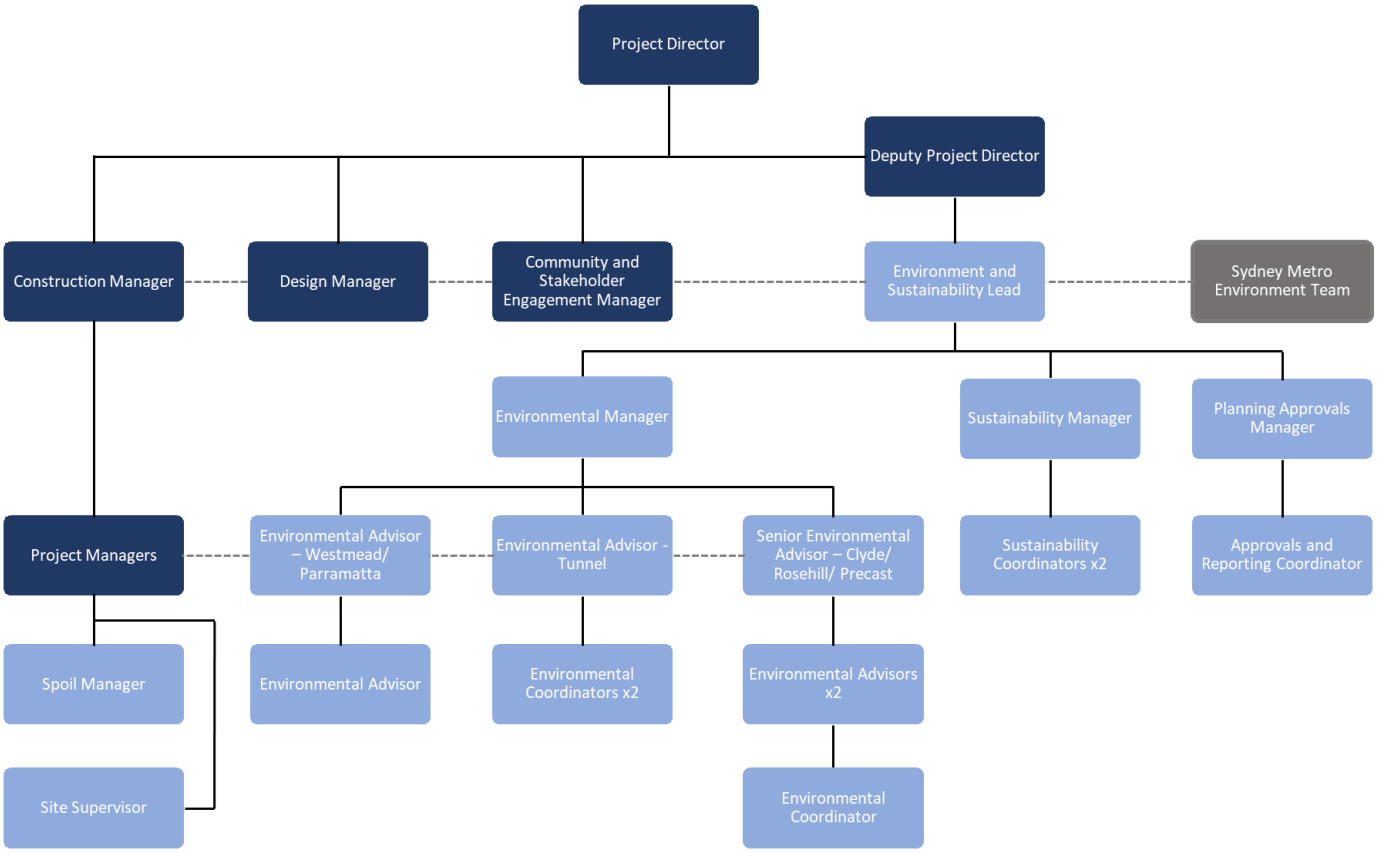

Figure 4: GALC Environment and Sustainability team

Key responsibilities of the environment personnel are detailed in the following tables.

Table 8: Environment and Sustainability Lead

Environment and Sustainability Lead	
Authority	• Authorised to stop work in the event of potential environmental harm • Resolve major issues which cannot be resolved by the Environmental Manager and the project team • Liaise directly with the Environment Representative and Acoustic Advisor as appropriate to facilitate any environmental management requirements, including those identified within the Planning Approvals.
Responsibility	• Provide adequate resources to meet environmental objectives • Primary contact on environmental and sustainability matters to Sydney Metro, the Acoustic Advisor, and Environmental Representative. • Provide environmental support to the project team

Environment and Sustainability Lead	
	• Coordinate internal audits • Report to management on environmental performance and breaches
Lines of Communication	• Reports to Deputy Project Director
Minimum skill level	• Must have tertiary qualifications in environmental engineering / science along with relevant experience working in environmental management roles in Australia. • Infrastructure Sustainability Accredited Professional preferred. • Must complete corporate and project induction covering environmental responsibilities and Gamuda's environmental management system.

Table 9: Environmental Manager

Environmental Manager	
Authority	• Authorised to endorse documentation for environment/sustainability management and approvals before submission to Sydney Metro • Authorise to obtain relevant licenses and approvals for works • Authorised to endorse ECMs
Responsibility	• Ensures that the CEMP is effectively established, implemented and maintained at the project level • Ensures relevant licences, approvals and permits are obtained. • Ensures compliance with all relevant statutes, regulations, rules, procedures, standards and policies • Ensures that all personnel on site receive appropriate environmental induction and training and are aware of their environmental responsibilities under relevant legislation and the contract • Ensures that environmental records and files are collected and maintained • Conducts regular compliance checking as required by this CEMP • Ensures that non-conformances and environmental incidents are recorded and written reports are provided to the Client's Representative and Environmental Manager within 24 hours. Liaises with the required stakeholders to confirm the nature of the corrective action required and comply with the timeframe within which corrective actions must occur. • Ensures environmental controls, materials and equipment are maintained • Maintains an ongoing relationship with the Environmental Representative by coordinating site inspections and maintaining open communication regarding on-site activities and environmental activities.
Lines of Communication	• Reports to the Environment and Sustainability Lead • Reports to the Project Systems Manager on the performance of the system and improvement opportunities. • Liaises with the Principal's Environmental Representative and/or Superintendent on environmental issues, including written notification of non-conformances (incidents, emergencies or deviations from the CEMP) • Liaises with the Acoustic Advisor and Environmental Representative on environmental and sustainability matters.

Environmental Manager	
Minimum skill level	• Tertiary qualification in environmental science, engineering or equivalent • Minimum 10 years' experience post qualification, with extensive experience in the preparation and implementation of environmental management systems and plans • Recent relevant experience in environmental management on major infrastructure projects • Infrastructure Sustainability Accredited Professional preferred. • Must complete corporate and project induction covering environmental responsibilities and Gamuda's environmental management system. • Must have completed Erosion and Sediment Control Training

Table 10: Senior Environment Advisor

Senior Environment Advisor	
Authority	• Authorised to develop environmental planning and approval documents to meet project requirements, in liaison with the Environment and Sustainability Lead and the Environmental Manager
Responsibility	• Ensures that the CEMP and EPL are effectively implemented and maintained at the project level • Ensures compliance with all relevant statutes, regulations, rules, procedures, standards and policies • Delivers environmental induction and training and ensures all staff are aware of environmental responsibilities under legislation and the contract • Ensures that environmental records and files are collected and maintained • Conducts regular compliance checking as required by this CEMP • Ensures that non-conformances and environmental incidents are recorded and written reports are provided to the Senior Environmental Manager for submission to the Client's Representative and Environmental Manager within 24 hours. Liaises with the required stakeholders to confirm the nature of the corrective action required and comply with the timeframe within which corrective actions must occur. • Ensures environmental controls, materials and equipment are maintained • Maintains an ongoing relationship with the Environmental Representative by participating in site inspections and maintaining open communication regarding on-site activities and environmental activities.
Lines of Communication	• Reports to the Environmental Manager • Liaises with the Acoustic Advisor and Environmental Representative on environmental and sustainability matters.
Minimum skill level	• Must have tertiary qualifications in environmental planning/ engineering/science along with relevant experience working in environmental management roles in Australia. • Infrastructure Sustainability Accredited Professional preferred. • Must complete corporate and project induction covering environmental responsibilities and Gamuda's environmental management system.

Table 11: Planning Approvals Manager

Planning Approvals Manager	
Authority	• Authorised to develop environmental planning and approval documents to meet project requirements, in liaison with the Environment and Sustainability Lead and the Environmental Manager
Responsibility	• Development of CEMP and sub plans ensuring they meet requirements • Development of Environmental Protection Licence Application • Development of Consistency Assessments and other environmental approvals as required. • Provides support to the project team to enable them to meet their environmental commitments
Lines of Communication	• Reports to the Environment and Sustainability Lead • Liaises with agencies and LGAs during the development of the CEMP.
Minimum skill level	• Must have tertiary qualifications in environmental planning/science and relevant environmental management experience in Australia. • Infrastructure Sustainability Accredited Professional preferred. • Must complete corporate and project induction covering environmental responsibilities and Gamuda's environmental management system.

Table 12: Environment/Approvals Coordinator/Advisor

Environment/Approvals Coordinator/Advisor	
Authority	• Authorised to undertake onsite inspections • Intervene where an environmental incident has occurred or is likely to occur
Responsibility	• Delivery of toolbox / prestart presentation (or other specific training) to inform work crews of the controls documented in the ECMs • Perform regular on-site liaison and inspections • Provide environmental advice and assistance to construction personnel • Manage implementation of CEMP and sub-plans • Respond to environmental incidents and non-conformances
Lines of Communication	• Reports to Senior Environmental Advisor and Planning Approvals Manager.
Minimum skill level	• Must have tertiary qualifications in environmental planning/science and relevant environmental management experience in Australia. • Must complete corporate and project induction covering environmental responsibilities and Gamuda's environmental management system.

Responsibility and Authorities for other key roles included in Table 13 below.

Table 13: Other key roles

Role	Key Responsibilities and Authorities
Project Director	• Project Director reports to the Steering Committee • Construction Manager reports to the Project Director • Ensures project responsibilities/authorities are defined/communicated

Role	Key Responsibilities and Authorities
	• Accountable for implementation of the CEMP and Sub-plans • Provides adequate resources to meet environmental objectives • Appoints/nominates and provides support for the Environment and Sustainability Lead • Approves the CEMP • Reports to Steering Committee on the performance of the system and environmental breaches • Reports environmental incidents to the client / authorities as required • Authorise expenditure on environmental issues within limits of authority • Resolve major issues which cannot be resolved by the Deputy PD • Must complete corporate and project induction covering environmental responsibilities and Gamuda's environmental management system.
Deputy Project Director	• Ensures that the CEMP is effectively implemented and maintained • Takes action to resolve environmental non-conformances and incidents • 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 • Reports to senior management on the performance of the system and environmental breaches • Ensures suppliers and subcontractors comply with requirements • Resolve major issues which cannot be resolved by the Environment and Sustainability Lead • Must complete corporate and project induction covering environmental responsibilities and Gamuda's environmental management system.
Construction Manager	• Manage construction works in accordance with the Planning Approval and obligations • Ensures compliance with this plan, Sub-plans, procedures and ECMs • Support and integrate sustainability initiatives and tracking • Work collaboratively with environment teams to resolve incidents safely
Design Manager	• Ensure design development is in accordance with the Planning Approval and obligations • Provide input into further assessment as required • Support and integrate sustainability initiatives and tracking
Stakeholder and Community Engagement Manager	• Manages key stakeholder relationships, including in relation to any visual amenity impacts throughout construction • Provision of strategic advice to the leadership team • Identify and mitigate reputational risks, including any relating to construction impacts • Accountable for crisis and incident communications
Site Supervisor / Site Foreman	• Ensuring relevant plans, procedures, objectives and targets, and Environmental Controls Maps are explained to personnel and a record of understating is obtained prior to personnel starting the activity work • Conducting works to minimise environmental impacts and achieve sustainability objectives

Role	Key Responsibilities and Authorities
	• Taking preventative action to eliminate or minimise all environmental hazards as advised by the Environment Manager • Provide resources for the implementation of corrective actions for non-conformances resulting from investigations, incidents, hazards, injuries and near misses • Complying with any responsibilities as assigned in project environmental documentation and associated procedures • Disseminating environmental risk management and emergency procedures during site induction and pre-start meetings • Responsible for checking that environmental controls remain effective, through maintenance, and that field personnel are provided with appropriate environmental training • Stop work immediately if an unacceptable impact on the environment is likely to occur.
Utilities Coordination Manager	• Manage and coordinate the utility work for the duration of the Project delivery in accordance with MCoA D102 • Interact with the Environment and Sustainability Team, and Communications Team as required • Responsible for the identification of utilities, services and other infrastructure potentially affected by construction works affecting them and determine requirements for access to, diversion protection and / or support.
Sustainability Manager	• Maintain and manage the overall sustainability performance of the project • Coordinate and audit ISCA performance, and manage overall delivery of ISCA documentation • Interact with the Environment Team, and Communications Team as required • Manage sustainability team
Quality Manager	• Maintain and manage document certification • Interact with the Environment and Sustainability Team, and Communications Team as required
Commercial Manager	• Manages contracts between GALC and sub-contractors • Ensures all contracts for outsourced construction services comply with the environmental controls identified in this CEMP and associated sub-plans
Interface Manager	• Manages the interface between GALC and external parties

7.2 Specialist Consultants

A number of specialist environmental consultants will support GALC to provide expert advice and assistance in developing and delivering the CEMP and Sub-plans. Proposed consultants will include those outlined in Table 14. If required, GALC will seek expert advice from additional expert consultants during the delivery of the works.

Table 14: Specialist consultants

Environmental Aspect	Consultant	Area of advice, as required
Contamination	Design Joint Venture Epic Environmental	Detailed Site Investigations Remediation Action Plans Validation Reports
EPA Accredited Auditor	Geosyntec	Auditing in accordance with the *Contaminated Land Management Act 1997* (CLM Act)
Noise and Vibration	SLR Consulting	Noise and Vibration Management
Archaeology	GML Umwelt	Aboriginal and non-Aboriginal Archaeology
Built Heritage	GML Umwelt	Heritage Management
Ecology	Design Joint Venture	Flora and Fauna Management
Creek Restoration	Soil Conservation Sevices Tract (Landscape Architects)	Creek restoration / naturalisation

7.3 Sydney Metro

Transport for NSW (TfNSW) is the Proponent under the EP&A Act with ultimate responsibility for compliance with the Planning Approval. A specialised delivery office, Sydney Metro, has been established as part of TfNSW to manage the planning, procurement and delivery of the Sydney Metro Network.

The Sydney Metro Delivery Environment and Sustainability team will ensure compliance with the Project Planning Approval obligations held by TfNSW, as will be set out in the Phasing Report to be prepared in accordance with MCoA A10.

7.4 Regulatory and Other Key Stakeholders

7.4.1 Environmental Representative

The Environmental Representative (ER) is approved by the Planning Secretary and engaged by Sydney Metro. The ER was not involved in development of the Planning Approval documents (including the EIS) and is independent of the design and construction personnel.

The role of the ER is to:

a) Receive and respond to communication from the Planning Secretary in relation to the environmental performance of Stage 1 of the CSSI
b) Consider and inform the Planning Secretary on matters specified in the conditions of this approval
c) Consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community

d) Review documents identified in Conditions A10, A17, A19, C1, C5 and C14 of this schedule and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so:
   i) endorse the documents before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or
   ii) endorse the documents before the implementation of such documents (if those documents are only required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary / Department)
e) For documents that are required to be submitted to the Planning Secretary / Department for information under (d)(ii) above, the documents must be submitted as soon as practicable to the Planning Secretary / Department after endorsement by the ER, unless otherwise agreed by the Planning Secretary
f) Regularly monitor the implementation of the documents listed in Conditions A10, A17, A19, C1, C5 and C14 of this schedule to ensure implementation is being carried out in accordance with the document and the conditions of this approval;
g) As may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A39 of this schedule
h) As may be requested by the Planning Secretary, assist in the resolution of community complaints received directly by the Department
i) Consider or assess the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities as required by Condition A21 of this schedule
j) Consider any minor amendments to be made to the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs without increasing impacts to nearby sensitive receivers, and are consistent with the conditions of this approval and the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the conditions of this approval
k) Prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing the information set out in the Environmental Representative Protocol under the heading “Environmental Representative Monthly Reports”. The Environmental Representative Monthly Report must be submitted within seven (7) days following the end of each month for the duration of the ER’s engagement for Stage 1 of the CSSI, or as otherwise agreed by the Planning Secretary
l) Assess the impacts of activities as required by the Low Impact Work definition.

They are the principle point of advice for the environmental management of the delivery of the Project. GALC will:

- Immediately notify the ER of all environmental incidents and non-compliances
- Provide a copy of the Complaints Register on a weekly basis or as requested
- Provide relevant information and documents as requested by the ER to perform their functions
- Provide access to the site as reasonably required to allow the ER to perform its functions under the Planning Approval
- Update this Plan to address any relevant requirements and recommendations of the ER.

7.4.2 Acoustics Advisor

The Acoustics Advisor (AA) is approved by the Planning Secretary and engaged by Sydney Metro. The AA is independent of the design and construction personnel.

The role of the AA is to oversee compliance and provide independent noise and vibration advice in accordance with the Planning Approval. The AA's role is also includes the following:

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

GALC will:

- Provide access to noise and vibration monitoring activity as they take place
- Provide access to the Complaints Register if requested
- Submit noise and vibration plans, assessments, monitoring reports and data analyses undertaken for review
- Consider any recommendations to improve practices and demonstrate why any recommendation is not adopted.

Further information about the role of the AA is included in the Noise and Vibration Management Sub-plan.

7.4.3 Environment Protection Authority

The Environment Protection Authority (EPA) has powers under a range of legislation and is the agency primarily responsible for administering the POEO Act. The Project will require an environmental protection licence (EPL) as the construction activities are consistent with those defined by Schedule 1 of the POEO Act as "Railway Activities – Railway Infrastructure Construction". GALC will:

- Work closely with the EPA to obtain and hold an EPL for the works
- Notify the EPA in the event of an incident in accordance with relevant legislation and this plan
- Report to the EPA as required by the EPL
- Provide access to the site as reasonably required.

8 RISK ANALYSIS AND CONTROL

8.1 Risk Analysis

Environmental and community risks associated with the Project guide the development of this CEMP and Sub-plans. The environmental risk analysis that leads to the identification of these risks, is based on the EIS and other Planning Approval Documentation and further information gathered as the Project progresses. An Environmental Risk analysis will be conducted in accordance with the EMS, **GA-MSP-005 Risk Management.**

A number of key risks have been initially documented in Table 15. The results of the detailed environmental risk analysis are comprehensively documented in Attachment 4. Activities, aspects or impacts that represent a high residual risk must be reviewed/redesigned or have approval from the Gamuda Australia Head of Health, Safety, Environment and Quality.

Prior to commencement of construction works for the Project, a Risk Workshop will be undertaken with all relevant stakeholders to inform the CEMP and CEMP sub-plans. The impacts identified in the CEMP sub-plans will be revised following the environmental risk assessment workshop. The environmental risk analysis in Attachment 4 will be updated where necessary following the workshop.

The CEMP sub-plans document the measures to be implemented for mitigating the key risks identified in Attachment 4. These measures will be developed and implemented with guidance from the SMART principles:

- **Specific –** each sub-plan includes a suite of mitigation and management measures, which have been developed for the potential environmental impacts associated with the Project construction works.
- **Measurable –** Project objectives and targets have been identified in each sub-plan to minimise environmental impacts. Measurement tools have been provided to review how targets are being met.
- **Achievable –** mitigation and management measures, as well as compliance management measures, have been reviewed by Sydney Metro and the ER. Consultation has occurred with relevant stakeholders.
- **Realistic –** roles and responsibilities have been developed to allocate resources for meeting the mitigation and management measures, as well as compliance management measures.
- **Timely -** mitigation and management measures, as well as compliance management measures, only apply to works undertaken during construction of the Project.

The key environmental risks as defined in Attachment 4 will be reviewed as and when required during the course of the Project as outlined throughout this CEMP and specifically in Section 4.3.

Table 15: Initial key environmental risks

Risk	Consequence	Likelihood	Risk rating	Mitigation	Reference	Responsible	Consequence	Likelihood	Residual rating
Non-compliance with this CEMP resulting in environmental impact or complaints	Significant	Possible	High	Implement training of this CEMP to all personnel prior to works	Section 9	Environment and Sustainability Lead	Significant	Unlikely	Medium
				Review of CEMP for continual improvement and to prevent recurring issues	Section 4.3	Environment and Sustainability Lead	Significant	Unlikely	Medium
				Site inspections daily and weekly. Leadership inspections to be undertaken.	Section 11.1	Site Foreman Environmental Manager Environment Coordinator Senior Management	Significant	Unlikely	Medium
Unexpected find resulting in potential environmental impact	Significant	Possible	High	Sufficient detailed site investigation to be undertaken early in program.	Delivery Program	Environment Manager	Significant	Unlikely	Medium

Risk	Consequence	Likelihood	Risk rating	Mitigation	Reference	Responsible	Consequence	Likelihood	Residual rating
				Unexpected find protocol to be developed and included in training.	Heritage Management Sub-plan Soil and Water Management Sub-plan	Environment and Sustainability Lead	Significant	Unlikely	Medium
Cumulative impacts from projects in proximity and construction fatigue	Moderate	Likely	High	Work with Sydney Metro and other stakeholder groups (eg TTLG) to coordinate works and road closures	Traffic Management Plan	Traffic Manager	Moderate	Unlikely	Low
				Pro-active engagement across a range of mediums to ensure capturing the greatest community	Community Communications Strategy	Stakeholder and Community Engagement Manager	Moderate	Possible	Medium
				Identify designated haulage routes and site access points, with consideration of heavy vehicle movement for other projects	Traffic Management Plan	Traffic Manager	Moderate	Possible	Medium

Risk	Consequence	Likelihood	Risk rating	Mitigation	Reference	Responsible	Consequence	Likelihood	Residual rating
Impact on visual amenity	Moderate	Likely	High	In addition to REMMs, seek opportunities for community input to hoardings through Community Benefit Plan	Community Benefit Plan	Sustainability Manager	Moderate	Possible	Medium
Noise and Vibration	Significant	Likely	High	Manage noise vibration at source and minimise transmission where reasonable and feasible prior to managing noise and vibration at receiver	Construction Noise and Vibration Management Plan	Environment Manager	Significant	Possible	Moderate
Contamination	Major	Likely	High	Detailed Site Investigations Remedial Action Plans Onsite management and reuse	Soil and Water Management Plan Demolition Management Spoil Disposal Strategy	Environmental Manager Project Managers	Moderate	Possible	Moderate

8.2 Hold Points

The activities outlined in Table 16 will not proceed without objective review and approval by the nominated authority. These activities are considered hold points. They will be incorporated into the working plans for the project (SWMS, work instructions, construction methodologies).

Table 16: Hold points

Hold Point	Release of Hold Point	By Who
Construction	Construction Environmental Management Plan and Sub-plans have been developed, reviewed and approved prior to the commencement on site	DPE
Vegetation clearing / ground disturbance	Pre-clearing inspection	Qualified Ecologist
	Erosion and sediment control plan	Contractor's Environmental Manager or delegate
Discharge of water	Water tested to verify compliance and approval to discharge	Contractor's Environment Manager or delegate
Out of hours works	Noise Assessment	Contractor's Environment Manager or delegate
Use of local roads by heavy vehicles	Road Dilapidation Report	Appropriate Professional nominated by Principal Contractor
Construction identified as affecting buildings	Building Condition Survey	Appropriate Professional nominated by Principal Contractor

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

8.3 Environmental Procedures and Forms

Relevant environmental procedures, permits and forms will be utilised on the Project to address specific issues or activities, including:

- Out-of-Hours Work Permit
- Vegetation Disturbance Permit
- Permit to Enter a 'No-Go Zone'
- Water Discharge Permit
- Environmental Inspection Checklist
- Environmental Incident and Non-Compliance Reporting Procedure
- Unexpected Finds and Human Remains Procedure
- Animal Handling Procedure
- Microbat Management Procedure
- Vegetation Clearing Procedure
- Weed and Pathogen Management Procedure

- Unexpected Contaminated Land and Asbestos Finds Procedure.

Note: this is an indicative list only. A full list of procedures, permits, registers and forms relevant to this Project will be developed as the construction design progresses.

The procedures will include:

- Description of the work tasks relevant to that activity
- Potential impacts associated with the task, including a risk rating and mitigation measures to manage the potential impact
- Responsibility for each task and implementation of each mitigation measure.

8.4 Environmental Control Map

The project Environmental Control Maps (ECMs) are prepared to assist in the planning and delivery of the project. They are specific to a site or work area and outline the location of protection measures, monitoring requirements, environmental obligations and environmentally sensitive areas. It is the practical application of the proposed control measures and an important tool to communicate these to all personnel including subcontractors. They include as a minimum:

- Site illustration including but not limited to:
  - worksite layout and boundary, including entry/exit points, internal roads and clearing limits
  - adjoining land use and nearest noise-sensitive receivers
  - environmental control measures
  - location and type of sediment and erosion control measures, including size/capacity of detention basins and wheel wash facilities (unless a separate Erosion and Sediment Control Plan has been developed, in which case this will be referenced)
  - location of site offices, amenities and worker parking
  - location of spill containment and clean-up equipment
  - location of worksite waste management facilities
  - location of environmentally sensitive areas (e.g. threatened species, 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
- Document control details
- Hours of work applicable to the worksite (including deliveries and any restrictions on high noise generating activities)
- Specific environmental management requirements – licences, approvals, permit conditions
- Environmental procedures, approvals or license are applicable
- Training and competency requirements for relevant workers
- Key environmental risk issues and the specific mitigation measures.

All workers attending a site will be inducted and trained in the requirements of the ECM. The ECM may be incorporated into the toolbox covering the Safe Work Method Statement for the activity. All workers are required to sign onto an ECM/SWMS as they start work on site. Where revisions are made to an ECM, all workers will need to be toolboxed on the requirements of that ECM and sign onto it before they can proceed with works. Short term visitors will be briefed on the ECM as part of their site induction and be required to sign onto the ECM prior to starting work on site that day.

It is noted that the Sydney Metro West ECMs are 'live' documents and will be updated to reflect the relevant works stage as works progress and will 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. Given the live nature of the ECMs they will not be appended to the CEMP, however the latest version will be stored on the document management system and on site. The ECMs will be endorsed by the Environment Manager and any minor changes made, as a result of day-to-day activities progressing on site, will be endorsed by the Environmental Manager.

8.5 Erosion and Sediment Control Plans

Erosion and sediment control measures will be guided by the Erosion and Sediment Control Plan procedure, which is detailed in the Soil and Water Management Sub-plan. This has been developed in accordance with the requirements of *Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Managing Urban Stormwater: Soils and Construction Volume 2A and 2D* (DECC 2008) (the "Blue Book').

9 TRAINING, AWARENESS AND COMPETENCE

9.1 Training Needs Analysis

An Environmental Training Needs Analysis has been undertaken by the Environmental Manager and the Workforce Development Manager during the CEMP planning phase. The analysis included an assessment of training skill level required and the potential for any gaps between required knowledge and actual knowledge levels. The analysis will inform the Training Management Plan. It will be particularly useful in identifying the need for target environmental awareness training across the project.

For each key environmental risk, relevant training requirements have been identified. A matrix was prepared listing all roles that hold environmental responsibility as detailed in this CEMP, against training requirements based on the environmental aspect that that role would encounter as part of its activities on this project (refer to Table 17). As a result, the matrix specifies the minimum training requirements for each role. It outlines all training courses or events and the frequency of that training.

The Workforce Development team along with the Environmental team will schedule and coordinate the training to be delivered to the identified team members as outlined in the training matrix.

The above teams will co-manage the matrix and update completion against the identified workforce participants. Participants will be sent calendar invites to notify them of the training, and attendance will be recorded within the Workforce Development records keeping system. Upon attendance, the matrix will be updated to reflect the training has been completed. The matrix will be reviewed on an ongoing basis to ensure people who were unable to attend and any new starters are captured and invited to the next session.

Personnel performing tasks that can cause significant environmental impacts will be selected on competency based on education, training and experience. 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.

Table 17: Training Needs Matrix

Training Topic / Course	Personnel															
	Project Director	Senior Managers	Superintendents	Engineers	Safety	Traffic Engineers	Quality, Systems and Digital	Environmental	Sustainability	Community Stakeholder and Engagement	Site Foreman / Supervisor	Leading Hands	Labourers	Subcontractors	Design	Administration
Project induction	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
CEMP onboarding	■	■	■	■	■	■	■	■	■	■	■				■	
Project approvals, licences, obligations and requirements	■	■		■		■		■	■	■						
Out of hours works approvals and permit processes and requirements		■	■	■	■	■		■		■	■			■		
Dewatering of sediment control basins / water treatment plants			■	■				■			■	■	■			
Environmental incident identification, response and management		■	■	■	■	■		■		■	■	■	■	■	■	
Erosion and sediment control techniques and practices				■	■	■		■			■	■	■	■		
Environmental noise and vibration monitoring				■	■			■		■	■	■		■		
Water treatment plant monitoring, alarms and response					■			■			■	■	■	■		
Environmental management obligations and due diligence	■	■	■					■		■						
Erosion and Sediment Control – Blue Book								■								
Practical erosion and sediment control for the workforce				■				■			■	■				
Selecting and installing erosion and sediment control measures				■				■			■	■				

Training Topic / Course	Personnel															
	Project Director	Senior Managers	Superintendents	Engineers	Safety	Traffic Engineers	Quality, Systems and Digital	Environmental	Sustainability	Community Stakeholder and Engagement	Site Foreman / Supervisor	Leading Hands	Labourers	Subcontractors	Design	Administration
Acid sulfate soils management for construction sites				■				■			■	■				
Noise and vibration monitoring for construction				■				■								
Vibration blast monitoring equipment								■								
Environmental sampling techniques								■				■				
Unexpected finds procedure and asbestos awareness			■	■	■		■	■		■	■	■	■	■		
Developing environmental monitoring programs								■								
Report writing skills				■	■			■		■						■
ICAM or similar incident investigation training		■	■	■	■			■		■						
Environmental Management Systems							■	■								
Environmental Management Systems Internal Auditor							■	■								
Lead Environmental Auditor								■								
ISAP – Infrastructure Sustainability Assessment Practitioner – ISCA		■						■	■						■	
Unreasonable Complaint Management								■		■						

9.2 Environmental Induction

All employees (including subcontractors) will attend a compulsory induction prior to works commencing on site. The environmental component of the induction will include the following:

- Training purpose and objectives
- Environmental Policy
- CEMP environmental objectives, targets and key performance indicators
- Individual authorities and responsibilities
- Potential consequences of departures from rules and responsibilities
- Approval conditions and licences and permit requirements
- Environmental emergency procedure and response
- Due diligence and duty of care requirements
- High risk activities and associated safeguards
- Location of sensitive receivers
- Incident response and reporting requirements
- Unexpected Finds Procedure: Heritage and Contamination Management
- Key environmental issues, Environmental management measures and working in or near environmentally sensitive areas
- Site specific issues including ECMs, their purpose, scope and use
- Protocols for interaction with the community and stakeholders including how to respond to media and procedures for posting on social media.

All staff on this project will be provided with training in environmental requirements. Initial training in the CEMP for key personnel will be undertaken prior to construction starting. CEMP training for new staff members will be completed as required prior to their commencement. A brief, short term induction will be used for visitors who will be accompanied by an inducted project personnel.

9.3 Daily Pre-start Meetings

The Site Foreman will deliver a daily pre-start meeting with the site workforce before the commencement of work each day. It will target new information beyond that included in the induction, high risk issues specific to the day's activities and emerging/recurring issues. It will cover environmental protection practices, no-go zones, environmental risks and hazards specific to the day's activities. Typically, the daily pre-start meetings would take around 10-15 minutes to deliver.

9.4 Targeted Environmental Awareness Training

Targeted training will be delivered to ensure environmental awareness continues throughout construction. It will be tailored to specific issues identified from training needs analysis or as part of ongoing continual improvement. Training in aspects outlined in Table 18 will be undertaken as the project progresses, with further details provided in the respective CEMP sub-plan. It will be scheduled to reflect the requirements of the construction program.

Table 18: Targeted Training

Aspect	Training Inclusion	Personnel Required	Timing/Frequency/ Means
Emergency Spill Response	• Use/location of spill kits • Spill control • Emergency response procedures • Identify hydraulic hose fatigue	Construction Personnel	Project Toolbox Talks
Incident Management and Reporting	• Incident Management and Reporting Procedure	Construction Personnel	Project Toolbox Talks
Noise and Vibration Management	• The management of noise impacts • Out-of-Hours Work Protocols	Project engineers responsible for the implementation of noise and vibration mitigation measures	Prior to the commencement of activities with the potential for high noise impacts on sensitive receivers
Blue Book Training	• Erosion and sediment control training	Project engineers managing bulk earthworks at Clyde	Prior to commencement of bulk earthworks
Heritage Management	• The management of heritage impacts • Unexpected finds	Construction Personnel	Project Toolbox Talks
Flora and Fauna Management	• The management of flora and fauna impacts • Unexpected threatened species finds procedure • No-go Zones • Vegetation clearing procedure	Construction Personnel	Project Toolbox Talks
Air Quality Management	• The management of air quality impacts	Construction Personnel conducting dust generating activities	Prior to the commencement of activities with the potential for dust generation
Soil and Water Management	• Erosion and sediment controls • Acid sulfate soil management • Unexpected contaminated land and asbestos finds procedure • Construction site water reuse and dewatering procedure	Construction Personnel	Project Toolbox Talks
Waste Management	• The management of waste	Construction Personnel	Project Toolbox Talks

Aspect	Training Inclusion	Personnel Required	Timing/Frequency/ Means
	• Waste recording and reporting • Waste classification • Stockpile management		
Spoil Management	• The management of spoil • Spoil recording and reporting • Spoil classification • Stockpile management	Construction Personnel	Project Toolbox Talks
Visual Amenity Management	• The management of visual amenity impacts • Light spill management • Stockpile management	Construction Personnel	Project Toolbox Talks

9.5 Training Records

Records of training in the induction and targeted environmental awareness training will be held by GALC in an Induction and Training Register. Records of attendance at pre-start meetings will be held on site, in the site office.

10 CONSULTATION AND COMMUNICATION

10.1 Internal Communication

Internal stakeholders include GALC employees/staff and subcontractors. General internal communication methods will depend on the urgency and nature of the information and include:

- Toolbox talks, employee inductions, and subject specific training
- Management reports
- Site inspection reports, audit reports and incident reports
- Noticeboards, notifications and alerts
- Site meetings and briefings.

10.2 External Communication

The stakeholders relevant to the EMS and the Project's compliance obligations include Sydney Metro, Government agencies such as DPE, EPA, TfNSW (Roads), TfNSW (Maritime), Sydney Trains, SOPA, Councils; members of the public (community), public interest groups and affected businesses and other relevant third-party agencies, authorities and organisations.

General external communication methods will include:

- The GALC Environment Manager, environment staff involved in managing compliance with the Planning Approvals, SMEs as requested, and the Stakeholder and Community Engagement Manager, will attend weekly environment and approvals meetings with Sydney Metro, the ER, the AA and other attendees as required
- All significant incidents notified to the client and ER/Approving Authority
- Monthly reporting to Sydney Metro (refer Section 11.7)
- Meetings and correspondence with interested parties (local councils and EPA) as necessary
- Discussions with adjoining landowners/neighbours, festival and event organisers and the community who may be affected by the project (including power and utility interruptions which would be scheduled before or after typical business hours where feasible and reasonable) in accordance with the Sydney Metro West Overarching Community Communications Strategy (OCCS); and the Community Communications Strategy and Business Management Plan
- Updates and specific notifications on the Project website to be established in accordance with MCoA B11
- Provide documented evidence to the Principal's Representative, or any independent party appointed through the Minister's MCoA, as required upon request.

In accordance with the requirements for consultation specified in the CEMF requirements, as well as MCoA C5 and C14 as it relates to the CEMP sub-plans and monitoring programs (refer Table 19 and Table 20), the following consultation approach will be undertaken:

1. Provide agencies with a copy of the final draft document for review and seek feedback
2. Present the proposed approach with regards to management measures specific to the activities relevant to the agencies
3. Update document in response to feedback received
4. Provide feedback to agencies demonstrating how comments have been closed out.

Evidence of consultation will be submitted to the Planning Secretary as required by MCoA A6, including:

- Documentation of the engagement with the identified party that has occurred before submitting the CEMP and CEMP sub-plans for approval
- A log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them
- Documentation of the follow-up with the identified party where feedback has not been provided to confirm that the party has none or has failed to provide feedback after repeated requests
- Outline of the issues raised by the identified party and how they have been addressed
- A description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.

Table 19: Stakeholders to be consulted in development of CEMP Sub-plans

CEMP Sub-plan	Agencies to be consulted
Noise and vibration	EPA, SOPA (in respect of Sydney Olympic Park), Cumberland City Council and City of Parramatta Council
Flora and Fauna	DPE EES, DPI Fisheries, SOPA (in respect of Sydney Olympic Park), Cumberland City Council and City of Parramatta Council
Soil and Water	DPE Water, Cumberland City Council, City of Parramatta Council and Sydney Water (if any Sydney Water assets are impacted)
Heritage (Non-Aboriginal and Aboriginal)	Heritage NSW, SOPA (in respect of Sydney Olympic Park), Cumberland City Council and City of Parramatta Council
Spoil	SOPA (in respect of Sydney Olympic Park), Cumberland City Council and City of Parramatta Council

Table 20: Stakeholders to be consulted in development of CEMP monitoring programs

Monitoring Program	Stakeholders	Regulation
Noise and vibration	EPA, SOPA (in respect of Sydney Olympic Park), Cumberland City Council and City of Parramatta Council	Planning Approval MCoA C14 and MCoA C16
Surface water quality	DPE Water, Cumberland City Council, City of Parramatta Council and Sydney Water (if any Sydney Water assets are impacted)	Planning Approval MCoA C14
Groundwater	DPE Water and SOPA (in respect of Sydney Olympic Park)	Planning Approval MCoA C14 and MCoA C17

11 MONITORING, INSPECTIONS AND REPORTING

Key characteristics of the project operations and activities which have an impact on the environment will be regularly monitored and measured. This may include issue-specific environmental monitoring, recording of information to track performance, monitoring operational controls and level of conformance with objectives and targets.

11.1 Environmental Inspections

The Site Foreman will be responsible for ongoing surveillance and maintenance of environmental mitigation measures for the site.

GALC's Environmental Inspection Report Form (Attachment 6) will be used to monitor environmental issues on site and issued to the Project Director. The report will be completed by the Environment Coordinator on a weekly basis.

Additionally, a supervisor's safety and environmental inspection will be completed periodically, by the Environmental Manager to monitor environmental issues on site and will be issued to the Project Director for review and endorsement.

Issues identified during environmental inspections requiring further action beyond normal practice or maintenance are to be logged into GALC's Assurance application. GALC's Assurance Database records, collates and distributes Health, Safety and Environmental (HSE) data. HSE Dashboards will be included as part of a Monthly Project Review and issued to the Gamuda Australia Head of Health, Safety, Environment and Quality and LOR Business Unit Managers on a monthly basis.

The following environmental issues/non-conformances are to be included within GALC's Assurance Database as corrective actions:

- Internal inspection outcomes that cannot be rectified immediately
- Incidents and associated corrective actions
- Internal audit observations/non-compliance
- Client audits or other notice of non-compliance
- Actions resulting from ER inspections
- Notices or action from regulatory authorities.

Where environmental inspection or monitoring outcomes are required to be logged into the GALC Assurance application, 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 Environmental Risk Action Plans to control potential impacts will be developed.

Weekly site inspections will be completed by the ER and Sydney Metro representatives, or at a frequency otherwise agreed with Sydney Metro and the ER. The Environmental Manager will be in attendance at any ER site inspections and will be responsible for actioning and responding to any identified corrective actions in accordance with the CAR Register timeframes outlined in Section 11.5 and as agreed with the ER.

11.2 Environmental Monitoring

In order to validate the predicted impacts of the Project and to measure the effectiveness of environmental controls, environmental monitoring will be undertaken.

Specifically, the Monitoring Programs outlined in Section 3.3 as specified in relevant approvals, licenses and permits, will be prepared in consultation with the relevant stakeholders and will be included in the relevant CEMP sub-plan. Consultation will be undertaken as outlined in Section 10.2. These programs will be implemented for the duration of construction.

These monitoring programs will provide the following:

- Details of baseline data available including the period of baseline monitoring
- Details of baseline data to be obtained and when
- Details of all monitoring of the project to be undertaken
- The parameters of the project to be monitored
- The frequency of monitoring to be undertaken
- The location of monitoring
- The reporting of monitoring results and analysis results against relevant criteria
- Details of the methods that will be used to analyse the monitoring data
- Procedures to identify and implement additional mitigation measures where the results of the monitoring indicated unacceptable project impacts
- A consideration of SMART principles
- Any consultation to be undertaken in relation to the monitoring programs
- Any specific requirements as required by MCoA C16 and C17.

The results of monitoring will be reviewed by the Environment Manager (or Coordinator as delegated) to identify any potential non-compliances or results that indicate nuisance, environmental harm or in relation to community complaints.

The Construction Monitoring Programs, as the ER has endorsed, including any minor amendments approved by the ER, will be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the ER, whichever is the greater.

Real-time monitoring will be in place for all surface construction sites. This will include SiteHive equipment, which monitors dust, noise and vibrational emissions.

The results of any monitoring undertaken as a requirement of a license or permit that is required to be published, will be published on the project website within 14 days of obtaining the results, or as otherwise specified on that license or permit. In addition, as per MCoA C23, the results of the Construction Monitoring Programs will be submitted to the Planning Secretary, ER and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.

11.3 Auditing

11.3.1 Independent Environmental Audits

The project EMS will be audited by an Independent External Auditor engaged by Sydney Metro. The Independent Audit Program will be undertaken in accordance with MCoA A39 to A42 and managed by Sydney Metro.

11.3.2 Internal audits

GALC will undertake an internal audit within the first three months from commencement of construction and then annually for the CEMP and related Sub-plans.

The scope of the audit will include but not be limited to:

- Compliance with the Planning Approval and any additional permits or licenses
- Compliance with the EMS, this CEMP and its Sub-plans and procedures
- Environmental training records
- Environmental monitoring and inspection results.

An internal audit schedule will be developed by GALC to align with SMW WTP Environment Policy requirements. It will allow for flexibility where necessary i.e. internal audits will not coincide with external audits.

Auditing of the project environmental requirements will be carried out in accordance with SMW WTP Environment Policy, AS/NZS ISO 14001:2016 Environmental management systems - Requirements with guidance for use and AS/NZS ISO 19011:2019– Guidelines for Auditing Management Systems. Audits will be undertaken by suitably qualified personnel within the Project team or as engaged by GALC.

Actions arising from the audit will be developed in consultation with the personnel involved in the audit and implementation overseen by the Environment and Sustainability Lead.

GALC has developed an audit schedule which includes internal and external audits. Facilitation of environmental audits will be led by the Environment and Sustainability Lead.

11.4 Non-Conformance

Non-conformance arising out of monitoring, inspections and audit outcomes will be recorded and addressed by raising a GALC Health, Safety, Environment and Quality Non-Conformance Report and managed in accordance with the Sydney Metro Environmental Incident and Non-Compliance Reporting Procedure. All actions will be centrally recorded and monitored within Velocity EHS, Gamuda's assurance software.

All Non-conformances will be reviewed to evaluate the need for action to prevent recurrence. Actions to review the non-conformance will include:

- Understand the nature of the nonconformity and the requirement it relates to
- Determining the causes of the nonconformity
- Determining if similar nonconformities exist, or could potentially occur
- Identify the need for corrective actions to ensure the compliance requirement is understood by the relevant project personnel and that the requirement is clearly documented. Corrective actions may include team communication such as alerts or toolbox talks, training, or review of this plan
- Review the effectiveness of any corrective action taken.
- Sydney Metro or the ER may also raise non-conformances against environmental requirements. In this event, form GA-FRM-HSEQ-015 Health, Safety, Environment Quality Non-Conformance Report will be raised and managed in accordance with the Sydney Metro Environmental Incident and Non-Compliance Reporting Procedure.

Sydney Metro will be advised of non-conformances in a timely manner. As per MCoA A45 and A46, the Planning Secretary will be notified in writing via the Major Projects website within seven (7) days after the Proponent becomes aware of any non-compliance with the conditions of the approval. A non-compliance notification must identify the CSSI (including the application number for it), set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have

been, or will be undertaken to address the non-compliance.. Non-conformances and their corrective actions will also be outlined in the Monthly Report (refer Section 11.7).

11.5 Corrective Actions

Corrective Actions arising from audits, inspections, non-conformances or incidents will be captured in a Corrective Actions Register to prevent recurrence or manage ongoing environmental risk. This register will track the action, when and how it was raised, who is responsible and timeframe for implementation. Corrective actions are differentiated by risk ranking. The nominated timeframes to resolve items on the register are as follows:

Table 21: Corrective Action Requests

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

Actions will be resolved within the required timeframe and closed in accordance with the Sydney Metro Environmental Incident and Non-Compliance Reporting Procedure.

The Environment Manager is responsible for the investigation, tracking and ensuring appropriate closeout of non-compliances, corrective, and preventative actions in accordance with GA-MSP-HSEQ-005 Audits, Inspection and Correction Action.

11.6 Compliance Tracking

Compliance with all relevant laws and approvals will be monitored throughout construction through the auditing program, monitoring and inspections. A compliance tracking report will be provided to Sydney Metro on a regular basis and will be in the form of a compliance table detailing all MCoAs, REMMs and other requirements as relevant. This will be in accordance with the Sydney Metro Overarching Compliance Tracking Program (SM-21-00004067).

GALC will provide Sydney Metro and the ER documented evidence that all MCoA and REMMs which have a pre-construction requirement, have been met and are compliant two weeks prior to the anticipated date for commencement of construction.

Compliance with the EPL will be tracked and recorded to ensure all license conditions are met. As may be required by the EPL, an annual report will be prepared which will include details of compliance and any non-conformance and corrective actions.

GALC will provide Sydney Metro and the ER with all documented evidence demonstrating compliance for each MCoA and REMMs prior to the completion of works. Documented evidence will be submitted via the Project Document Control System in a format specified by Sydney Metro.

11.7 Monthly Environmental Reporting

GALC will prepare a Monthly Progress Report to be submitted to Sydney Metro. The Report will include an environmental management section which will include:

- Compliance with environmental management requirements of this CEMP and other environmental law, approvals and licences

- Status of this CEMP and Sub-plans
- Status of consistency assessments anticipated or in preparation
- Environmental incidents or emergencies
- Summary of environmental inspections including a graphical representation of frequency of environmental issues identified monthly for the previous 12 months, including trend analysis
- The results of audits undertaken within the reporting period
- Corrective actions proposed in responding to non-conformances, audits, incidents and analysis of trends
- Detail of environmental training conducted and received.

12 EMERGENCIES AND INCIDENTS

12.1 Emergency Preparedness and Response

In the event of an emergency, the Project will follow processes for responding to minimise potential for environmental damage. The procedure is attached to this CEMP at Attachment 5. It will aim to:

- Plan actions which prevent or mitigate environmental harm in response to potential emergency situations, relevant to the consequence and magnitude of the emergency
- Respond to emergency situations including a list of resources and contact details available
- Reporting and reviewing requirements following an environmental emergency
- Test the emergency response throughout construction, including environmental response drills
- Review procedure effectiveness after emergency with actual/potential environmental hazard
- Need for training of the emergency environmental response

An Emergency Response Plan will be developed for all potential high risk environmental emergencies. Emergency response procedures and plans will be updated in response to any changes in approval, permits and licenses. A Pollution Incident Response Management Plan (PIRMP) will be developed, as part of the Emergency Response Plan, in accordance with the EPA Guidelines. The PIRMP will be kept on site.

Emergency Services contact numbers are to be displayed in the main site office. Initial Project Emergency contact numbers are included in Table 22:

Table 22: Emergency Contact Details

Contact	Phone Number	Address
EPA Pollution Line	131 555 or (02) 9995 5555 (if calling from outside NSW).	City of Parramatta, 10 Valentine Ave, Parramatta NSW 2150

12.2 Incident Classification and Notification

All Incidents will be classified by the Environment and Sustainability Lead in consultation with the Deputy Project Director in accordance ***GA-MSP-HSEQ-006 Incident Management and Reporting*** and the classifications outlined in Table 23 below.

All incident notification and reporting will be undertaken in accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure Version 5.1 (SM-17-00000096) (refer to Table 23), relevant licenses and legislation.

The Project Director, Deputy Project Director, Construction Manager and relevant Project Manager will be made aware of the incident as soon as possible.

In the event an actual or potential incident is reported through the Community Complaints line, the Environment Manager will be contacted immediately to respond and investigate.

Table 23: Environmental Incident Classification and Notification Requirements

Environmental Incident Classification		
GALC 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
Notification Requirements		
Report only • Verbally notify Sydney Metro of incidents immediately, followed by written notification to Sydney Metro and the ER within 24 hours of the incident • If required, GALC will notify the EPA and relevant authorities immediately.	*Notifiable* • Verbally notify Sydney Metro of incidents immediately, followed by written notification to Sydney Metro and the ER within 24 hours of the incident • Notify the EPA and relevant authorities immediately • Prepare an incident notification / non-conformance report and submit to Sydney Metro and the ER within 48 hours • Prepare an investigation report and submit to Sydney Metro and the ER within 7 days.	

12.2.1 Sydney Metro and DPE

The Project Director will immediately verbally notify Sydney Metro, followed by written notification within 24 hours of the incident occurring. In accordance with MCoA A43 and in order for Sydney Metro to comply with its incident notification requirements under the Planning Approval, the incident notification will include the location and general nature of the incident, any non-conformance with the Planning Approval and any corrective actions in relation to that non-conformance where relevant.

The Environmental Incident and Non-compliance Notification Report (SM ES-FT-403) or a similar and consistent form approved by Sydney Metro will be completed for all actual and potential Class 1 and 2 environmental incidents within 48 hours and forwarded to the Project Director to submit to Sydney Metro.

GALC will provide notification of the incident to Sydney Metro's Representative in accordance with Table 23.

12.2.2 Planning Secretary

The Planning Secretary will be notified by Sydney Metro via phone or in writing via the Major Projects website immediately after GALC and Sydney Metro become aware of an incident, in accordance with MCoA A43. Any notification via phone will be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call. The written notification will include the following information, which will be provided by GALC in a suitable timeframe for Sydney Metro to submit to the Planning Secretary:

- The CSSI and application number
- Details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident)
- How the incident was detected
- When GALC became aware of the incident
- Any actual or potential non-compliance with the conditions of approval
- What immediate steps were taken in relation to the incident
- Further action(s) that will be taken in relation to the incident
- A project contact for further communication regarding the incident.

An Incident Report will be submitted to the Planning Secretary within 30 days of the incident, and in accordance with the requirements set out in MCoA A44. This report will include:

- A summary of the incident
- Outcomes of an incident investigation, including identification of the cause of the incident
- Details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence
- Details of any communication with other stakeholders regarding the incident.

12.2.3 EPA and Other Agencies

If a potential environmental pollution event occurs (as specified by the POEO Act), The Environment and Sustainability Lead will immediately notify the EPA and other agencies as nominated by the Pollution Incident Response Plan (PIRMP). Information to be provided to the EPA will be in accordance with Section 150 of the POEO Act.

For notifiable events as detailed in the PIRMP, 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)
- Depending on the LGA where the incident occurred: Cumberland City Council (02) 8757 9000, (Westmead) City of Parramatta (02) 9806 5000 (Parramatta, Clyde and Sydney Olympic Park sites)
- 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 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.

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

These types of incidents include the death or injury to migratory bird species, listed marine species, threatened species or ecological communities (death or includes taking or removal).

Incidents requiring notification to the EPA must also be immediately notified to the Gamuda Australia Head of Health, Safety, Environment and Quality, LOR Environmental Leader, LOR HSE General Manager and the Head of Legal for both Gamuda Australia and Laing O'Rourke.

As per MCoA A43, The Planning Secretary will also be notified via phone or in writing (in accordance with the requirements of Appendix A of SSI 10038) via the Major Projects website immediately after the Proponent becomes aware of an incident. Notification via phone will be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call.

12.2.4 Landowners

On a number of parcels of land to which this Project applies, GALC is operating in accordance with Interface Agreements which exist between Sydney Metro and a landowner or agency (such as the relevant Council). Obligations under these agreements are passed down to GALC. Where an incident occurs on land to which an Interface Agreement applies, notification to that stakeholder will be undertaken in accordance with that agreement.

12.3 Incident Response

Priority response to an incident is to make the area safe and prevent environmental harm. If an incident presents an immediate threat to human health or property, 000 is to be called in accordance with the procedures outlined in the Construction Health and Safety Management Plan.

All incidents will be logged in Velocity EHS, Gamuda's Incident Reporting Database within 48 hours. All Class 1 and 2 Incidents must be investigated according to the GALC Incident Management and Reporting Procedure (GA-MSP-HSEQ-006). The investigation will result in specific and detailed corrective and preventative actions to be identified, actioned and closed out. Actions may include reviewing and improving existing environmental controls and job safety analyses / work method statements, site rehabilitation, increasing site inspections and monitoring, modifying construction or installation methods, and increasing environmental awareness including retraining and tool-box meetings.

Class 1 and Class 2 reportable incidents will be reviewed by the Gamuda Australia Head of Health, Safety, Environment and Quality, LOR Environmental Leader, LOR HSE General Manager and Head of Legal from both Gamuda Australia and Laing O'Rourke prior to the issue of formal correspondence to external parties or regulatory authorities.

Specific procedures relating to heritage finds will be outlined in the Construction Heritage Management Plan (a Sub-plan to this CEMP).

Access to site and assistance must be provided to regulatory inspectors as appropriate.

12.3.1 Senior Leaders' Environmental Incident Review

For all Class 1 and Class 2 incidents, within three days the Project Director will convene a briefing with the GALC Senior Leadership team 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.

Information relating to the incident investigation will be forwarded to the Senior Business Leader/ Area/Construction Manager and Regional HSE Manager, including 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, any other relevant information.

ATTACHMENTS

Attachment 1 – Compliance Matrix

The MCoA, REMMs, CEMF requirements and additional licensing and approval requirements and contract specific environmental requirements that relate to this CEMP are detailed in the following tables. The MCoA, REMMs and CEMF requirements relating to each CEMP sub-plan is found in Attachment 1 of the applicable sub-plans.

Conditions of Approval

MCoA No.	Condition Requirements	Document Reference
Concept Proposal Conditions		
General		
C-A2	The Proponent must carry out the CSSI Concept in accordance with the conditions of this approval and the documents listed in **Condition C-A1** of this schedule unless otherwise specified in, or required under, the conditions of this approval.	Section 1.1
C-B2	For the relevant future stage application, the following must be considered at the Clyde Maintenance and Stabling Facility site:	
	(c) renaturalisation of parts of Duck Creek and A'Becketts Creek and rehabilitation of the riparian corridor;	WTP Flora and Fauna Management Plan
Stage 1 Conditions		
General		
A1	The Proponent must carry out Stage 1 of the CSSI in accordance with the conditions of this approval and generally in accordance with the: (a) Sydney Metro West – Westmead to The Bays and Sydney CBD Environmental Impact Statement dated 15 April 2020;	Section 1.2

MCoA No.	Condition Requirements	Document Reference
	(b) Sydney Metro West – Westmead to The Bays and Sydney CBD Submissions Report dated 20 November 2020; and (c) Sydney Metro West – Westmead to The Bays and Sydney CBD Amendment Report dated 20 November 2020.	
A2	Stage 1 of the CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in **Condition A1** of this schedule unless otherwise specified in, or required under, this approval.	Section 1.2
A6	Where the conditions of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:	
	(a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;	Section 10.2
	(b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them;	Section 10.2
	(c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that the party(s) has none or has failed to provide feedback after repeated requests;	Section 10.2
	(d) outline of the issues raised by the identified party(s) and how they have been addressed; and	Section 10.2
	(e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.	Section 10.2
Use of Ancillary Facilities		
A16	Ancillary facilities A16 Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 of this schedule can only be established and used in each case if:	
	(a) they are located within or immediately adjacent to the Construction Boundary; and	Attachment 8 and Attachment 9

MCoA No.	Condition Requirements	Document Reference
	(b) they are not located next to sensitive land user(s) (including where an access road is between the facility and the receiver), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and	Attachment 8 and Attachment 9
	(c) they have no impacts on Heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the conditions of this approval; and	Attachment 8 and Attachment 9, FFMP, HMP
	(d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the conditions of this approval, including in relation to environmental, social and economic impacts.	Attachment 1, CEMP sub-plans
A20	The use of an ancillary facility for construction must not commence until the **CEMP** required by Condition C1 of this schedule, relevant **CEMP Sub-plans** required by Condition C5 of this schedule and relevant **Construction Monitoring Programs** required by Condition C14 of this schedule have been approved by the Planning Secretary or endorsed by the **ER** (whichever is applicable). Note: This condition does not apply to **Condition A21** of this schedule or where the use of an ancillary facility is Low Impact Work or for Low Impact Work.	Section 1.5.1.2
A21	Lunch sheds, office sheds, portable toilet facilities, and the like, can be established and used where they have been assessed in the documents listed in Condition A1 of this schedule or satisfy the following criteria: (a) are located within or adjacent to the Construction Boundary; and	Section 1.5.1.2
	(b) have been assessed by the ER to have: (i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the ICNG, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and (ii) minimal environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and Heritage items beyond those already approved under other conditions of this approval.	Section 1.5.1.2
A22	Boundary screening must be erected around ancillary facilities that are adjacent to sensitive land user(s) for the duration that the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners.	WTP Visual Amenity

MCoA No.	Condition Requirements	Document Reference
		Management Plan
A23	Boundary screening required under Condition A22 of this schedule must minimise visual impacts on adjacent sensitive land user(s).	WTP Visual Amenity Management Plan
Environment Representative		
A30	For the duration of the work or as agreed with the Planning Secretary, the approved ER must:	Section 7.4.1
	a) Receive and respond to communication from the Planning Secretary in relation to the environmental performance of Stage 1 of the CSSI	
	b) Consider and inform the Planning Secretary on matters specified in the conditions of this approval	Section 7.4.1
	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	Section 7.4.1
	d) Review documents identified in Conditions A10, A17, A19, C1, C5 and C14 of this schedule and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so: i) endorse the documents before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or ii) endorse the documents before the implementation of such documents (if those documents are only required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary / Department)	Section 7.4.1
	e) For documents that are required to be submitted to the Planning Secretary / Department for information under (d)(ii) above, the documents must be submitted as soon as practicable to the	Section 7.4.1

MCoA No.	Condition Requirements	Document Reference
	Planning Secretary / Department after endorsement by the ER, unless otherwise agreed by the Planning Secretary	
	f) Regularly monitor the implementation of the documents listed in Conditions A10, A17, A19, C1, C5 and C14 of this schedule to ensure implementation is being carried out in accordance with the document and the conditions of this approval.	Section 7.4.1
	g) As may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A39 of this schedule	Section 7.4.1
	h) As may be requested by the Planning Secretary, assist in the resolution of community complaints received directly by the Department	Section 7.4.1
	i) Consider or assess the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities as required by Condition A21 of this schedule	Section 7.4.1
	j) Consider any minor amendments to be made to the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs without increasing impacts to nearby sensitive receivers, and are consistent with the conditions of this approval and the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the conditions of this approval	Section 7.4.1
	k) Prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing the information set out in the Environmental Representative Protocol under the heading “Environmental Representative Monthly Reports”. The Environmental Representative Monthly Report must be submitted within seven (7) days following the end of each month for the duration of the ER’s engagement for Stage 1 of the CSSI, or as otherwise agreed by the Planning Secretary	Section 7.4.1

MCoA No.	Condition Requirements	Document Reference
	l) Assess the impacts of activities as required by the Low Impact Work definition.	Section 7.4.1
Acoustics Advisor		
A36	The approved AA must:	Section 7.4.2
	a) Receive and respond to communication from the Planning Secretary in relation to the performance of Stage 1 of the CSSI in relation to noise and vibration	
	b) Consider and inform the Planning Secretary on matters specified in the conditions of this approval relating to noise and vibration	Section 7.4.2
	c) Consider and recommend, to the Proponent, improvements that may be made to avoid or minimise adverse noise and vibration impacts	Section 7.4.2
	d) Review all proposed night-time works (with the exception of low risk activities) to determine if sleep disturbance would occur and recommend measures to avoid sleep disturbance or appropriate additional alternative mitigation measures	Section 7.4.2
	e) Review all noise and vibration documents required to be prepared under the conditions of this approval and, should they be consistent with the conditions of this approval, endorse them before submission to the Planning Secretary (if required to be submitted to the Planning Secretary) or before implementation (if not required to be submitted to the Planning Secretary)	Section 7.4.2
	f) Regularly monitor the implementation of all noise and vibration documents required to be prepared under the conditions of this approval to ensure implementation is in accordance with what is stated in the document and the conditions of this approval	Section 7.4.2
	g) Review the Proponent's notification of incidents in accordance with Condition A43 of this schedule	Section 7.4.2
	h) In conjunction with the ER (where required), the AA must:	Section 7.4.2

MCoA No.	Condition Requirements	Document Reference
	i. as may be requested by the Planning Secretary or Community Complaints Mediator (required by Condition B8 of this schedule), help plan, attend or undertake audits of noise and vibration management of Stage 1 of the CSSI including briefings, and site visits, ii. in the event that conflict arises between the Proponent and the community in relation to the noise and vibration performance of Stage 1 of the CSSI, follow the procedure in the Overarching Community Communication Strategy referenced in Condition B1 of this schedule to attempt to resolve the conflict, and if it cannot be resolved, notify the Planning Secretary, iii. if requested by the ER, consider relevant minor amendments made to the Site Establishment Management Plan, CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the conditions of this approval and the management plans and monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, endorse the amendment, (this does not include any modifications to the conditions of this approval), iv. if requested by the ER, review the noise impacts of minor ancillary facilities, and v. prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, a Monthly Noise and Vibration Report detailing the AA's actions and decisions on matters for which the AA was responsible in the preceding month. The Monthly Noise and Vibration Report must be submitted within seven (7) days following the end of each month for the duration of the AA's engagement for Stage 1 of the CSSI, or as otherwise agreed by the Planning Secretary.	
Independent Environmental Audit		
A39	**Independent Audits** of Stage 1 of the CSSI must be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements* (DPIE, 2020)	Section 11.3.1
Incident and Non-Compliance Notification and Reporting		
A43	The Planning Secretary must be notified via phone or in writing via the Major Projects website immediately after the Proponent becomes aware of an incident. Any notification via phone must be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call.	Section 12.2.2

MCoA No.	Condition Requirements	Document Reference
	The written notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and general nature of the incident.	
A44	Subsequent notification must be given and reports submitted in accordance with the requirements set out in **Appendix A**.	Section 12.2.2
A45	The Planning Secretary must be notified in writing via the Major Projects website within seven (7) days after the Proponent becomes aware of any non-compliance with the conditions of this approval.	Section 12.2.2
A46	A non-compliance notification must identify the CSSI (including the application number for it), set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 11.4
Construction Environmental Management Plan		
C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 of this schedule to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 of this schedule will be implemented and achieved during construction.	Section 1.4
C2	With the exception of any CEMPs expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMPs must be submitted to the Planning Secretary for approval.	Section 4.2
C3	The CEMP(s) not requiring the Planning Secretary's approval must be submitted to the ER for endorsement no later than one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase. That CEMP must obtain the endorsement of the ER as being consistent with the conditions of this approval and all undertakings made in the documents listed in Condition A1 of this schedule	Section 4.2
C4	Any CEMP to be approved by the Planning Secretary must be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase	Section 4.2

MCoA No.	Condition Requirements			Document Reference
C5	Of the CEMP Sub-plans required under Condition C1 of this schedule, the following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation must be included in the relevant CEMP Sub-plan, including copies of all correspondence from those government agencies as required by Condition A6 of this schedule. Where a government agency (ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why:			Section 1.4 Section 10.2
		Required CEMP Sub-plan		
	(a)	Noise and vibration	SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)	
	(b)	Flora and fauna	DPIE EES, DPI Fisheries, SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)	
	(c)	Soil and water	DPIE EES, Relevant Council(s), SOPA (in respect of Sydney Olympic Park) and Sydney Water (if Sydney Water's assets are affected)	
	(d)	Heritage (Non-Aboriginal and Aboriginal)	Heritage NSW, SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)	
	(e)	Spoil	Relevant Council(s) and SOPA (in respect of Sydney Olympic Park)	
C6	The CEMP Sub-plans must state how: (a) the environmental performance outcomes identified in the documents listed in Condition A1 of this schedule will be achieved;			Refer to each Sub-plan Attachment 1 Section 4.2
	(b) the mitigation measures identified in the documents listed in Condition A1 of this schedule will be implemented;			Refer to each Sub-plan Attachment 1 Section 4.2

MCoA No.	Condition Requirements	Document Reference
	(c) the relevant conditions of this approval will be complied with; and	Refer to each Sub-plan Attachment 1 Section 4.2
	(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Refer to each Sub-plan Attachment 4 Section 4.2
C7	With the exception of any CEMP Sub-plans expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP Sub-plans must be submitted to the Planning Secretary for approval.	Section 4.2
C8	The CEMP Sub-plans not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all relevant undertakings made in the documents listed in Condition A1 of this schedule. Any of these CEMP Sub-plans must be submitted to the ER with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is phased no later than one (1) month before the commencement of that phase.	Section 4.2
C9	Any of the CEMP Sub-plans to be approved by the Planning Secretary must be submitted to the Planning Secretary with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is phased no later than one (1) month before the commencement of that phase.	Section 4.2
C10	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction. Where construction of Stage 1 of the CSSI is phased, construction of a phase must not commence until the CEMP and CEMP Sub-plans for that phase have been approved by the Planning Secretary or certified by the ER upon nomination by the Planning Secretary (whichever is applicable).	Section 4.2

MCoA No.	Condition Requirements			Document Reference
Construction Monitoring Programs				
C14	The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of construction of Stage 1 of the CSSI against the performance predicted in the documents listed in Condition A1 of this schedule or in the CEMP:			Construction Monitoring Programs
		Required Construction Monitoring Programs	Relevant government agencies to be consulted for each Construction Monitoring Program	Section 10.2
	(a)	Noise and vibration	EPA, SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)	
	(b)	Blasting	SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)	
	(c)	Surface water quality	DPIE Water, Relevant Council(s) and Sydney Water (if any Sydney Water assets are impacted)	
	(d)	Groundwater	DPIE Water and SOPA (in respect of Sydney Olympic Park)	
C15	Each Construction Monitoring Program must provide: (a) details of baseline data available including the period of baseline monitoring;			Section 11.2, Construction Monitoring Programs
	(b) details of baseline data to be obtained and when;			Section 11.2, Construction Monitoring Programs
	(c) details of all monitoring of the project to be undertaken			Section 11.2, Construction Monitoring Programs

MCoA No.	Condition Requirements	Document Reference
	(d) the parameters of the project to be monitored;	Section 11.2, Construction Monitoring Programs
	(e) the frequency of monitoring to be undertaken;	Section 11.2, Construction Monitoring Programs
	(f) the location of monitoring;	Section 11.2, Construction Monitoring Programs
	(g) the reporting of monitoring results and analysis results against relevant criteria;	Section 11.2, Construction Monitoring Programs
	(h) details of the methods that will be used to analyse the monitoring data;	Section 11.2, Construction Monitoring Programs
	(i) procedures to identify and implement additional mitigation measures where the results of the monitoring indicated unacceptable project impacts;	Section 11.2, Construction Monitoring Programs
	(j) a consideration of SMART principles; and	Section 11.2, Construction Monitoring Programs

MCoA No.	Condition Requirements	Document Reference
	(k) any consultation to be undertaken in relation to the monitoring programs; and (l) any specific requirements as required by Conditions C16 to C17 of this schedule.	Section 11.2, Construction Monitoring Programs
C18	With the exception of any **Construction Monitoring Programs** expressly nominated by the Planning Secretary to be endorsed by the ER, all **Construction Monitoring Programs** must be submitted to the Planning Secretary for approval.	Section 4.2
C19	The **Construction Monitoring Programs** not requiring the Planning Secretary's approval must obtain the endorsement of the **ER** as being in accordance with the conditions of approval and all undertakings made in the documents listed in **Condition A1** of this schedule. Any of these **Construction Monitoring Programs** must be submitted to the **ER** for endorsement at least one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase.	Section 4.2
C20	Any of the **Construction Monitoring Programs** which require Planning Secretary approval must be endorsed by the ER and then submitted to the Planning Secretary for approval at least one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase.	Section 4.2
C21	Unless otherwise agreed with the Planning Secretary, construction must not commence until the Planning Secretary has approved, or the ER has endorsed (whichever is applicable), all of the required **Construction Monitoring Programs** and all relevant baseline data for the specific construction activity has been collected.	Section 4.2
C22	The Construction Monitoring Programs, as approved by the Planning Secretary or the ER has endorsed (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary or the ER (whichever is applicable), whichever is the greater.	Section 11.2
C23	The results of the **Construction Monitoring Programs** must be submitted to the Planning Secretary, **ER** and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant **Construction Monitoring Program**.	Section 11.2

MCoA No.	Condition Requirements	Document Reference
	Note: Where a relevant **CEMP Sub-plan** exists, the relevant **Construction Monitoring Program** may be incorporated into that **CEMP Sub-plan**.	
Socio-Economic, Land Use and Property		
D60	A suitably qualified and experienced person must undertake condition surveys of all buildings, structures, utilities and the like identified in the documents listed in **Condition A1** of this schedule as being at risk of damage before commencement of any work that could impact on the subject surface / subsurface structure. The results of the surveys must be documented in a **Pre-construction Condition Survey Report** for each item surveyed. Copies of **Pre-construction Condition Survey Reports** must be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, and no later than one (1) month before the commencement of the work that could impact on the subject surface / subsurface structure	Section 8.2 and WTP Noise and Vibration Management Plan
D62	The Proponent, where liable, must rectify any property damage caused directly or indirectly (for example from vibration or from groundwater change) by the work at no cost to the owner. Alternatively, the Proponent may pay compensation for the property damage as agreed with the property owner. Rectification or compensation must be undertaken within 12 months of completion of the work identified in **Condition D60** of this schedule unless another timeframe is agreed with the owner of the affected surface or sub-surface structure or recommended by the **IPIAP**	Section 11.5
Utilities Management		
D101	Utilities, services and other infrastructure potentially affected by construction must be identified before works affecting the item, to determine requirements for access to, diversion protection, and / or support. The relevant owner(s) and / or provider(s) of services must be consulted to make suitable arrangements for access to diversion, protection, and / or support of the affected infrastructure as required. The Proponent must ensure that disruption to any service is minimised and be responsible for advising local residents and businesses affected before any planned disruption of service.	Section 7.1
D102	A **Utility Coordination Manager** must be appointed for the duration of work associated with Stage 1 of the CSSI. The role of the **Utility Coordination Manager** must include, but not be limited to: a) the management and coordination of all utility work associated with the delivery of Stage 1 of the CSSI, to ensure respite is provided to the community;	Section 7.1

MCoA No.	Condition Requirements	Document Reference
	b) providing advice to the Sydney Metro Place Manager regarding upcoming utility work, including the scope of the work and the responsibility for the work; and	Section 7.1
	c) investigating complaints received from the Community Complaints Mediator or the Project communication team relating to utility work and providing a response as required	Section 7.1

Revised Environmental Management Measures

REMM No.	Requirements	Document Reference
Traffic and Transport		
TT1	The community would be notified in advance of proposed road and pedestrian network changes through appropriate forms of community liaison.	WTP Traffic Management Plan
TT2	In the event of a traffic related incident, coordination would be carried out with Transport for NSW, including Transport Coordination and/or the Transport Management Centre's Operations Manager.	WTP Traffic Management Plan
TT16	Any relocation of taxi ranks would be carried out in consultation with Transport for NSW, the relevant local council and taxi operators. Wayfinding and customer information would be provided to notify customers of relocated taxi ranks	WTP Traffic Management Plan
TT30	The design of the temporary traffic arrangements at Westmead metro station construction site would consider construction traffic, alternate bus routes and bus stops, local vehicular traffic and pedestrian safety. The design of the temporary traffic arrangements would be undertaken in consultation with Transport for NSW, Schools Infrastructure, Heath Infrastructure, relevant local councils and bus operators.	Attachment 9
Business impacts		
BI1	Small business owner engagement would be undertaken to assist small business owners adversely impacted by construction.	Section 10.2
BI2	Planned power and utility interruptions would be scheduled to before or after typical business hours where feasible and reasonable. Prior notice would be provided to all affected business owners of the interruptions.	Section 10.2
Social impacts		
S1	Consultation would be carried out with managers of social infrastructure located near construction sites about the timing and duration of construction works and management of potential impacts, with the aim of minimising potential disruptions to the use of the social infrastructure from construction activity.	Section 10.2
S2	Engagement would be carried out with Parramatta City Council to identify alternative locations for the Parramatta Artist Studios to provide opportunities for facilitating local creative and cultural activities.	Section 10.2

REMM No.	Requirements	Document Reference
S3	A Community Benefit Plan would be developed to guide the development of community benefit initiatives (by Principal Contractors) during construction of Stage 1 to make a positive contribution to the potentially affected community. The key objectives of the plan would include: ● Identify opportunities to create environmental and community benefits and provide positive social outcomes ● Respond to community priorities and needs in the locality of each relevant construction site.	Community Benefit Plan
S4	In addition to mitigation measure TT17, consultation would be carried out with festival and event organisers in proximity to construction sites to mitigate potential impacts on the operation of the festival or event.	Section 10.2
S7	In addition to mitigation measure S1, ongoing engagement would be undertaken with NSW Department of Education to continue to investigate feasible and reasonable mitigation measures related to construction traffic, pedestrian safety, construction noise and vibration, and air quality.	Section 10.2
Soils		
SSWQ1	Prior to ground disturbance in areas of potential acid sulfate soil occurrence, testing would be carried out to determine the presence of actual and/or potential acid sulfate soils. If acid sulfate soils are encountered, they would be managed in accordance with the Acid Sulfate Soil Manual (ASSMAC, 1998).	Low Impact Works approval
Hydrology and Flooding		
HF6	Consultation would occur with the proponent of the Camellia Town Centre redevelopment to understand potential flood impacts from the redevelopment on Stage 1 and to identify any additional flood protection (if required)	Section 10.2
Hazards		
HA2	Dial before you dig searches and non-destructive digging would be carried out to identify the presence of underground utilities.	Section 7.1
HA3	Ongoing consultation would be carried out with utility providers for high pressure gas or petroleum pipelines to identify appropriate construction methodologies to be implemented. Any interaction with high pressure gas or petroleum pipelines would comply with the relevant standards, including AS 2885 Pipelines – Gas and Liquid Petroleum.	Section 7.1
Sustainability and Climate Change		

REMM No.	Requirements	Document Reference
SCC1	Sustainability initiatives would be incorporated into the detailed design and construction to support the achievement of the Sydney Metro West sustainability objectives.	Section 6.1.2
SCC2	Best practice level of performance would be achieved using market leading sustainability rating tools during design and construction.	WTP Sustainability Management Plan
SCC3	Climate change risk treatments would be confirmed and incorporated into the detailed design	WTP Sustainability Management Plan
SCC4	An iterative process of greenhouse gas assessments and design refinements would be carried out during detailed design and construction to identify opportunities to minimise greenhouse gas emissions. Performance would be measured in terms of a percentage reduction in greenhouse gas emissions from a baseline inventory calculated at the detailed design stage.	WTP Sustainability Management Plan
SCC5	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction would be offset.	WTP Sustainability Management Plan
Cumulative impacts		
CI1	Co-ordination and consultation with the following stakeholders would occur where required to manage the interface of projects under construction at the same time: • Transport for NSW including Transport Coordination • Department of Planning, Industry and Environment • Sydney Trains • NSW Trains • Sydney Buses • Sydney Water • Port Authority of NSW • Sydney Motorways Corporation • Emergency service providers • Utility providers • Construction contractors. Co-ordination and consultation with these stakeholders would include:	Section 10

REMM No.	Requirements	Document Reference

	• Provision of regular updates to the detailed construction program, construction sites and haul routes
	• Identification of key potential conflict points with other construction projects
	• Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve:
	  ○ Adjustments to the Sydney Metro construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects
	  ○ Co-ordination of traffic management arrangements between projects.	

Construction Environmental Management Framework

CEMF Section	Requirement	Document Reference
1.3	Principal Contractors are required to undertake their works in accordance with this policy. The Policy reflects a commitment in the delivery of the project to: • Optimise sustainability outcomes, transport service quality and cost effectiveness. • Develop effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity conservation. • Be environmentally responsible, by avoiding pollution, enhancing the natural environment and reducing the project ecological footprint, while complying with all applicable environmental laws, regulations and statutory obligations. • Be socially responsible by delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships.	Section 6
2	Compliance with Commonwealth and NSW legislative requirements. Sydney Metro and its Contractors should regularly review their legislative requirements	Section 4.3 and Attachment 3
2.1	The requirements of the relevant approval are required to be complied with by Sydney Metro. Responsibility for implementing mitigation measures and conditions of approval will be allocated between Sydney Metro and Principal Contractors as appropriate. Typically where there are multiple packages of works, Sydney Metro will produce a Staging Report which sets out the applicability and allocation of approval requirements within the project's program of works.	Section 1.5, Section 5.2, Section 11.6 and Attachment 1

CEMF Section	Requirement	Document Reference
2.2	Contractors need to review the applicability of Scheduled Activities and assess the need to obtain and Environment Protection Licence (EPL). In other circumstances work may be undertaken using the existing EPL held by Sydney Trains. Where required, Sydney Metro Principal Contractors will: ● Apply for and be granted an EPL from the EPA. ● Hold an EPL which covers their scope of works as necessary under the POEO Act. ● Undertake their scope of works in accordance with the conditions of the applicable EPLs as issued by the EPA. ● Work under the existing Sydney Trains EPL.	Section 5.2
2.3	Numerous environmental publications, standards, codes of practice and guidelines are relevant to Sydney Metro construction and are referenced throughout this Construction Environmental Management Framework.	Section 5.3
3.1a	Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2015	Section 3
3.1b	Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will:	Section 3, Sustainability Management Plan
	i. Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2015	
	ii. Be supported by a process for identifying and responding to changing legislative or other requirements	Section 3, Sustainability Management Plan
	iii. Include processes for assessing design or construction methodology changes for consistency against the planning approvals	Section 5.5, Sustainability Management Plan

CEMF Section	Requirement	Document Reference
	iv. Include processes for tracking and reporting performance against sustainability and compliance targets	Sustainability Management Plan
	v. Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and	Section 2, Section 3, CEMP Sub-plans, Sustainability Management Plan
	vi. Be consistent with the SM C&SW Sustainability Strategy and Sydney Metro Environment and Sustainability Policy	Section 6.1, Sustainability Management Plan
3.1c	All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's Environment and Sustainability Management System.	Section 3
3.4a	Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their scope of works. The CEMP shall comprise of a main CEMP document, issue specific sub-plans, activity specific procedures and site based control maps. The CEMP shall illustrate the relationship between other plans required by the contract, in particular those that relate to design management.	This CEMP
3.4b	Depending on the scope and scale of the works, Sydney Metro may decide to streamline the CEMP and sub-plan requirements. For example, depending on the risk associated with particular environmental issues it may be appropriate to remove the need for a sub plan, or replace with a procedure as part of the CEMP.	Section 3
3.4c	The CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licenses, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework.	Section 5.2, Attachment 1, Section 4 and this table
3.4d	As a minimum the CEMP will: i. Include a contract specific environmental policy;	Section 6.1

CEMF Section	Requirement		Document Reference
	ii.	Include a description of activities to be undertaken during construction;	Section 1.5.1
	iii.	For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed;	Attachment 1
	iv.	For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	Section 2.1
	v.	For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure;	Section 7
	vi.	Assign the responsibility for the implementation for the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP;	Section 7.1
	vii.	Identify communication requirements, including liaison with stakeholders and the community;	Section 7.1
	viii.	Including induction and training requirements and a summary of the Training Needs Analysis required in Section 3.10(b)	Section 9.1
	ix.	Management strategies for environmental compliance and review of the performance of environmental controls;	Section 11.6
	x.	Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	Section 11
	xi.	Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;	Section 11.3.2
	xii.	Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	Section 12, Section 11.4, Section 11.5
	xiii.	Include procedures for the control of environmental records.	Section 4.4

CEMF Section	Requirement	Document Reference
3.4e	The CEMP and associated sub-plans will be reviewed by Sydney Metro and/or an independent environmental representative prior to any construction works commencing. Depending on the Conditions of Approval, the CEMP and certain sub-plans may also require the approval of the Department of Planning, Industry and Environment (DPIE).	Section 4.2
3.5a	Subject to Section 3.4 (b) the Principal Contractor will prepare issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include: • Spoil management • Groundwater management • Noise and vibration management • Heritage management • Flora and fauna management • Visual amenity management • Soil and water management • Air quality management; and • Waste management.	Section 4.2
3.6a	The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should supplement environmental management sub plans, but may substitute for sub plans in agreement with Sydney Metro if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.	Section 8.3
3.6b	The procedures will include:	Section 8.3
	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,	Section 8.3
	iii. a risk rating for each of the identified potential impacts,	Section 8.3
	iv. mitigation measures relevant to each of the work tasks, and	Section 8.3
	v. responsibility to ensure the implementation of the mitigation measures.	Section 8.3

CEMF Section	Requirement	Document Reference
3.6c	The Principal Contractor will prepare and implement site based progressive Environmental Control Maps (ECM's) which as a minimum: i. Depicts the current representation of the site;	Section 8.4
	i. Indicate which environmental procedures, environmental approvals, or licences are applicable	Section 8.4
	ii. Illustrate the site, showing significant structures, work areas and boundaries;	Section 8.4
	iii. Illustrate the environmental control measures and environmentally sensitive receivers;	Section 8.4
	iv. Is endorsed by the Principal Contractors Environmental Manager or delegate;	Section 8.4
	v. Include all the training and competency requirements for relevant workers; and	Section 8.4
	vi. Be communicated to relevant workers, including sign-off for the appropriate procedures prior to commencing works on the specific site and / or activity.	Section 8.4
3.7a	Where the requirement for an additional environmental assessment is identified, this will be undertaken prior to undertaking any construction activities. The environmental assessment will include: i. A description of the existing surrounding environment;	Section 1.3.1
	ii. Details of the ancillary works and construction activities required to be carried out including the hours of works;	Section 1.3.1
	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	Section 1.3.1
	iv. Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts; and	Section 1.3.1
	v. Identification of the timing for completion of the construction works, and how the sites would be reinstated (including any necessary rehabilitation).	Section 1.3.1
3.8b	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. Dilapidation reports are to include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths.	Noted.

CEMF Section	Requirement	Document Reference
3.9a	Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. These hold points will be documented in the CEMP or relevant sub-plans. Example activities include vegetation removal and water discharge.	Section 8.2
3.9b	Table 6 provides the structure for these hold points to be included in the CEMP as well as an initial list of hold points which will be implemented.	Section 8.2
3.10a	Principal Contractors are 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: a. Training purpose, objectives and key issues, Contractor's environmental and sustainability policy(s) and key performance indicators, b. Due diligence, duty of care and responsibilities, c. Relevant conditions of any environmental licence and/or relevant conditions of approval, d. Site specific issues and controls including those described in the environmental procedures, e. Reporting procedure(s) for environmental hazards and incidents, and f. Communication and protocols for interactions with community and stakeholders	Section 1.1
	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	Section 9.3
	iii. Topic specific environmental training should be based upon, but is not limited to, Issue specific sub-plans required under Section 3.5 (a) (i-xi).	Section 9.4
3.10b	Principal Contractors will conduct a Training Needs Analysis which: i. Identifies that all staff are to receive environmental training;	Section 9.1
	ii. Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans;	Section 9.1
	iii. Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements; and	Section 9.1

CEMF Section	Requirement	Document Reference
	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 9.1
3.11a	Principal Contractors undertaking work in accordance with an EPL must 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 Sydney Metro procedures and will include: i. Categories for environmental emergencies and incidents;	Section 12.2
	ii. Notification protocols for each category of environmental emergency or incident, including notification to Sydney Metro and notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details;	Section 12.2
	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 any regulator or government department);	Section 12.2
	iv. A process for undertaking appropriate levels of investigation for all incidents and the identification, implementation and assessment of corrective and preventative actions; and	Section 12.2
	v. Notification protocols of incidents to relevant regulators and stakeholders including (but not limited to) the EPA or DPIE that are made by the Contractor or Sydney Metro.	Section 12.2
3.11b	The Contractor will make all personnel aware of the plan and their responsibilities	Section 12.1
3.12a	Sydney Metro will engage Independent Environmental Representatives (ERs) as required under the CSSI approval 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, Environment Protection Licences, relevant standards and this CEMF;	Section 7.4.1
	ii. Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation;	Section 7.4.1
	iii. Provide independent guidance and advice to Sydney Metro and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions;	Section 7.4.1

CEMF Section	Requirement	Document Reference
	iv. Be the principal point of advice for the DP&E in relation to all questions and complaints concerning the environmental performance of the project;	Section 7.4.1
	v. Ensure that environmental auditing is undertaken in accordance with all relevant project requirements; and	Section 11.3.1
	vi. Recommend reasonable steps, including 'stop works', to be taken to avoid or minimise adverse environmental impacts	Section 7.4.1
3.13a	In relation to Roles and Responsibilities the CEMP will: i. Describe the relationship between the Principal Contractor, Sydney Metro, key regulatory stakeholders, the independent environmental representative and the independent certifier;	Section 7
	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;	Section 7
	iii. Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work; and	Section 7
	iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders.	Section 7
3.13b	All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.	Section 7.1
3.14a	Issue specific environmental monitoring will be undertaken as required or as additionally required by any approval, permit or licence conditions.	Section 11.2
3.14b	The results of any monitoring undertaken as a requirement of a licence or permit that is required to be published will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.	Section 11.2
3.14c	Environmental inspections will include: i. Surveillance of environmental mitigation measures by the Site Foreman; and	Section 11.1

CEMF Section	Requirement	Document Reference
	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 11.1
3.14d	Regular site inspections by the ERs and Sydney Metro representatives at a frequency to be agreed with the Principal Contractor.	Section 11.1
3.14e	Principal Contractors must undertake internal environmental audits. The scope will include: i. Compliance with any approval, permit or licence conditions;	Section 11.3.2
	ii. Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures;	Section 11.3.2
	iii. Community consultation and complaint response;	Section 11.3.2
	iv. Environmental training records; and v. Environmental monitoring and inspection results.	Section 11.3.2
3.14f	Sydney Metro (or an independent environmental auditor) will also undertake periodic audits of the Principal Contractor's E&SMS, including this Construction Environmental Management Framework.	Section 11.3
3.15a	Principal Contractors will document and detail any non-compliances with the requirements of any legislative or other requirements. Sydney Metro will be made aware of all non-compliances in a timely manner.	Section 11.4 and Section 11.6
3.15b	Principal Contractors will develop and implement corrective actions to rectify the non-compliances in order to prevent a re-occurrence of the non-compliance. Contractors will also maintain a register of non- compliances and associated corrective actions.	Section 11.5
3.15c	Sydney Metro or the Environmental Representative may raise non-compliances against environmental requirements. In these circumstances the Principal Contractor must abide by any requirements of Sydney Metro's procedure for managing non-compliances.	Section 11.4
3.16a	Principal Contractors will maintain appropriate records of the following: i. Site inspections, audits, monitoring, reviews or remedial actions;	Section 4.4
	ii. Documentation as required by performance conditions, approvals, licences and legislation;	Section 4.4
	iii. Modifications to site environmental documentation (eg CEMP, sub-plans and procedures); and	Section 4.4
	iv. Other records as required by this Construction Environmental Management Framework	Section 4.4
3.16b	Records must be accessible onsite for the duration of works.	Section 4.4

CEMF Section	Requirement	Document Reference
3.16c	Additionally, records will be retained by the Principal Contractor for a period of no less than 7 years. Records will be made available in a timely manner to Sydney Metro (or their representative) upon request	Section 4.4
3.16d	Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.14) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to Sydney Metro at an agreed frequency	Section 11.6
3.17a	Principal Contractors will ensure the continual review and improvement of the management systems. This will generally occur in response to: i. Issues raised during environmental surveillance and monitoring;	Section 4.3
	ii. Expanded scope of works;	Section 4.3
	iii. Environmental incidents; and	Section 4.3
	iv. Environmental non-conformances.	Section 4.3
3.17b	A formal review of the management systems by the Principal Contractor's Senior Management Team will also occur on an annual basis, as a minimum. This review shall generate actions for the continual improvement of the systems and supporting management plans.	Section 4.3
5.3a	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;	Section 8.4, Attachment 8 and Attachment 9
	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;	Section 8.4, Attachment 8 and Attachment 9
	iii. The use of site buildings to shield noisy activities from receivers;	Section 8.4, Attachment 8 and Attachment 9
	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;	Section 8.4, Attachment 8 and Attachment 9

CEMF Section	Requirement	Document Reference
	v. Aim to minimise the requirement for reversing, especially of heavy vehicles; and	Section 8.4, Attachment 8 and Attachment 9
	vi. Any applicable requirements of the Construction Traffic Management Framework (CTMF).	Section 8.4, Attachment 8 and Attachment 9
5.4a	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;	WTP Visual Amenity Management Plan
	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;	WTP Visual Amenity Management Plan
	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; and	WTP Visual Amenity Management Plan
	iv. Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction	WTP Visual Amenity Management Plan

Guideline for the Preparation of Environmental Management Plans

EMP Element	Requirement	Document Reference
Background	This component of the EMP should include the following elements: • Introduction • Project Description • EMP Context • EMP Objectives • Environmental Policy	Section 1 Section 2 Section 3 Section 6
Environmental Management	This component of the EMP should include the following elements: • Environmental Management Structure and Responsibility • Approval and Licensing Requirements • Reporting • Environmental Training • Emergency Contacts and Response	Section 3 Section 5 Section 9 Section 11 Section 12 Attachment 1
Implementation	This component of the EMP should include the following elements: • Risk Assessment • Environmental Management Activities and Controls • Environmental Management Plans or Maps • Environmental Schedules	Attachment 4 CEMP Sub-plans Section 8 Section 12
Monitor and Review	This component of the EMP should include the following elements: • Environmental Monitoring • Environmental Auditing • Corrective Action • EMP Review	Section 4 Section 11 Section 12

Attachment 2 – Legal and Other Requirements

Legal register

Act	Activity/aspect	Requirement	Section of Act	Where addressed
Aboriginal and Torres Strait Islander Heritage Protection Act 1984	Aboriginal heritage	• Report any discovery of Aboriginal remains to the Federal Minister. • Comply with the provisions of any declaration in relation to a significant Aboriginal area or object	s20 s22	WTP Heritage Management Plan
Biodiversity Conservation Act 2016	Biodiversity	• Do not harm or attempt to harm an animal that is of a threatened species, an animal that is part of a threatened ecological community or a protected animal. • Do not pick a plant that is: • A threatened species • Part of a threatened ecological community • Protected • Do not damage a declared are of outstanding biodiversity value • Do not damage any habitat of a threatened species or threatened ecological community	s2.1 s2.2 s2.3	WTP Flora and Fauna Management plan
Biosecurity Act 2015	Dealing with biosecurity matters including pests, weeds and diseases	• Prevent, eliminate or minimise biosecurity risk posed by the biosecurity manner as far as reasonably practicable, if dealing with a biosecurity matter or carrier. • Notification of prohibited matter events • Notification of biosecurity events	s22 s30 s38	WTP Flora and Fauna Management plan
Biosecurity Regulation 2017	Pests and diseases	• Notification after becoming aware of, suspects or coming into the presence of any pest or diseases listed in Schedule 1.	s7	WTP Flora and Fauna Management plan

Act	Activity/aspect	Requirement	Section of Act	Where addressed
Contaminated Land Management Act 1997	Polluted land	• Notification to the EPA in the event of: • Conducting activities that have resulted in the contamination of land • Identifying that land is contaminated • Notification is only required where: • The contaminant or any by-product of the contaminant has entered or will foreseeably enter neighbouring land, the atmosphere, groundwater or surface water • The contaminant meets levels identified by the regulations or guidelines in the neighbouring land, atmosphere, groundwater or surface water • The contaminant exceeds levels identified by the regulations or guidelines in the neighbouring land, atmosphere, groundwater or surface water • A guideline specifies a level of the contaminant in soils with respect to a current or approved use of the land and the level of the contaminant on or in any part of the soil on that land is equal to or above that specified in the guideline and a person has been, or foreseeably will be, exposed to the contaminant or any by-product of the contaminant • The contamination meets any other criteria that may be prescribed by the regulations to require notification	s60	WTP Waste Management Plan WTP Soil and Water Quality Management Plan WTP Spoil Management Plan
Dangerous Goods (Road and Rail Transport) Act 2008	Hazards and risks	• Dangerous goods to be transport in a safe manner	s9	WTP Traffic Management Plan

Act	Activity/aspect	Requirement	Section of Act	Where addressed
Environmentally Hazardous Chemicals Act 1985	Hazards and risks	• Obtain a permit prior to undertaking prescribed activities involving environmentally hazardous chemicals or a declared chemical waste	s28	Section 5.2
Environmental Planning and Assessment Act 1979	All	• Comply with the conditions of approval for the project and obtain the Minister's approval for any project modifications that are not consistent with the planning approval.	s5.14 s5.25	Section 5.2 Attachment 1
		• Application of other provisions of the EP&A Act • Approvals and legislation that does not apply • Approvals and legislation that must be applied consistently	s5.22 s5.23 s5.24	This table
Environment Protection Biodiversity Conservation Act 1999 (Cth)	Biodiversity	• Do not kill, injure or take a member of a listed threatened species without a permit	Part 13	WTP Flora and Fauna Management Plan
Fisheries Management Act 1994	Dredging or reclamation work	• Written notification to the Minister required prior to carrying out any dredging or reclamation work.	s199	Section 5.2
	Threatened marine species	• Not harm any fish or marine vegetation of a threatened species, population or ecological community.	s220ZA	WTP Flora and Fauna Management Plan
	Damage to critical habitat and habitat of threatened species, population or ecological community	• Not by an act or omission do anything that causes damage to a critical habitat or habitat for a threatened species, population or ecological community	s220ZC s220ZD	WTP Flora and Fauna Management Plan

Act	Activity/aspect	Requirement	Section of Act	Where addressed
	Removal of mangroves for works at Duck Creek / A'Becketts Creek	• Not harm any marine vegetation in a protected area, including mangroves, unless approved under a Part 7 *Fisheries Management Act* permit.	s205	Attachment 3, WTP Flora and Fauna Management Plan
Heritage Act 1977	Discovery of a relic	• The Heritage Council must be notified of the location of a relic if discovered, unless it is believed, on reasonable grounds, that the Heritage Council is aware of the location of the relic.	s146	WTP Heritage Management Plan
Marine Pollution Act 2012	Potential transport of spoil on barge	• Not cause oil to be discharged from ship into waters • Maintain ship so that oil is not discharged into waters • Not carry uncategorised noxious liquid substances as cargo • Not cause an uncategorised noxious liquid substance to be carried as cargo • Ensure that harmful substances are packaged and carried in accordance with the regulations • Not jettison harmful substances in packaged form from ship to waters • Not discharge garbage into waters from ship • Report any reportable incident • Carry appropriate emergency plan depending on the material carried on barge	s15 s16 s27 s28 s45 s46 s60 s61 Part 9 Part 10	No transport of spoil on barge is proposed.
National Greenhouse and Energy Reporting Act 2007 (Cth)	Greenhouse gas emissions and energy consumption	• Report on greenhouse and energy usage data		WTP Sustainability Management Plan

Act	Activity/aspect	Requirement	Section of Act	Where addressed
National Parks and Wildlife Act 1974	Notification of Aboriginal objects	• Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	s89a	WTP Heritage Management Plan
Pesticides Act 1999	Use of pesticides	• Do not: • Wilfully or negligently misuse pesticides in a manner that injures person or damages property, harms animals or plants, causes material harm to endangered, vulnerable or protected animals • Misuse pesticides in a manner that injures person or damages property, harms animals or plants, causes material harm to endangered, vulnerable or protected animals	Part 2 – Division 1 and Division 2	WTP Flora and Fauna Management Plan
Protection of the Environment Operations Act 1997	Licensing	• Environment protection licence required for railway activities – railway infrastructure construction. Works mus not be carried out until an environment protection licence is issued.	s48 Schedule 1, cl. 33	Section 5.2
	Waste, leaks and spills and emissions – Tier 1 Offences	• Not wilfully or negligently: • Dispose of waste in a manner that harms or is likely to harm the environment • Cause any substance to leak, spill or otherwise escape in a manner that harms or is likely to harm the environment • Cause any controlled substance to be emitted into the atmosphere	s115 s116 s117	WTP Waste Management Plan WTP Soil and Water Quality Management Plan WTP Spoil Management Plan WTP Air Quality Management Plan
	Control equipment	• Equipment must be maintained and controlled in a proper and efficient manner.	s167	All CEMP Sub-plans
	Notification of pollution incidents	• Notification to the relevant authority (NSW EPA, Ministry of Health, SafeWork NSW or Fire and Rescue NSW)	s148	Section 12.2

Act	Activity/aspect	Requirement	Section of Act	Where addressed
		must be undertaken in the event of a pollution incident causing or threatening material harm.		
	Pollution incident response management plans	• The holder of an environment protection licence must prepare a pollution incident response management plan in accordance with Part 5.7A of the Act.	s153A	WTP Pollution Incident Response Plan
	Water pollution	• Do not cause water to become polluted	s120	WTP Soil and Water Quality Management Plan WTP Spoil Management Plan
	Air pollution	• Ensure plant is maintained and operated in a proper and efficient manner so as to not cause air pollution • Ensure maintenance work to plant is carried out in a proper and efficient manner so as to not cause air pollution • Ensure the processing, handling, moving, storage and disposal of materials such as spoil is conducted in a manner that will not cause air pollution • Not cause or permit the emission of any offensive odour	s124 s125 s126 s129	WTP Air Quality Management Plan
	Noise pollution	• Operate and maintain plant in a proper and efficient manner so that plant does not cause emissions of noise that arise because of its poor maintenance or operation • Ensure materials are processed, handled, moved, stored or disposed of in a proper and efficient manner so as to not cause the emission of noise as a result of not dealing with materials in a proper and efficient manner.	s139 s140	WTP Noise and Vibration Management Plan
	Land pollution	• Do not cause land to become polluted	s142A	WTP Soil and Water Quality Management Plan

Act	Activity/aspect	Requirement	Section of Act	Where addressed
				WTP Spoil Management Plan
	Waste	• Not transport waste to a facility that cannot lawfully be used as a waste facility for that waste • Not dispose of asbestos at a facility or location not lawfully able to receive asbestos waste • Not reuse or recycle asbestos waste • Not provide misleading or false information about waste	s143 s144 s144AAA s144AAB s144AA	WTP Waste Management Plan
Protection of the Environment Operations (Clean Air) Regulation 2021	Air emission concentrations	• Air emissions not to exceed concentration levels detailed in Schedule 4	Schedule 4	WTP Air Quality Management Plan
Protection of the Environment Operations (Waste) Regulation 2014	Waste	• Comply with record keeping requirements of the regulation. • Comply with tracking requirements for waste, particularly obligations on transporter of waste • Ensure vehicles transporting waste are properly fitted out so that waste does not escape the vehicle in transit • Comply with the transportation and management requirements of asbestos waste	Part 3, Division 1 s45 s70 Part 7	WTP Waste Management Plan
Roads Act 1993	Use of roads	• Obtain approval from Transport for NSW prior to works on classified roads.	s138	WTP Traffic Management Plan
Sydney Water Act 1994	Discharge into Sydney Water assets	• Written agreement with Sydney Water is required prior to the discharge of any substances into Sydney Water-owned assets.	s49	Section 5.2

Act	Activity/aspect	Requirement	Section of Act	Where addressed
Sydney Water Regulation 1994	Plumbing and drainage work that effects Sydney Water assets	• Permit required to do plumbing or drainage work that would effect Sydney Water assets such as connections to stormwater drains	s18	Section 5.2
Waste Avoidance and Resource Recovery Act 1997	Waste	• Implement strategies to reduce waste volumes and report on waste generated		WTP Waste Management Plan
Water Management Act 2000	Aquifer interference	• Obtain aquifer interference approval for dewatering activities that require the extraction of more than three megalitres of groundwater per year	s91F	WTP Groundwater Management Plan

Attachment 3 – Project Permits and Licences Register

Approval	Legislation	Regulatory Authority	Approval holder	Status
Planning Approval	*Environmental Planning and Assessment Act 1979* (NSW)	DPE	Sydney Metro	The Planning Approval was issued on March 11, 2021.
Planning Approval Modifications	*Environmental Planning and Assessment Act 1979* (NSW)	DPE	Sydney Metro	A modification will be sought if variations are proposed where impacts would be inconsistent with the Planning Approval.
Environment Protection License	*Protection of the Environment Operations Act, 1997* (POEO Act)	EPA	Gamuda Australia	EPL to be sought following contract award.
Road Occupancy License	*Roads Act 1993* (NSW)	TfNSW	GALC	Applies to works impacting classified roads. Requested as necessary.
Road Opening Permit	*Roads Act 1993 (NSW)*	City of Parramatta Council Cumberland City Council	GALC	Applies to works undertaken in the Road Reserve (Council land).
Out of Hours Works (OOHW) Approval	N/A	DPE, ER, AA and/or Sydney Metro	GALC	Applies to select elements of works. Requested as necessary in accordance with the OOHW Protocol.
Discharge into Sydney Water assets	*Sydney Water Act 1994*	Sydney Water	GALC	TBC
Work that effects Sydney Water assets	*Sydney Water Regulation 1994*	Sydney Water	GALC	TBC
Part 7 *Fisheries Management Act* permit	*Fisheries Management Act*	NSW Department of Primary Industries	GALC	Applies to works temporarily obstructing fish passage. Applies to works that require the removal of marine vegetation (including mangroves).

Attachment 4 – Environmental Risk Analysis

Table 1: Risk Rating

Likelihood	Consequence Extreme 5	Major 4	Moderate 3	Minor 2	Insignificant 1
Almost Certain 5	Extreme (25)	Extreme (20)	Extreme (15)	High (10)	Moderate (5)
Likely 4	Extreme (20)	Extreme (16)	High (12)	Moderate (8)	Low (4)
Possible 3	Extreme (15)	High (12)	Moderate (9)	Moderate (6)	Low (3)
Unlikely 2	High (10)	Moderate (8)	Moderate (6)	Low (4)	Low (2)
Rare 1	Moderate (5)	Low (4)	Low (3)	Low (2)	Very low (1)

Table 2: Likelihood Scale

Level	Descriptor	Definition
1	Rare	Unlikely to occur during a lifetime or very unlikely to occur
2	Unlikely	Could occur about once during a lifetime or more likely not to occur than to occur
3	Possible	Could occur more than once during Project lifetime or more likely not to occur than to occur
4	Likely	Will probably occur in most circumstances
5	Almost Certain	Is expected to occur in most circumstances

Table 3: Consequence Scale

Level	Descriptor	Definition
1	Insignificant	• Very low environmental and health impacts confined to a small area within the Project area; Prompt (typically within a shift) clean-up; • Negligible loss of human, social, financial or built capital/wellbeing; • Negligible media coverage; • First aid injury.
2	Minor	• Low environmental and health impacts confined within the Project area.; • Short-term (typically within a week) clean-up; • Small but noticeable loss of human, social, financial or built capital/wellbeing, can be easily rehabilitated;

Level	Descriptor	Definition
		• Regulation breaches without fine or litigation; • Negative local media coverage; • Complaint from community; • Medical treatment injury/ occupational health effects/ Restricted Work Injury.
3	Moderate	• Reversible offsite environmental health impacts, requiring shot-term clean-up (weeks); • Onsite medium term (months) clean-up; • Moderate, noticeable loss of financial or built capital/wellbeing; • Regulation breaches resulting in fine or prosecution; • Negative media coverage at local/regional level over more than one day; • Lost time/disabling injury/ occupational health effects/multiple medical treatments.
4	Major	• Major, offsite, environmental and health impacts requiring medium-term clean-up (months); Onsite impact requiring significant clean-up effort (years); • Substantial loss of financial or built capital/wellbeing, will attract public concern; • Major litigation at operation level; • Negative national media cover age; • Fatality or permanent incapacity/health effects.
5	Extreme	• Prolonged or severe, offsite or regional environmental and health impacts requiring long-term clean-up (years) with irreversible residual damage; • Extreme permanent loss of, financial or built capital/ wellbeing, with anticipated major public outrage; • Major litigation or prosecution at parent company level; • Loss of environmental licence; • Fatalities or permanent injuries from single incident.

Project Risk Assessment Findings

To quantify the potential for an impact to cause harm, a series of qualitative environmental risk assessments were undertaken using the ISO 31000:2009 Risk Management – Guidelines and the Gamuda Australia EMS, GA-MSP-005 Risk Management.

Table 1.4 provides a summary of the Project risks.

ATTACHMENT 4 – ENVIRONMENTAL RISK ASSESSMENT

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
Compliance / Approvals	Non-compliance with Environmental Approvals (EIS, CoA, EPL, etc.)	Breach of legislation	Likely	Moderate	High (12)	• Compliance Tracking, adequate resourcing, project induction, staff training, auditing • Carry out works in accordance with CEMP, relevant approvals, licenses and permits and the measures detailed in plans and specifications.	Minor non-compliances	Unlikely	Minor	Low (4)
	Change of legislative / regulatory requirements	Breach of legislation, additional approvals, costs	Possible	Moderate	Moderate (9)	• Compile and maintain a legislation register. • Compliance tracking, auditing, inspections, training.	Minor non-compliances	Unlikely	Minor	Low (4)
Traffic, transport and access	Operation and management of site and heavy vehicles	• Disturbance of public access between local roads • Traffic and parking impacts due to increased number of construction vehicles, site access arrangements and vehicle movements	Possible	Minor	Moderate (6)	• Minimise queuing, parking and idling of construction vehicles on public roads • Where possible, construction related vehicles are to park onsite • Designated heavy vehicle haulage routes communicated to drivers prior to visiting site • Measures identified in the Traffic and Transport Management Sub-plan to be implemented • Deliveries of plant and materials will be undertaken outside of peak periods where possible • Implementation of Traffic Control Plans • Ensure sufficient designated on-site parking for site vehicles • Scheduled road movements will be minimised where possible	Occasional queuing and idling of site vehicles outside site compound	Possible	Insignificant	Low (3)
	Permanent realignment of Unwin Street and Kay Street around the Clyde stabling and maintenance facility	• Changes to localised traffic flows as a result of increased vehicle movements/road closures • Potential traffic congestion/delays at local road access points resulting in complaints	Possible	Moderate	Moderate (9)	Standard and additional mitigation measures as per the Construction Traffic Management Plan are implemented	Occasional traffic congestion/delays	Unlikely	Minor	Low (4)
Noise and Vibration	• General construction works • Out of hours works • Operation of site ancillary facilities • Operation of site vehicles • Operation of heavy machinery for the	• Noise nuisance to sensitive receivers • Vibration nuisance to sensitive receptors	Likely	Moderate	High (12)	• All employees, contractors and subcontractors receiving a Project induction which details specific noise and vibration measures • Toolbox talks communicating mitigation requirements • Review of measures implemented during site inspections as relevant.	No residual impacts are anticipated should all mitigation measures be implemented and adhered to accordingly	Unlikely	Minor	Low (4)

[1] Items may not occur in sequence order

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
	bulk excavation of the dive structure/services facility shaft/tunnel portal • Rock hammers, blast or penetrating cone fracture techniques					• Acoustic hoarding around the site perimeter to be erected to control the dispersion of noise offsite. • Additional portable noise barriers may also be used around particularly noisy equipment such as concrete saws, where necessary. • Plant and machinery will be fitted with manufacturer supplied noise suppression devices and maintained where required • Community updates will be provided throughout the site establishment works • Implementation of respite periods during high noise impact activities • Any equipment not in use for extended periods shall be switched off • Less intensive noise and vibration construction techniques will be used, where possible, to break rock and saw concrete • Additional standard and additional mitigation measures as per the Noise and Vibration Management Plan should be considered for construction activities which are within close proximity to the sensitive receivers • Monitor noise levels (regular compliance monitoring during standard construction hours and during out of hours works • Vehicles leaving or entering site are to be staggered where possible • Works to only be undertaken during the following hours: – 7:00am to 6:00pm Monday to Friday – 8:00am to 6:00pm Saturdays – At no time on Sundays or public holidays • Where ‘highly noise intensive’ works exceed the applicable noise management level (NML) at the same receiver, works are to only be undertaken during the following hours: – 8:00am to 6:00pm Monday to Friday – 8:00am to 1:00pm Saturdays – Respite periods of one hour for every three hours to be applied. • Conduct noise and/or vibration monitoring in response to any formal complaints received				
	Cumulative noise and vibration impacts	Noise and vibration impacts on surrounding communities	Likely	Moderate	High (12)	As per controls above	• Noise and vibration impacts are likely to be felt by	Possible	Minor	Moderate (6)

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
						• OOHW applications to consider adjacent works including underground activities of other Projects • Respite and/or relocation to provide respite in areas of cumulative impact • Awareness of community feedback	receivers surrounding the construction sites, even when compliance with relevant criteria is achieved. • Potential for community complaints remains			
	• General construction works • Operation of site ancillary facilities	Construction Fatigue in community causing increased complaints and complaint escalation	Possible	Moderate	Moderate (9)	• Project delivery to schedule • Communications Strategy • Respite • Noise and Vibration Management Plan • Out of hours procedures and planning • Staged Construction • Compliance with noise and vibration criteria	• Noise and vibration impacts are likely to be felt by receivers surrounding the construction sites, even when compliance with relevant criteria is achieved. • Potential for community complaints remains	Unlikely	Minor	Moderate (6)
Non-Aboriginal heritage	Earthworks including bulk excavation of the dive structure/services facility shaft/tunnel portal	• Discovery of an unexpected non-Aboriginal heritage item or relic • Partial or complete destruction of an unexpected non-Aboriginal heritage item or relic • Accidental destruction or damage of existing heritage items as a result of vehicle strike and movement of plant and equipment • Damage to structural elements of heritage buildings as a result of vibration and or accidental undermining of structures	Possible	Moderate	Moderate (9)	• In the event that unexpected non-Aboriginal heritage items are exposed during construction, the Sydney Metro Exhumation Management Plan and the Unexpected Heritage Finds and Human Remains Procedure would be implemented. • In the event historical archaeological remains are encountered, a program of test excavation (and salvage if required) would be required to be undertaken in accordance with an Archaeological Research Design prepared by a suitably qualified Excavation Director. This may require consultation with Heritage NSW (to be determined on the level of significance of the relics) • Protective measures for heritage items to be established at the earliest phase of site establishment • Vehicle movements to follow site signage and traffic management plan • Site specific heritage induction for all personnel (project staff and contractors), induction to include no-go zones and protocols for protecting heritage from accidental and intentional damage • Vibration testing must be conducted during vibration generating activities that have the potential to impact on heritage items to	Unexpected non-Aboriginal heritage items are exposed	Unlikely	Minor	Low (4)

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
						identify minimum working distances to prevent cosmetic damage. Ln the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the construction methodology must be reviewed and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques • The advice of a heritage specialist must be sought on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage items.				
Aboriginal heritage	Earthworks including bulk excavation of the dive structure/services facility shaft/tunnel portal	• Discovery of an unexpected Aboriginal heritage object • Partial or complete destruction of an unexpected Aboriginal heritage object	Unlikely	Moderate	Moderate (8)	• In the event that unexpected Aboriginal heritage items are exposed during construction, the Sydney Metro Exhumation Management Plan and the Unexpected Heritage Finds and Human Remains Procedure would be implemented. • Aboriginal archaeological test excavation (and salvage when required) will be carried out where intact natural profiles with the potential to contain significant archaeological deposits are encountered. Any excavations should be undertaken in accordance with an Archaeological Research Design prepared in consultation with the Aboriginal community in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 • Site specific heritage induction for all personnel (project staff and contractors), induction to include no-go zones and protocols for protecting heritage from accidental and intentional damage	Unexpected Aboriginal heritage items are exposed	Unlikely	Minor	Low (3)
Business Impacts	General construction activities	Loss of service to surrounding businesses	Possible	Moderate	Moderate (9)	• Planned power and utility interruptions would be scheduled to before or after typical business hours where feasible • Prior notice would be provided to all affected business owners of the interruptions • Engage suitable subcontractor to identify and mark out underground services • Notify the community of planned power/utility outages	Accidental power outages	Unlikely	Minor	Low (4)
Social Impacts	• General construction activities	• Potential temporary social impact on broader	Possible	Moderate	Moderate (9)	• Consultation would be carried out with managers of social infrastructure located near construction sites about the timing and	Temporary loss of access to adjacent properties	Unlikely	Insignificant	Low (2)

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
	• Operation of site ancillary facilities	community from construction activities • Potential temporary impacts, or temporary loss of, community facilities/open space due to construction activities and/or changes to access during construction				duration of construction works and management of potential impacts, with the aim of minimising potential disruption to the use of the social infrastructure from construction activity • Access to all properties will be maintained during site establishment				
Groundwater and ground movement	Earthworks including bulk excavation of the dive structure/services facility shaft/tunnel portal	• Groundwater drawdown and ground movement impacting building integrity	Unlikely	Moderate	Moderate (6)	• Development of geotechnical and hydrogeological model for Stage 1 works. This will be progressively updated during design and construction. • Structural assessment of buildings/structures where risk rating is moderate or greater. • Condition surveys of buildings, structures and utilities. • Groundwater monitoring – levels and quality.	-	Unlikely	Insignificant	Low (2)
		• Reduction in groundwater recharge rates of rock aquifers (Clyde only – all other sites are impervious and works will not impact recharge)	Unlikely	Moderate	Moderate (6)	• Development of geotechnical and hydrogeological model for Stage 1 works. This will be progressively updated during design and construction. • Monitoring of local bores to determine project impact (if any). • Groundwater monitoring – levels and quality.		Rare	Moderate	Low (3)
	Water discharge	• Discharge that does not meet discharge criteria	Possible	Moderate	Moderate (9)	• Water treatment plants (WTP) will be designed to include in-line monitoring sensors to monitor pH and turbidity prior to every discharge. The in-line sensors will be set-up to stop discharge if either parameter is out of range. • Monthly field sampling will be undertaken to verify that water from the treatment plants remains below required parameters. • Training and induction for all employees involved in water quality monitoring and discharge. • WTP plant control through maintenance, operating procedures and emergency response plans.	-			
Soils and surface water quality	Earthworks including bulk excavation of the dive structure/services facility shaft/tunnel portal Material/spoil stockpiling, loading and haulage	Mud tracking from site onto shared public roads Sediment tracking onto roads Stockpiled soils migrating offsite Migration of sediment into nearby stormwater system and/or waterways	Likely	Moderate	High (12)	• Site access and egress points to be fitted with wheel wash facilities and rumble grids • Streetsweepers to be used to management sediment tracking on roads • Erosion and sediment control plans to be prepared for all work and implemented prior to any ground disturbance works	• Localised sediment release offsite during high volume or prolonged rain events • Water ponding around wheel wash	Unlikely	Minor	Low (4)

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
						• Sediment and erosion controls to be inspected regularly for damage. Where damage or potential failures are observed, faults are to be rectified immediately • Workers will undergo a site induction and ongoing toolbox talks regarding erosion and sediment control mitigation • Hardstand areas will be cleaned as soon as practically possible • Soil and Erosion Control Plans will be implemented and maintained	• Offsite migration of sediment as a result of failures to sediment and erosion controls			
	Operation of water treatment plant	Water treatment plant failure leading to uncontrolled discharge or discharge into nearby stormwater system and/or waterways	Unlikely	Major	Moderate (8)	• Weekly inspection of Waste Treatment Plant • Undertake monitoring at treatment plant • Utilisation of an interlock when there is pump failure • Implement measures as detailed within the Soil and Surface Water Quality Management Plan	Inadequately trained staff attending to the water treatment plant	Unlikely	Minor	Low (4)
	Instream works at Duck Creek and A'Becketts Creek	Impacts to water quality due to construction activities, temporary creek diversions and potential sediment dispersal	Likely	Moderate	High (12)	• Erosion and sediment control plans to be prepared for all work and implemented prior to any instream works • Inspect machinery and equipment for leaks prior to being used for instream works • Implement measures as detailed within the Soil and Surface Water Quality Management Plan	Migration of sediment as a result of failures to sediment and erosion controls	Unlikely	Minor	Low (4)
Contamination	Earthworks including bulk excavation of the dive structure/services facility shaft/tunnel portal	Exposing unexpected contaminated material	Possible	Moderate	Moderate (9)	In the event of unexpected contamination or acid sulfate soils, the unexpected contaminated lands and asbestos finds procedure will be followed	Unexpected contaminated material finds resulting in human health or ecological impacts	Unlikely	Minor	Low (4)
	Material/spoil stockpiling, loading and haulage	Incorrect / inappropriate management of unexpected contamination	Possible	Moderate	Moderate (9)	Waste classification in accordance with Environment Protection Authority (EPA) guidelines		Unlikely	Minor	Low (4)
Hydrology and flooding	General construction activities	Increase in flooding risk	Unlikely	Major	Major (8)	• Drainage at construction sites would be designed, where feasible and reasonable, to mitigate potential alterations to local runoff conditions due to construction sites – Hay bale type flow diverters will be used to catch drainage • Provide flood proofing to excavations at risk of flooding or coastal inundation during construction, where feasible and reasonable, such as raised entry into shafts and/or pump out facilities to minimise ingress of floodwaters into open excavations	High volume or prolonged rain events resulting in localised flooding, increased stormwater flows across the site and ponding of water	Unlikely	Minor	Low (4)

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
	Instream works at Duck Creek and A'Becketts Creek	• Increase in flooding risk due to the temporary diversion of Duck Creek and A'Becketts Creek • Increase in flooding risk due to blocking of water flow along Duck Creek and A'Becketts Creek	Unlikely	Major	Moderate (8)	• Further refinement of construction planning for the temporary diversion of Duck Creek and A'Becketts Creek would occur during detailed design to mitigate the identified flooding risk • Preparation of a Stormwater and Flooding Management Plan for Clyde MSF to address flooding risks associated with works within Duck Creek and A'Becketts Creek • Implement control measures to prevent blocking of water flow along Duck Creek and A'Becketts Creek	High volume or prolonged rain events resulting in localised flooding, increased water flows along Duck Creek and A'Becketts Creek	Unlikely	Minor	Low (4)
Biodiversity	• Earthworks including bulk excavation of the dive structure/services facility shaft/tunnel portal • General construction activities	• Spread of noxious weeds • Spread of plant disease and pathogens • Blasting works disrupting foraging behaviour of microbats, grey-headed flying-fox and birds	Possible	Minor	Moderate (6)	• All personnel to undergo toolbox talks that detail the location of weeds and how they are to be disposed of • Weeds to be disposed of appropriately at an authorised wasted disposal facility • General hygiene controls including the cleaning of plant and equipment to be undertaken before and after works • Relevant noise mitigation measures including working hour restrictions to be complied with	• Potential to overlook/delay the clearing of minor growth of weeds • Potential to mistake native vegetation for weeds	Unlikely	Minor	Low (4)
Air quality and odour	Use of heavy machinery and site vehicles	• Generation of dust as a result of vehicle movements and facilities set up • Exhaust emission from plant and equipment	Possible	Minor	Moderate (8)	• Well maintained plant/ equipment and pre-start checks and servicing • Non-complaint vehicles removed from site / repaired • Idling of construction vehicles in residential streets will be minimised	Potential for minor dust generation within the boundaries of the Rosehill site.	Unlikely	Minor	Low (4)
	• General construction activities • Material/spoil stockpiling, loading and haulage	• Generation of dust as a result of vehicle movements • Off-site release of dust • Release of odours • Wind Erosion of material from unsealed areas/open excavations/ uncovered stockpiles	Possible	Minor	Moderate (6)	• Works that would generate dust, will have a modified set up method or will be ceased during high dust generating weather • Adequate dust suppression to be applied during set up works such as dust screens around site boundary and use of a water cart as required • Implement measures outlined in the Air Quality Management Plan • All stockpiles will be covered, seeded or fenced to prevent wind erosion • All trucks entering or leaving the site with loads will have their loads covered • All sealed surfaces within sites and site accesses will be managed to reduce dust generation and sediment tracking onto roads • Sawing of concrete or bricks will be undertaken in a manner that minimises the generation of dust, such as the wetting of the sawing face	Potential for minor dust generation within the boundaries of the site	Unlikely	Minor	Low (4)

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
						• Water and/or odour suppressants to be applied as required • Construction activities will be modified, reduced or controlled during high or unfavourable wind conditions if they have a potential to increase the generation or emission of dust				
Climate change and GHG	General construction activities	Greenhouse gas emissions from combustion of fuels by construction plant/vehicles	Likely	Minor	Moderate (8)	• GALC Sustainability strategies • Plant and equipment maintained in accordance with manufacturers specifications • Construction staging • Climate change risk assessment	Emissions will exist, however will be reduced as much as possible through mitigation measures	Unlikely	Minor	Low (4)
Spoil, waste management and resource use	General construction activities	Inappropriate disposal of waste (including demolition, vegetation and hazardous / special waste, office waste) or disposal at an unlicenced facility	Possible	Moderate	Moderate (9)	• All waste must be collected by an appropriately suitably licensed waste contractors – Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes • Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging • Waste streams would be segregated to avoid cross-contamination of materials • Resource recovery will be applied to the management of construction spoil and will include the recovery of resources for reuse-reusable materials generated by the Project will be segregated for reuse on site, or off site where possible • Recyclable materials will be collected and transported for offsite recycling wherever possible • Materials will be delivered on an ‘as needed’ basis (accurate forecasting) •	Potential material shortage on site	Unlikely	Minor	Low (4)
	Inappropriate storage/insufficient storage of construction spoil	Missed opportunities to maximise the beneficial re-use of spoil and waste	Possible	Minor	Moderate (6)	• Development in accordance with the Spoil Management Plan • Resource recovery will be applied to the management of construction waste and will include the recovery of resources for reuse • Reusable materials generated by the Project will be segregated for reuse on site, or off site where possible. • Recovery of resources for reprocessing, such as the onsite mulching of cleared vegetation for use in landscaping use, in the absence of a higher beneficial use being identified.	•	Unlikely	Minor	Low (4)

Environmental Aspect	Activity[1]	Potential Impacts	Likelihood	Consequence	Risk Rating	Mitigation Measures	Residual Impacts following mitigation	Likelihood	Consequence	Residual Risk Rating
						• Procurement of waste service providers, consideration of waste segregation during site and compound design, training and education of staff				
Urban design and visual amenity	Site establishment and construction	Amenity and visual impacts to sensitive receivers in the vicinity of the construction works and from areas with views of the project site	Possible	Minor	Moderate (6)	• Surveillance and security to deter criminal activity (eg – vandalism) • Lighting angled and positioned to minimise impacts to residential properties • Noise walls, hoarding and fencing to minimise visual, noise and air quality impacts • Consultation with adjacent residents • Review of design of site layout to consider amenity and visual impacts	Impacts are still expected given the nature of activities	Unlikely	Minor	Low (4)
Hazards	• Use of fuel stores, mobile plant and vehicles • Plant and vehicle maintenance	• Leak or spill causing land and water contamination caused by the release of hydrocarbons	Possible	Minor	Moderate (6)	• Fuel and chemicals to be stored in approved containers within a bunded area • Fuel storage to be inspected daily for damage, leaks or tampering • Hydrocarbon spill kits to be made readily available on-site • Refuelling of machinery shall conform to the following requirements: – Designated refuelling area within close proximity to spill response equipment – No fuelling within 30 metres of the upper banks of the watercourse and drainage lines • Fuelling activity to be supervised at all times	Failure of site personnel to conform to refuelling requirements	Unlikely	Minor	Low (4)

Attachment 5 – Emergency Preparedness and Response Procedure

The types of environmental emergencies that could occur on this site are tabulated below.

Note: This plan is designed to supplement both the Gamuda Australia's Project Emergency Response Plan and the Client's site emergency response plan/s, where available.

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 HSE Manager or Supervisor until adverse conditions subside. Deploy additional mitigation measures to exposed areas stockpiles and other dust generating items will be water sprayed or covered.	Project HSEQ Representative / Supervisor
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 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	Head of Project / Construction Manager / Supervisor / Project HSEQ Representative
Flooding	Monitor meteorological conditions – develop contingency strategy for rainfall > 100mm in 24hours or potential for > 1in 5 ARI 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 Review site drainage flow paths Redirect site drainage to prevent flooding of residential/business premises	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.	Construction Manager / Supervisor / Project HSEQ Representative

Emergency	Preparation	Response	Responsibility
	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 Ensure all instream works do not block or prevent the water from flowing through Ensure the temporary diversion of Duck Creek and A'Becketts Creek do not significantly increase the flood risk for the area.		
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. Implement mitigation measures for scour protection.	A review of the site to be undertaken by HSE Manager and Construction Manager / Supervisor. Controls to be repaired or replaced within 24 hours of detection, immediately if inclement weather current.	Construction Manager / Supervisor / Project HSEQ Representative
Damage to sediment basin	Check basins for suitability to project requirements; size, treatment type, etc Basin outlet to be designed to remain functional in 1 in 20 ARI event Ensure basin construction is in accordance with QA requirements including relevant ITPs.	Water in damaged basin to be pumped to another secure basin, or discharged if it meets the site criteria. Damage to be repaired as soon as practical. Repairs to be monitored when basin brought back online.	Construction Manager / Supervisor / Project HSEQ Representative
Spill of hazardous or toxic substance (< 20L)	Awareness training of appropriate response and procedures to be incorporated into Project Induction 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 Construction Manager and/or the Project HSEQ Representative 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. Construction 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.	Construction Manager / Supervisor / Project HSEQ Representative

Emergency	Preparation	Response	Responsibility
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 Adequate supply of absorbent materials available in the site compound and on vehicles in work location 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	Report spill immediately to Head of Project and/or Construction Manager 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. Construction Manager to coordinate the response, clean up 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 Gamuda Australia personnel assisting as required. Commence data gathering and investigation once emergency is contained	Head of Project Construction Manager / Supervisor / Project HSEQ Representative
Vibration causing structural damage	Choose correct plant when working near structures; minimise size and impact Use safe working distances during planning phase Implement vibration monitoring at commencement of vibration generating works to ensure compliance with standards	Activities causing vibration would cease under direction of the Project HSEQ Representative or Construction Manager / Supervisor. Any occupants of buildings may be evacuated with due 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.	Project HSEQ Representative Head of Project
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.	Immediately cease activities Engage consultant to assess damage to vegetation and presence of any endangered or threatened communities.	Construction Manager / Supervisor / Project HSEQ Representative

Emergency	Preparation	Response	Responsibility
	Identify species that may be impacted, include material within the project induction Included requirements within construction planning documentation.		
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 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 Implement procedure for short-term stabilisation and transport to Vet or WIRES Undertake additional vegetation inspection to identify any remaining fauna prior to recommencement.	Construction Manager / Supervisor / Project HSEQ Representative
Damage / destruction of Aboriginal 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 HSE Manager or Construction Manager / 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.	Project HSEQ Representative
Damage / destruction of non-Aboriginal heritage	Ensure site investigations detail any heritage items on or in proximity to the site. 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 Construction Manager / Supervisor. Contact an archaeologist to assess the significance and archaeological potential of the uncovered feature.	Project HSEQ Representative

Attachment 6 – Environmental Inspection Report Form

ENVIRONMENT AND SUSTAINABILITY INSPECTION

Project:					
Inspection Type	☐ Weekly	☐ Pre-Work	☐ Weather	☐ Shut down	☐ Other
Inspection Scope					
Date:		**Start Time:**		**End Time:**	
Attendees: (List both Gamuda Australia-Laing O'Rourke Consortium (GALC) and Subcontractor representatives)	**Name**		**Company**		

Observations					
Item	**Yes**	**No**	**N/A**	**Comments**	**Timeline**
General					
All Environment No-Go zones are well delineated and protected.	☐	☐	☐		
All permits in place (discharge, enter no-go zones, clearing).	☐	☐	☐		
Environmental control plan is approved and displayed in a prominent location.	☐	☐	☐		
Soil and Water					
Upstream clean water diversions are in place.	☐	☐	☐		
Basins are capturing run off appropriately, have functioning sediment controls, and are checked after every rain event.	☐	☐	☐		
All sumps, holding tanks, ponds, wheel wash pits, fish tanks, and basins are functional with no risk of overtopping.	☐	☐	☐		
All construction water is treated and tested before leaving site.	☐	☐	☐		
Stockpiles are managed appropriately (topsoil segregation, VENM, ASS/PASS).	☐	☐	☐		
Wheel wash / shaker grid and hardstand areas are in place and functional at all exits.	☐	☐	☐		
Public roadways are clear of tracked sediment.	☐	☐	☐		
Flora and Fauna					
Boundary/clearing limits are clearly identified.	☐	☐	☐		
Retention trees are clearly identified, and drip zones are clear.	☐	☐	☐		

Weeds are being managed and invasion prevented.	☐	☐	☐		
Cultural Heritage					
All heritage items in vicinity are well protected.	☐	☐	☐		
Vibration monitoring is being undertaken where required.	☐	☐	☐		
Contamination					
Contaminated materials handled and stockpiled correctly (e.g., ACM segregated and covered).	☐	☐	☐		
Decontamination methods for plant and equipment are being implemented.	☐	☐	☐		
The movement of contaminated materials are being monitored and tracked.	☐	☐	☐		
Noise and Vibration					
Appropriate noise and vibration mitigation measures are implemented., e.g., hoardings, screens.	☐	☐	☐		
Where required, noise and vibration monitoring is being undertaken and records are maintained.	☐	☐	☐		
Respite is being provided for high impact noise works e.g., 3/1.	☐	☐	☐		
Non-tonal reversing alarms in use.	☐	☐	☐		
Air Quality					
Effective dust suppression in place (e.g., water carts, misters).	☐	☐	☐		
Exposed areas are stabilised when not in use.	☐	☐	☐		
Visible emissions are less than 10 seconds from all machinery.	☐	☐	☐		
No odour detectable at site boundary.	☐	☐	☐		
Waste					
Waste is segregated and bins are maintained (not overflowing).	☐	☐	☐		
Waste removal is tracked, and records kept.	☐	☐	☐		
Loads are covered prior to leaving site (including spoil haulage).	☐	☐	☐		
Hazardous Substances					
Spill kits are readily available and fully stocked.	☐	☐	☐		
Hazardous substances are stored in bunded containers, away from waterways and drains. Bunds are empty.	☐	☐	☐		

Refuelling and concrete wash out is located away from waterways or drainage lines.	☐	☐	☐		
Resource Use					
Fuel usage is recorded.	☐	☐	☐		
Water meters are installed.	☐	☐	☐		
Non-potable water is used instead of potable water where possible, and tracked., e.g., water cart loads.	☐	☐	☐		
All timber is reused, recycled, or sustainably sourced.	☐	☐	☐		
Where possible, site won material is being reused on-site., e.g., ENM or VENM.	☐	☐	☐		
Site sheds/offices have functioning weather seals, LED lighting, door-closers, push-button taps, and min. 5-star Energy Rating Labelled plug-in electrical equipment.	☐	☐	☐		
People and Place					
Site security, and well-maintained fencing/hoarding is in place, e.g., no graffiti.	☐	☐	☐		
Temporary pedestrian diversions are well maintained and sign-posted, have clear sightlines, adequate lighting and appropriately spaced access and egress points.	☐	☐	☐		
Lights are positioned to avoid spill onto neighbouring properties.	☐	☐	☐		
Community concerns are considered, and feedback is provided to construction team.	☐	☐	☐		

* RISK RANKING:	**1 = High** Action: Imminent safety / environment risk – issue must be rectified immediately	**2 = Medium** Action: Safety / environment risk not imminent however issue is to be rectified immediately.	**3 = Low** Action: Rectify within 24 hours or time frame specified.	**4 = Observation** Positive Observation / Good Practice

Issues / Actions				
Item #	**Item Description / Location**	**Action By**	***Risk Ranking**	**Close Out**

Attachment 7 – Incident Management and Reporting Procedure

Environmental Incident and Non-compliance Reporting Procedure

SM-17-00000096

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Manager, Environment
System Owner:	Executive Director, Safety, Sustainability & Environment
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1. Purpose and scope

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

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

2. Introduction

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

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

3. Definitions

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

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

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

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

4. Accountabilities

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

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

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

5. Environmental Events

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

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

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

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

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

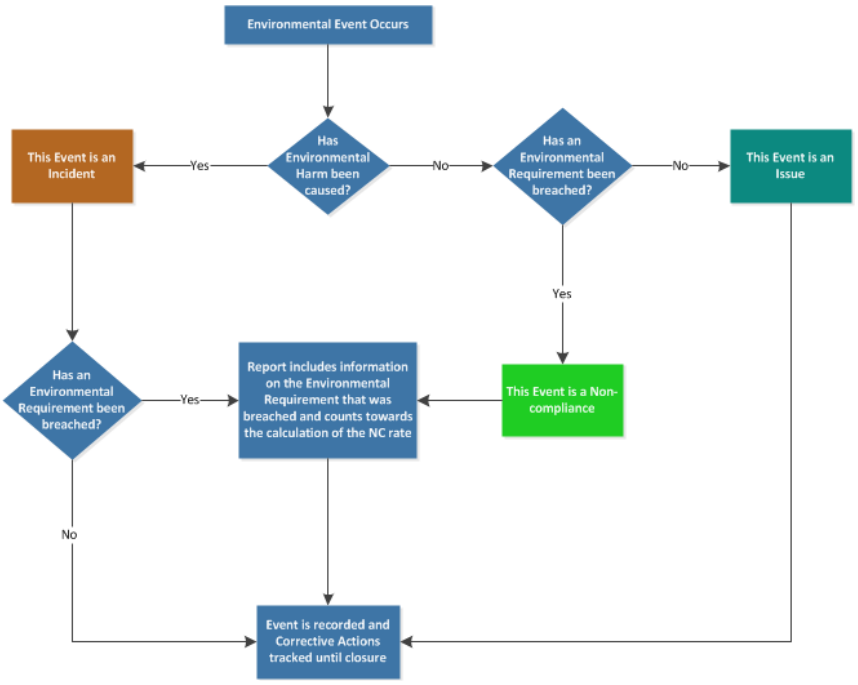


Figure 1: Environmental Event Classification Process

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

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

5.1. Worked Example – Classifying Environmental Events

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

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

5.1.1. Soil and Water Issue

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

5.1.2. Soil and Water Non-compliance

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

5.1.3. Soil and Water Incident

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

5.2. Notifiable Events

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

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

Table 1: Examples of Notifiable Events

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

5.3. Event Types

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

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

Table 2: Environmental Event Types and their descriptions

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

6. Environmental Incident Classification and Management

Sydney Metro has defined an Environmental Incident as:

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

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

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

Table 3: Examples of Environmental Incidents

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

6.1. Incident Classification

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

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

Table 4: Classification System for Environmental Incidents

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

6.1.1. Class 3 Incidents

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

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

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

6.1.2. Class 2 Incidents

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

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

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

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

6.1.3. Class 1 Incidents

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

6.2. Incident Notification

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

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

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

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

6.2.1. Principal's Representative (PR)

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

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

6.2.2. Environmental Lead (EL)

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

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

6.3. Incident Notification Reports

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

6.4. Incident Investigations

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

When conducting an Environmental Incident investigation, they must:

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

6.5. Environmental Incidents with Health and Safety Impacts

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

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

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

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

6.6. Reporting Pollution Incidents to Relevant Authorities

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

Table 5: Contact details for Relevant Authorities

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

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

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

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

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

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

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

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

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

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

6.6.1. Maritime Related Incident Notification and Reporting

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

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

6.7. Environmental Compliance Register

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

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

7. Environmental Non-compliance

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

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

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

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

7.1. Non-compliance Rate

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

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

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

8. Corrective and Preventative Actions

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

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

Actions must:

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

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

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

8.1. Action Status

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

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

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

9. Related Documents and References

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

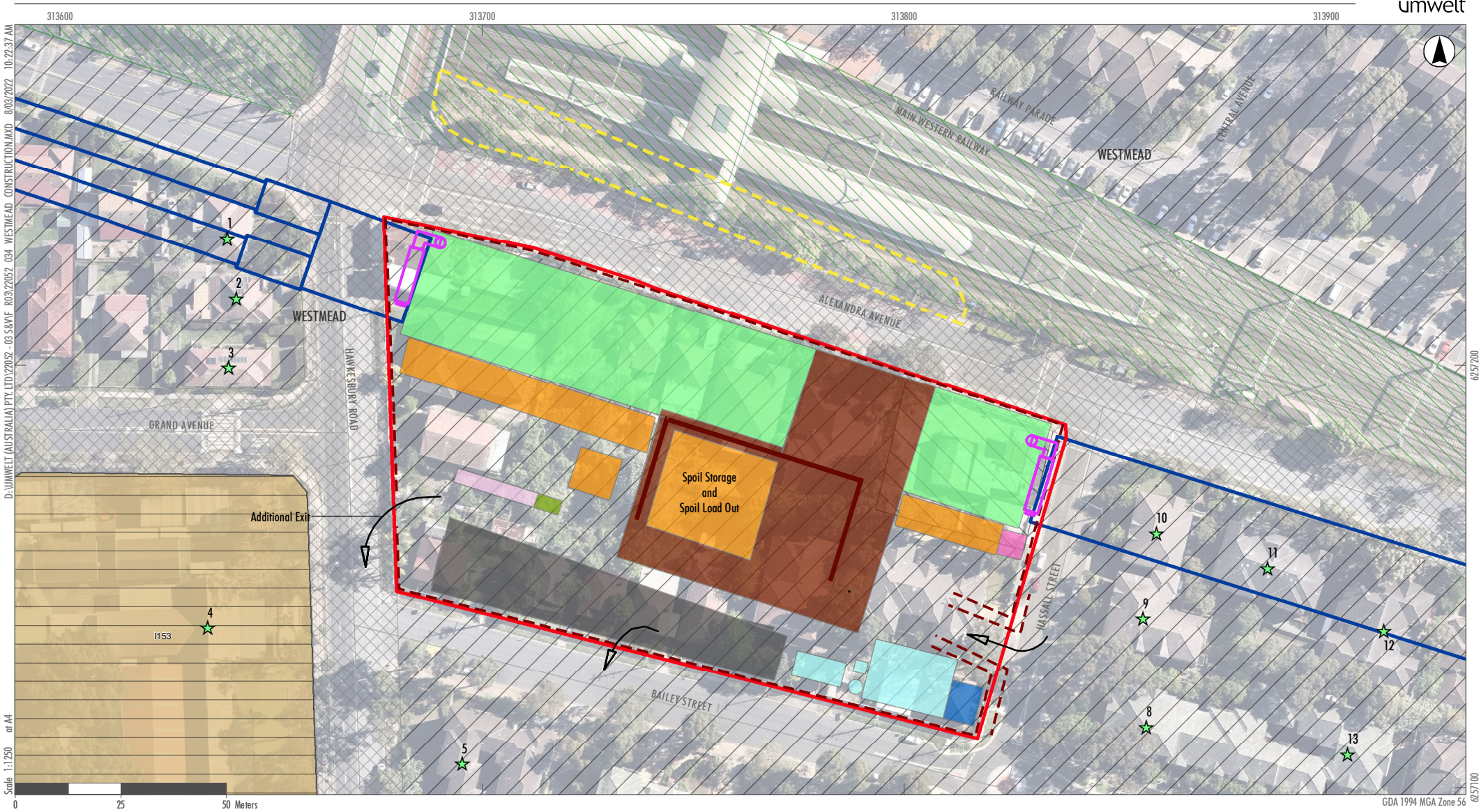
10. Superseded Documents

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

11. Document History

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

Attachment 8 – Environmental Controls Maps



Legend

- Construction Boundary
- Tunnel Alignment
- Sensitive Receivers

Construction Site Elements

- Acoustic Shed
- Box Excavation
- Laydown Area
- Office
- Electrical Kiosk
- Services
- Water Treatment Plant
- Weighbridge
- Wheel Wash
- Entry/Exit
- Hoarding
- Spoil Boundary
- Ventilation

Land Use

- 5.4.1 Urban residential
- 5.5.0 Services
- 5.5.2 Public services
- 5.7.2 Roads
- 5.7.3 Railways

Environmentally Sensitive Areas

- Local Heritage
- No Go Zone

Westmead Construction Site

Image Source: Nearmap (2021) Data source: DFSI (2021)

Westmead Site Environmental Control Measures

Hours of Work

Approved construction hours*:

- 7:00am to 6:00pm Mondays to Fridays, inclusive
- 8:00am to 6:00pm Saturdays, and
- At no time on Sundays or public holidays.

Highly Noise Intensive Works

For highly noise intensive works, the works must be undertaken between the hours of*:

- 8:00 am to 6:00 pm Monday to Friday
- 8:00 am to 1:00 pm Saturday.

** Construction works may only be undertaken outside the approved hours as permitted by an EPL or permit.*

Incident Response

In the event of an environmental incident, the Project Manager and/or Environmental Manager must be notified immediately.

The Project Director, Deputy Project Director and Construction Manager will be made aware as soon as possible.

The Project Director will immediately verbally notify Sydney Metro, followed by written notification within 24 hours of the incident occurring.

In the event an actual or potential incident is reported through the Community Complaints line, the Environment Manager will be contacted immediately to respond and investigate.

Noise and Vibration

Highly noise intensive works in continuous blocks will not exceed three hours, with a minimum respite of one hour before recommencing the activity.

Behavioral Practices

- No swearing or unnecessary shouting or loud stereos/radios on site.
- No dropping of materials from height, throwing of metal items, and slamming of doors.

Vehicle Movement

- Delivery vehicles will be fitted with straps rather than chains for unloading, wherever possible.
- Loading and unloading of materials/deliveries will occur as far as possible from receivers.
- Truck drivers will avoid compression braking as far as practicable.
- Trucks will not idle near to sensitive receivers (e.g. residential receivers).
- Air brake silencers will be used on heavy vehicles that access the construction sites multiple times per night / over multiple nights.
- Where night-time works are required, heavy vehicles will use broadband reversing alarms.

Equipment Use

- Power tools should use mains power where possible rather than generators.
- Shut down machinery, including generators, when not in operation.
- Avoid dropping materials from a height and dampen or line metal trays, as necessary.

Stop Works Procedures

Event	Procedure
Unexpected heritage finds	• Stop work and protect the heritage item by establishing a no-go zone • Notify the Project Manager and Excavation Director • The Excavation Director or Heritage Specialist will assess the unexpected find.
Unexpected human remains	• Stop work and establish a no-go zone • Call the local police and follow instructions • Notify the Project Manager.
Unexpected threatened species finds	• Stop work and determine if it is a threatened species. • If determined a threatened species, or unable to identify, notify the Project Ecologist who will assess the unexpected find • The Project Ecologist will notify the Environmental Manager.
Unexpected contaminated land and asbestos finds	• Stop work and isolate the area. • Notify the Project Manager who will contact the Environmental Manager to assess the unexpected find.

Chemical Storage

- Storage of chemicals on site will occur in accordance with suppliers' instructions and relevant Australian Standards and relevant legislation.
- All chemicals stored on site will be securely sealed and bunded to 110% of their capacity. Incompatible chemicals will be stored separately in accordance with manufactures specifications and compatibility chart.
- An up-to-date register of hazardous chemicals and dangerous goods will be kept onsite at all times.

Key Project Contacts

Role	Name	Contact Number
Project Manager	TBC	TBC
Environmental Manager	TBC	TBC
Stakeholder and Community Engagement Manager	TBC	TBC
Senior Environmental Advisor	TBC	TBC
Construction Manager	TBC	TBC
Excavation Director	TBC	TBC
Heritage Specialist	Melissa Moritz	+614 7707 1001
Project Ecologist	Joel Callaghan Rachel Musgrave	+614 9949 9711 +614 2775 3321
Site Auditor	TBC	TBC
Utilities Coordination Manager	TBC	TBC
WIRES		1300 094 737
Cottage Animal Hospital		(02) 9890 7220
EPA Pollution Line		131 555 or (02) 9995 5555
Sydney Metro Community Information Line		1800 612 173
The Ministry of Health (via the local Public Health Unit)		02 9391 9000
SafeWork NSW		13 10 50
City of Parramatta		(02) 9806 5000
Fire and Rescue NSW		000

Heritage

- If any heritage item is unexpectedly damaged, all work in the area must cease immediately until advice is obtained from the Heritage Specialist.
- Vibration intensive works will not be undertaken within the minimum distance for sensitive heritage buildings identified in the Detailed Noise and Vibration Impact Statement, unless approved.

Soil, Water and Contamination

Erosion Controls

- Disturbed ground and exposed soils will be temporarily stabilised during periods of site inactivity, for more than ten days, to minimise the potential for erosion.
- Exposed surfaces will be minimised, and stabilised / revegetated as soon feasible and reasonable upon completion of construction.
- Stockpiles will be located away from sensitive receivers, traffic areas and watercourses.
- Level or gently sloping areas will be selected as stockpile sites to minimise erosion and potential soil loss where possible.

Visual Amenity

- Offensive graffiti will be cleaned within the timeframes identified in the Visual Amenity Management Plan.
- Stockpiles will be located in a hoarded area and will be managed at appropriate heights to minimise visual and dust impacts, where practicable.
- Work vehicles will be parked in a designated area.
- Rubbish bins will be available and easily accessible from all areas of the construction site to minimise loose rubbish / materials around the site.
- Plant and equipment will be maintained regularly and cleared of dust/ mud when required to minimise visible leaks and track marks.
- Outward facing elements of site hoarding or noise barriers will be regularly maintained, including the removal of weeds.

Flora and Fauna

- Where possible, construction activities would minimise disturbance to waterways and riparian land, through site fencing and signage.
- Equipment storage areas and stockpile areas are to be located in cleared areas and not within drip zones of trees.
- Stockpiling/storage of cleared timber is to be in designated areas and outside the critical root zone of remaining trees.
- No vegetation clearing will be undertaken unless approved and only undertaken by a suitably qualified person.
- Appropriate tools would be used for pruning of vegetation, including loppers, chainsaws and vehicle mounted saws.

Westmead Site Environmental Control Measures

Soil, Water and Contamination cont.

- Cleaning of hardstand areas would be undertaken as soon as practically possible.

Contamination

- The contamination specific management measures outlined in the intrusive detailed site investigations for Westmead will be implemented for the four areas of environmental interest with moderate to very high contaminant risk.
- Hydrocarbon spill kits will be kept onsite, and all staff inducted in their use. Used spill kits must be replaced immediately.
- All spills or leakages will be immediately contained and absorbed.
- The refuelling of plant and maintenance of machinery will be undertaken in designated bunded areas where possible. Refuelling will be attended at all times.
- Vehicles will be properly maintained to minimise the risk of fuel/oil leaks.

Water Discharge

- Progressive Erosion and Sediment Control Plans will be implemented.
- Water discharge to be undertaken in accordance with EPL requirements.
- The rainfall forecast will be monitored to identify and communicate the risk of potentially flooding rains.

Air Quality

- Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather.
- Adjust the intensity of activities based on measured and observed dust levels and weather forecasts.
- Minimise the volume of materials stockpiled and position stockpiles away from surrounding receivers.
- Minimise the extent of opened and disturbed contaminated soil at any given time.
- Apply temporary coverings or odour supressing agents to excavated areas where appropriate.
- Engine idling will be minimised while plant is stationery and engines to be switched off when not being used.
- Suitable dust suppression and/or collection techniques will be used during cutting, grinding or sawing activities likely to generate dust in close proximity to sensitive receivers.
- Weather conditions will be monitored daily.

Waste

- Waste will be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or a suitably licensed facility.
- All waste will be assessed, classified, managed, transported and disposed of in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.
- Waste streams will be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities.
- A materials tracking system will be implemented.

Flora and Fauna cont.

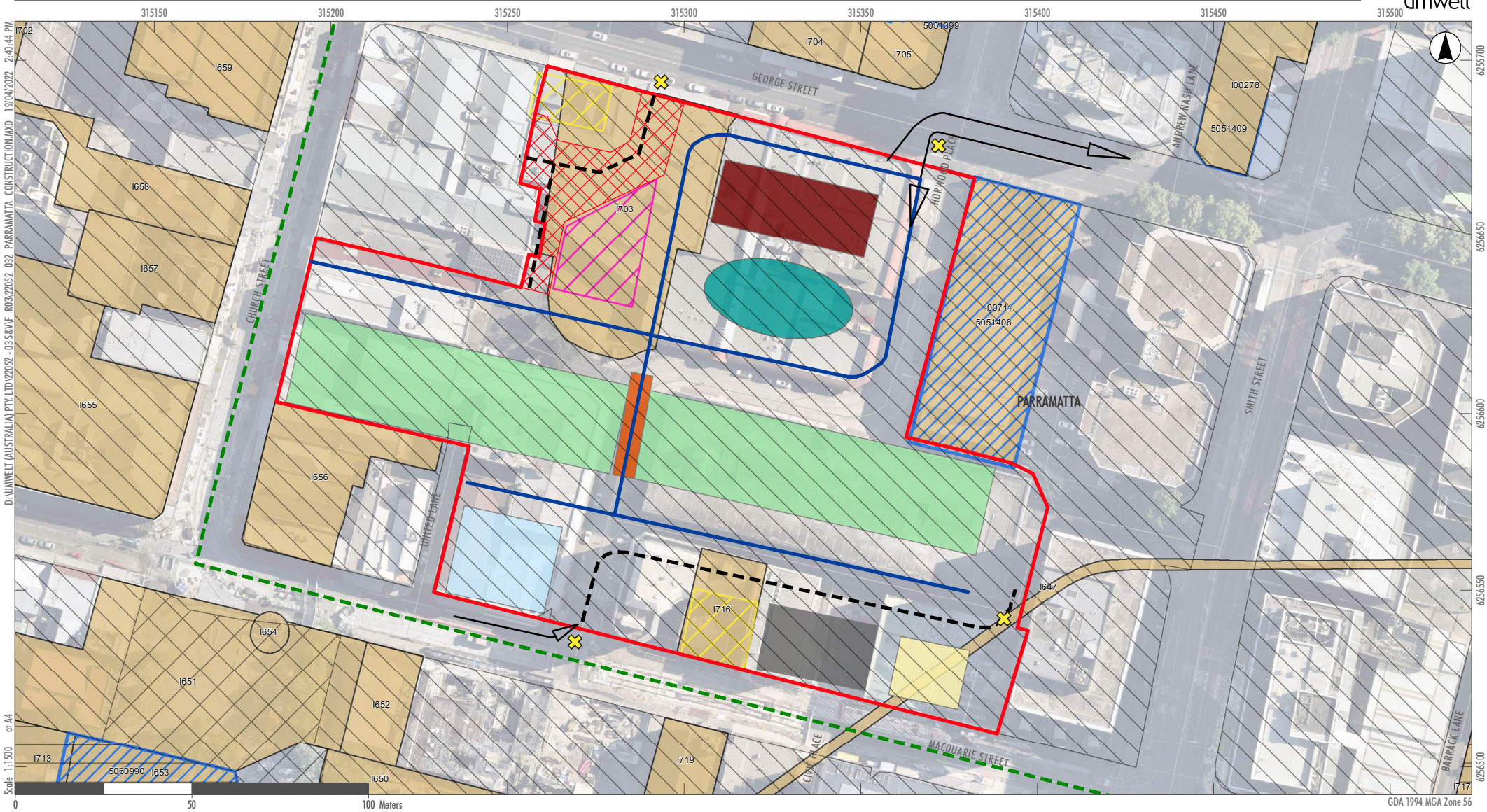
- Works in and around waterways would be avoided, where practicable, to allow sufficient flow and fish passage similar to current conditions.
- Bridges and culverts to be disturbed by construction activities will be checked for roosting bats immediately prior to commencement of any activity.

No-go Zones

- No-go zones would be obeyed at all times without a permit.
- Any damage to no-go zone fencing or signage would be reported to the Site Supervisor or Environmental Advisor immediately.

Weed Control

- Use of pesticides would be in accordance with the Pesticides Act 1999, other relevant legislation, label directions and any relevant industry codes of practice.
- Herbicides will not be applied:
  - When plants are stressed on hot days
  - After seed has been set
  - Within 24 hrs of rain or when rain is imminent
  - During windy conditions when the use of pesticides may affect non-targeted areas.
- Vehicle, Plant and Equipment Movement hygiene procedures will be undertaken, including removal of dirt and/or plant matter vehicles at washdown areas.



Legend

- Construction Boundary
- Parramatta Light Rail
- Area Used for Surrounding Businesses

Construction Site Elements

- Crawler Crane Pads
- Excavation Area
- Excavation Steel Support Storage Area
- Historical Building
- Muck Out Stockpile
- Site Offices
- Site Parking
- Temporary Vehicular Bridge
- Water Treatment Plant
- Entry/Exit
- Public Access Road
- Site Haul Road
- Traffic Control

Land Use

- 5.5.0 Services
- 5.5.2 Public services
- 5.5.3 Recreation and culture

Environmentally Sensitive Areas

- State Heritage Act
- Local Heritage

Parramatta Construction Site

Image Source: Nearmap (2021) Data source: DFSI (2021)

Parramatta Site Environmental Control Measures

Hours of Work

Approved construction hours*:

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Parramatta Site Environmental Control Measures

Soil, Water and Contamination cont.

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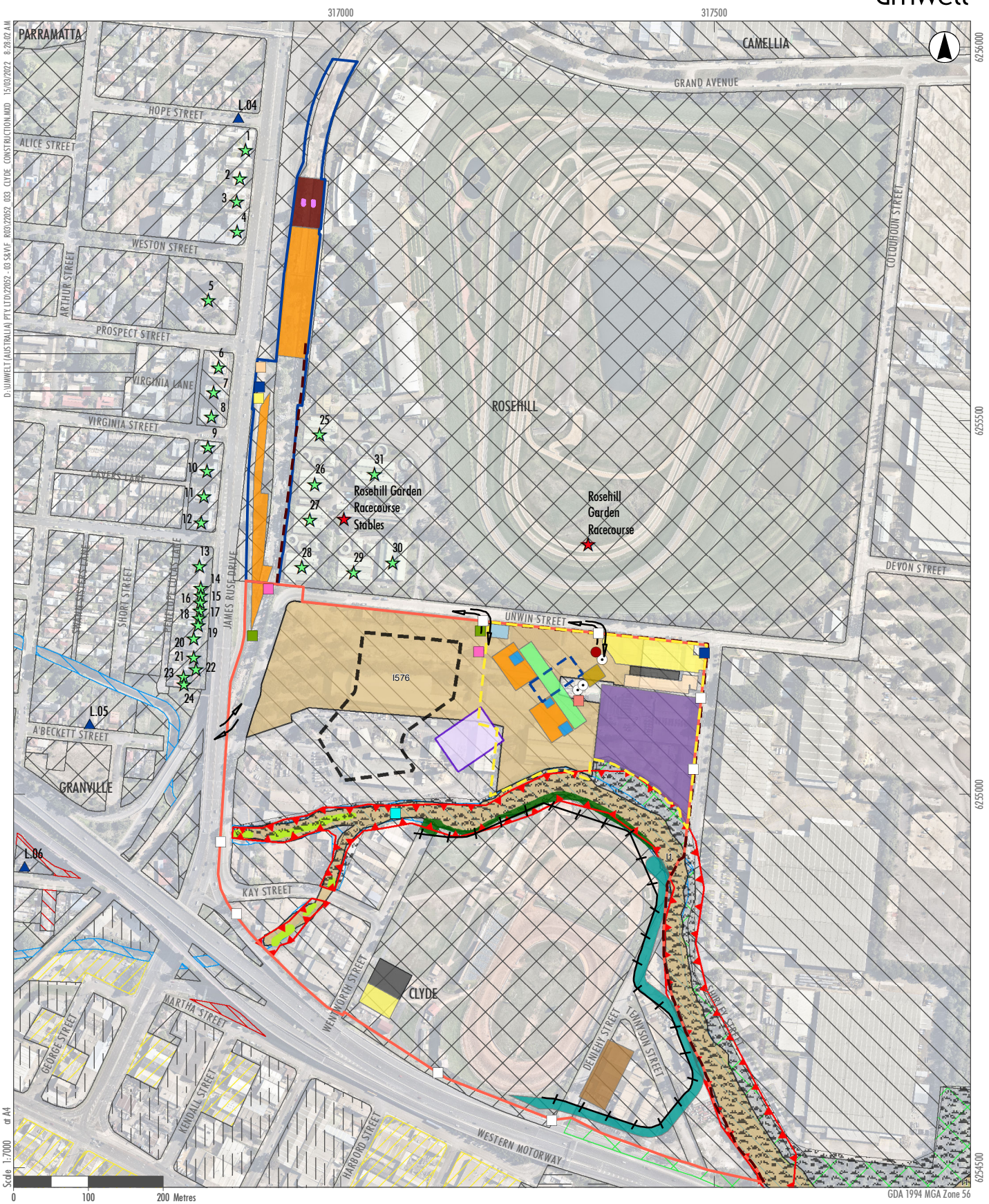


Legend

- Clyde Maintenance and Stabling Facility Project Boundary
- Clyde DIVE Project Boundary
- Rosehill Services Facility Boundary

Construction Site Elements

- Acoustic Shed
- Box Excavation
- Flood Retention Basin
- General Store
- Heavy Lifting Platform
- Laydown Area
- Long Term Site Amenities
- Office
- Parking
- Potential Laydown Area
- Sediment Basin
- Segment Shed
- Spoil Shed
- Utility Corridor
- Water Treatment Plant
- Access Points
- Fabrication Workshop
- Power Station
- Storage Area
- Temporary Bridge
- Waste Facilities
- Weighbridge
- Wheel Wash
- Noise Monitoring Locations
- Entry/Exit
- Hoarding
- Retaining Wall
- Ventilation

Sensitive Receivers

- Sensitive Receivers
- Point of Interest

Environmentally Sensitive Areas

- Local Heritage
- Aboriginal Land
- No Go Zones
- Mangrove Swamps
- Southern Myiotis Habitat

Land Use

- 1.1.7 Other conserved area
- 3.6.0 Land in transition
- 3.6.4 No defined use
- 5.3.1 General purpose factory
- 5.4.1 Urban residential
- 5.5.0 Services
- 5.5.1 Commercial services
- 5.5.2 Public services
- 5.5.3 Recreation and culture
- 6.3.0 River

Clyde Maintenance and Stabling Facility

Image Source: Nearmap (2021) Data source: DFSI (2021)

Clyde / Rosehill Site Environmental Control Measures

Hours of Work

Approved construction hours*:

- 7:00am to 6:00pm Mondays to Fridays, inclusive
- 8:00am to 6:00pm Saturdays, and
- At no time on Sundays or public holidays.

Highly Noise Intensive Works

For highly noise intensive works, the works must be undertaken between the hours of*:

- 8:00 am to 6:00 pm Monday to Friday
- 8:00 am to 1:00 pm Saturday.

** Construction works may only be undertaken outside the approved hours as permitted by an EPL or permit.*

Incident Response

In the event of an environmental incident, the Project Manager and/or Environmental Manager must be notified immediately.

The Project Director, Deputy Project Director and Construction Manager will be made aware as soon as possible.

The Project Director will immediately verbally notify Sydney Metro, followed by written notification within 24 hours of the incident occurring.

In the event an actual or potential incident is reported through the Community Complaints line, the Environment Manager will be contacted immediately to respond and investigate.

Noise and Vibration

Highly noise intensive works in continuous blocks will not exceed three hours, with a minimum respite of one hour before recommencing the activity.

Behavioral Practices

- No swearing or unnecessary shouting or loud stereos/radios on site.
- No dropping of materials from height, throwing of metal items, and slamming of doors.

Vehicle Movement

- Delivery vehicles will be fitted with straps rather than chains for unloading, wherever possible.
- Loading and unloading of materials/deliveries will occur as far as possible from receivers.
- Truck drivers will avoid compression braking as far as practicable.
- Trucks will not idle near to sensitive receivers (e.g. residential receivers or the Rosehill Gardens Racecourse Stables).
- Air brake silencers will be used on heavy vehicles that access the construction sites multiple times per night / over multiple nights.
- Where night-time works are required, heavy vehicles will use broadband reversing alarms.

Equipment Use

- Power tools should use mains power where possible rather than generators.
- Shut down machinery, including generators, when not in operation.
- Avoid dropping materials from a height and dampen or line metal trays, as necessary.

Stop Works Procedures

Event	Procedure
Unexpected heritage finds	• Stop work and protect the heritage item by establishing a no-go zone • Notify the Project Manager and Excavation Director • The Excavation Director or Heritage Specialist will assess the unexpected find.
Unexpected human remains	• Stop work and establish a no-go zone • Call the local police and follow instructions • Notify the Project Manager.
Unexpected threatened species finds	• Stop work and determine if it is a threatened species. • If determined a threatened species, or unable to identify, notify the Project Ecologist who will assess the unexpected find • The Project Ecologist will notify the Environmental Manager.
Unexpected contaminated land and asbestos finds	• Stop work and isolate the area. • Notify the Project Manager who will contact the Environmental Manager to assess the unexpected find.

Key Project Contacts

Role	Name	Contact Number
Project Manager	Evan Morgan (Rosehill) Niall Fry (MSF) Jeremy Nethercott (Dive)	+614 1869 5939 +614 0976 9393 +614 4806 2474
Environmental Manager	David Mudd	TBC
Stakeholder and Community Engagement Manager	Liem Ngo	+614 7272 7480
Senior Environmental Advisor	David Windnagel	TBC
Construction Manager	Andy Thompson	+614 2347 9033
Excavation Director	TBC	TBC
Heritage Specialist	Melissa Moritz	+614 7707 1001
Project Ecologist	Joel Callaghan Rachel Musgrave	+614 9949 9711 +614 2775 3321
Site Auditor	Kylie Lloyd	(02) 9251 8070
Utilities Coordination Manager	TBC	TBC
WIRES		1300 094 737
Merrylands Vet		(02) 9682 1547
EPA Pollution Line		131 555 or (02) 9995 5555
Sydney Metro Community Information Line		1800 612 173
The Ministry of Health (via the local Public Health Unit)		02 9391 9000
SafeWork NSW		13 10 50
City of Parramatta		(02) 9806 5000
Fire and Rescue NSW		000

Chemical Storage

- Storage of chemicals on site will occur in accordance with suppliers' instructions and relevant Australian Standards and relevant legislation.
- All chemicals stored on site will be securely sealed and bunded to 110% of their capacity. Incompatible chemicals will be stored separately in accordance with manufactures specifications and compatibility chart.
- An up-to-date register of hazardous chemicals and dangerous goods will be kept onsite at all times.

Heritage

- If any heritage item is unexpectedly damaged, all work in the area must cease immediately until advice is obtained from the Heritage Specialist.
- Vibration intensive works will not be undertaken within the minimum distance for sensitive heritage buildings identified in the Detailed Noise and Vibration Impact Statement, unless approved.

Soil, Water and Contamination

Erosion Controls

- Disturbed ground and exposed soils will be temporarily stabilised during periods of site inactivity, for more than ten days, to minimise the potential for erosion.
- Exposed surfaces will be minimised, and stabilised / revegetated as soon feasible and reasonable upon completion of construction.
- Stockpiles will be located away from sensitive receivers, traffic areas and watercourses.
- Level or gently sloping areas will be selected as stockpile sites to minimise erosion and potential soil loss where possible.

Visual Amenity

- Offensive graffiti will be cleaned within the timeframes identified in the Visual Amenity Management Plan.
- Stockpiles will be located in a hoarded area and will be managed at appropriate heights to minimise visual and dust impacts, where practicable.
- Work vehicles will be parked in a designated area.
- Rubbish bins will be available and easily accessible from all areas of the construction site to minimise loose rubbish / materials around the site.
- Plant and equipment will be maintained regularly and cleared of dust/ mud when required to minimise visible leaks and track marks.
- Outward facing elements of site hoarding or noise barriers will be regularly maintained, including the removal of weeds.

Flora and Fauna

- Where possible, construction activities would minimise disturbance to waterways and riparian land, through site fencing and signage.
- Equipment storage areas and stockpile areas are to be located in cleared areas and not within drip zones of trees.
- Stockpiling/storage of cleared timber is to be in designated areas and outside the critical root zone of remaining trees.
- No vegetation clearing will be undertaken unless approved and only undertaken by a suitably qualified person.
- Appropriate tools would be used for pruning of vegetation, including loppers, chainsaws and vehicle mounted saws.

Clyde / Rosehill Site Environmental Control Measures

Soil, Water and Contamination cont.

- Cleaning of hardstand areas would be undertaken as soon as practically possible.

Contamination

- The contamination specific management measures outlined in the intrusive detailed site investigations for Clyde MSF will be implemented for the 10 areas of environmental interest with moderate to very high contaminant risk.
- Hydrocarbon spill kits will be kept onsite, and all staff inducted in their use. Used spill kits must be replaced immediately.
- All spills or leakages will be immediately contained and absorbed.
- The refuelling of plant and maintenance of machinery will be undertaken in designated bunded areas where possible. Refuelling will be attended at all times.
- Vehicles will be properly maintained to minimise the risk of fuel/oil leaks.

Water Discharge

- Progressive Erosion and Sediment Control Plans will be implemented.
- Water discharge to be undertaken in accordance with EPL requirements.
- The rainfall forecast will be monitored to identify and communicate the risk of potentially flooding rains.

Working within Duck Creek / A'Becketts Creek

- Undertake work in periods of predicted low flow to minimise impacts
- Where practical, minimise riparian vegetation removal, and limit works and access to the minimum amount of waterway bank length
- For as long as feasibly possible, retain stumps in riparian zones and aquatic habitats to minimise potential erosion of the creek bank

Air Quality

- Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather.
- Adjust the intensity of activities based on measured and observed dust levels and weather forecasts.
- Minimise the volume of materials stockpiled and position stockpiles away from surrounding receivers.
- Minimise the extent of opened and disturbed contaminated soil at any given time.
- Apply temporary coverings or odour supressing agents to excavated areas where appropriate.
- Engine idling will be minimised while plant is stationery and engines to be switched off when not being used.
- Suitable dust suppression and/or collection techniques will be used during cutting, grinding or sawing activities likely to generate dust in close proximity to sensitive receivers.
- Weather conditions will be monitored daily.

Waste

- Waste will be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or a suitably licensed facility.
- All waste will be assessed, classified, managed, transported and disposed of in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.
- Waste streams will be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities.
- A materials tracking system will be implemented.

Flora and Fauna cont.

- Works in and around waterways would be avoided, where practicable, to allow sufficient flow and fish passage similar to current conditions.
- Bridges and culverts to be disturbed by construction activities will be checked for roosting bats immediately prior to commencement of any activity.

No-go Zones

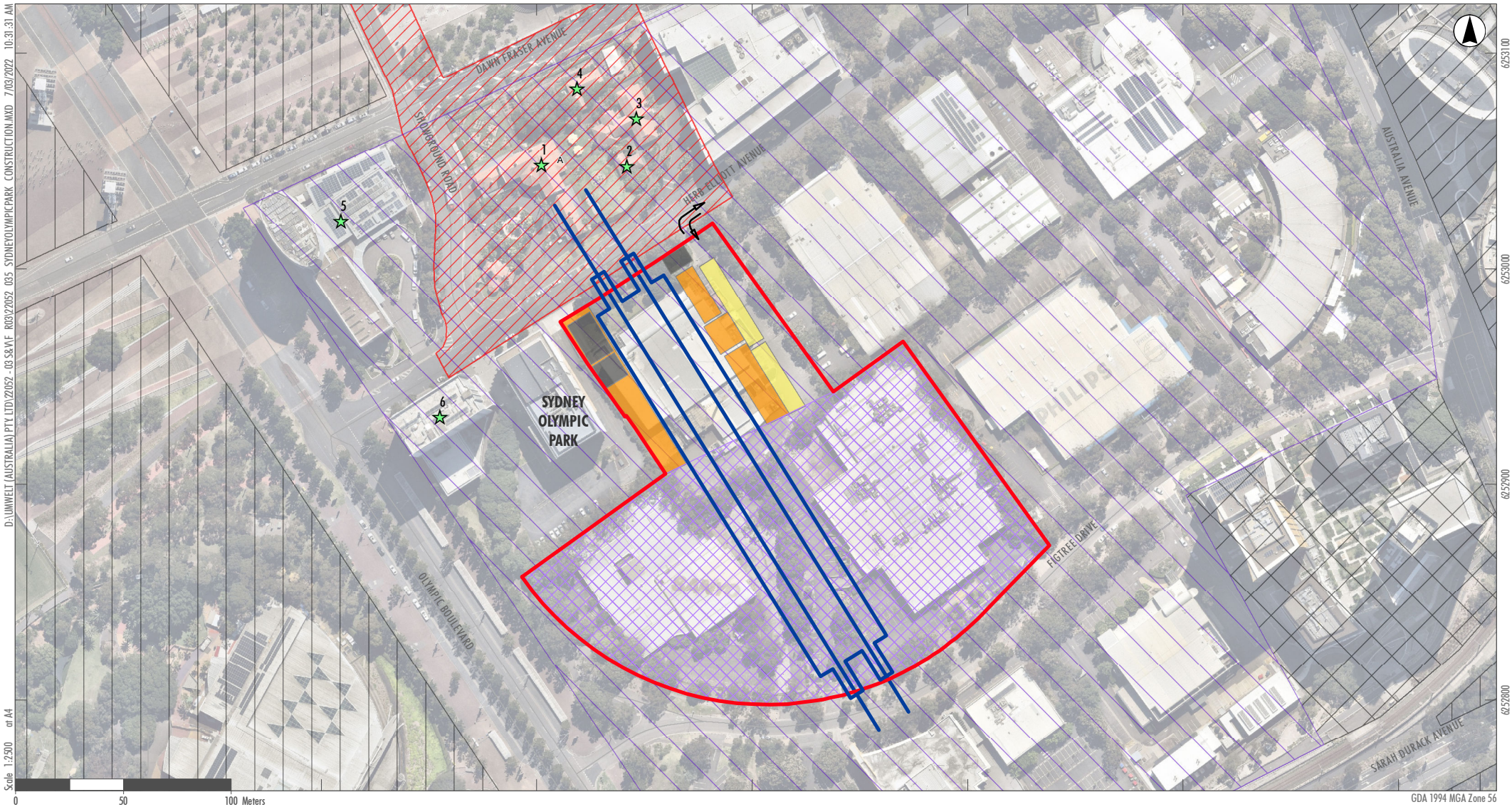
- No-go zones would be obeyed at all times without a permit.
- Any damage to no-go zone fencing or signage would be reported to the Site Supervisor or Environmental Advisor immediately.

Weed Control

- Use of pesticides would be in accordance with the Pesticides Act 1999, other relevant legislation, label directions and any relevant industry codes of practice.
- Herbicides will not be applied:
  - When plants are stressed on hot days
  - After seed has been set
  - Within 24 hrs of rain or when rain is imminent
  - During windy conditions when the use of pesticides may affect non-targeted areas.
- Vehicle, Plant and Equipment Movement hygiene procedures will be undertaken, including removal of dirt and/or plant matter vehicles at washdown areas.

Working within Duck Creek / A'Becketts Creek

- Any in-stream works would ensure sufficient flow and fish passage, by minimising sediment disturbance and physical blocking (including large machinery)
- Incorporate suitable scour protection



Legend

- Construction Boundary
- Tunnel Alignment
- Sensitive Receivers

Construction Site Elements

- Laydown
- Office
- Parking
- Central Tunnelling Package
- Entry/Exit

Land Use

- 3.6.0 Land in transition
- 5.4.1 Urban residential
- 5.5.1 Commercial services
- 5.5.3 Recreation and culture

Environmentally Sensitive Areas

- Conservation Area - General

Sydney Olympic Park Construction Site

Image Source: Nearmap (2021) Data source: DFSI (2021)

Sydney Olympic Park Site Environmental Control Measures

Hours of Work

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Site Auditor	TBC	TBC
Utilities Coordination Manager	TBC	TBC
WIRES		1300 094 737
Animal Referral Hospital Homebush Veterinary Specialists		(02) 9758 8666
EPA Pollution Line		131 555 or (02) 9995 5555
Sydney Metro Community Information Line		1800 612 173
The Ministry of Health (via the local Public Health Unit)		02 9391 9000
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Sydney Olympic Park Site Environmental Control Measures

Soil, Water and Contamination cont.

- Cleaning of hardstand areas would be undertaken as soon as practically possible.

Contamination

- Hydrocarbon spill kits will be kept onsite, and all staff inducted in their use. Used spill kits must be replaced immediately.
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Waste

- Waste will be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or a suitably licensed facility.
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Flora and Fauna cont.

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No-go Zones

- No-go zones would be obeyed at all times without a permit.
- Any damage to no-go zone fencing or signage would be reported to the Site Supervisor or Environmental Advisor immediately.

Weed Control

- Use of pesticides would be in accordance with the Pesticides Act 1999, other relevant legislation, label directions and any relevant industry codes of practice.
- Herbicides will not be applied:
  - When plants are stressed on hot days
  - After seed has been set
  - Within 24 hrs of rain or when rain is imminent
  - During windy conditions when the use of pesticides may affect non-targeted areas.
- Vehicle, Plant and Equipment Movement hygiene procedures will be undertaken, including removal of dirt and/or plant matter vehicles at washdown areas.

Attachment 9 – Construction Site Layouts

Preliminary construction site layouts at each construction site are provided below, which are generally in accordance with the EIS. However, the Project construction sites are subject to final detailed design and may change after the preparation of this document, based on opportunities for improvement and considerations of access, worker, and public safety, environmental and community (such as noise or light) impacts, COVID 19 Health Orders and other pertinent factors.

In consideration of this, at the completion of the detailed design process, final layouts will be reviewed for consistency against the Infrastructure Approval in accordance with Section 5.25 of the *Environmental Planning & Assessment Act* 1979 (EP&A Act). At this time, layout changes following completion of detailed design will be captured in a revision to this document along with responses to Project requirements updated where applicable.

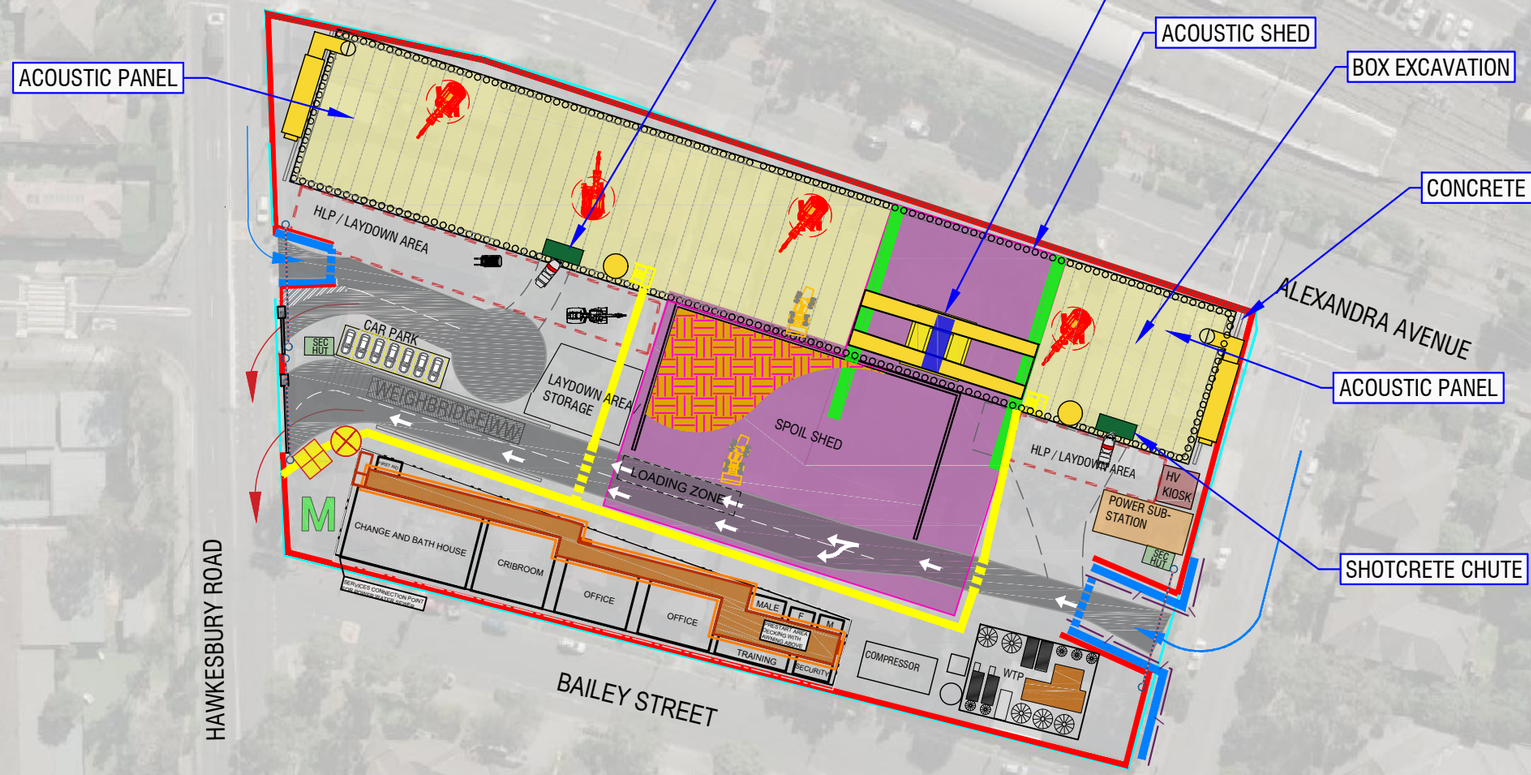
The construction site layouts provided below show the indicative final (i.e. during operation of the site for the purpose of Project construction) layout of each construction site. It is noted that sites will progress through interim phases of site establishment prior to this final state being achieved.

Interim site layouts are generally short in nature, and it is proposed final site layouts will be achieved within about six months of the commencement of construction.

Following completion of detailed design, final site layouts may be updated during construction to reflect a change in methodology or optimisation of available space. In the case of such adjustments to site layouts as provided below, where these have no greater impact to the environment, community or compliance as described herein, these changes will not necessitate an update to this document.

STAGE 3 - BOX EXCAVATION (5 MONTHS)

- PERIMETER FOR TRAFFIC PROTECTION
- ACOUSTIC SHED
- STATION BOX EXCAVATION
- VENTILATION INSTALLATION
- SUPPORT EQUIPMENT INSTALLATION
- SERVICES RETICULATION



LEGEND

- STAIR TOWER
- CONCRETE BARRIER
- CONCRETE DROP CHUTE
- MATERIAL HOIST
- SPOIL

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CLIENT

NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS

GAMUDA Australia | LAING O'ROURKE

DRAWN JESSIE LI

DESIGNED SAVANNAH SANG

DRG CHECK

DESIGN CHECK

APPROVED

SYDNEY METRO

THE WESTMEAD STATION
MOBILISATION & SITE ESTABLISHMENT - STAGE 3
BOX EXCAVATION
SITE LAYOUT

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STAGE 3 - (BOX AND NOZZLES EXCAVATION - 13 MONTHS)

- STATION BOX NOZZLE EXCAVATION
- INSTALLATION OF TEMPORARY SUPPORT FRAMES
- FRP WORKS TO NOZZLE AND BOX INVERT
- TRAVERSING OF THE TBM'S

AREA FOR EXISTING BUSINESS

HISTORICAL BUILDING

GEORGE STREET

EXCAVATION STEEL SUPPORT STORAGE AREA

CIVIC LINK INSTALLED AFTER D-WALL/ CAPPING BEAM AT EAST END OF STATION BOX

CRAWLER CRAINE PADS

CHURCH STREET

TEMPORARY VEHICULAR BRIDGE

MUCK OUT STOCKPILE

ROXY THEATRE

STATION BOX

POSSIBLE CONVEYOR FOR MUCK OUT

EXCAVATION AREA

EXCAVATION AREA

MACQUARIE LANE

ROAD CROSSING

SMITH STREET

SITE OFFICES

CAR PARK

WATER TREATMENT PLANT

CIVIC LINK ACCESS

HISTORICAL BUILDING

LEGEND

- PERIMETER HOARDING
- WATER BARRIERS
- SITE ACCESS POINTS
- LAYDOWN/ STORAGE
- TRAFFIC CONTROL
- PUBLIC ACCESS ROAD
- SITE HAUL ROAD
- HERITAGE BUILDINGS
- WATER TREATMENT PLANT
- CIVIC LINK

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CLIENT

NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS

DRAWN MATTHEW STUART

DESIGNED HUW GRIFFITHS

DRG CHECK

DESIGN CHECK

APPROVED

SYDNEY METRO

THE PARRAMATA STATION
MOBILISATION AND SITE ESTABLISHMENT - STAGE 3
BOX EXCAVATION AND NOZZLES EXCAVATION
SITE LAYOUT

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STAGE 3 - PEAK PRODUCTION (6 MONTHS)

- COMPLETE FRP FOUNDATIONS FOR RETAINING WALLS AND FINAL INSTALLATION
- CULVERTS COMPLETION
- OVERPASS CONSTRUCTION ONGOING
- START BACKFILL WITH TUNNEL SANDSTONE ROSEHILL TO SOP SPUR TUNNEL SPOIL
- COMPLETE RETAINING WALL
- CONSTRUCT KAY STREET DIVERSION
- COMPLETE ROAD TIE IN WORKS FOR FUTURE TRAFFIC SWITCH
- DRAINAGE OUTLET INSTALLATION

LEGEND

SPOIL COMING FROM ROSEHILL AND CLYDE DIVE

EARTHWORKS IN PROGRESS

CULVERTS

UTILITY CORRIDOR COMPLETED

ROSEHILL STAGING DRAWINGS SHOWN SEPARATELY IN OTHER SET OF DRAWINGS

SHIRLEY STREET

UNWIN STREET

DUCK CREEK

SEDIMENT BASIN

START BACKFILL MSF PLATFORM

DELIVERY & LAYDOWN AREA

LAYDOWN AREA

CS: HERITAGE AREA

KAY STREET

UNWIN STREET DIVERSION AND OVERPASS WORK IN PROGRESS

WATERMAIN TO BE GROUTED ONCE NEW WATERMAIN IS COMISSIONED

INTERNAL HAUL ROAD AND SPOIL COMING FROM ROSEHILL SHED AND CLYDE DECLINE SHED

CLYDE DIVE STAGING SHOWN IN OTHER SET OF DRAWINGS

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SCALES

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CLIENT

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SERVICE PROVIDERS

GAMUDA Australia | LAING O'ROURKE

DRAWN JESSIE LI

DESIGNED JEAN-FRANCOIS KIELT

DRG CHECK

DESIGN CHECK

APPROVED

SYDNEY METRO

CLYDE MSF CLYDE DECLINE AND ROSEHILL
MOBILISATION AND SITE ESTABLISHMENT - STAGE 3
PEAK PRODUCTION
SITE LAYOUT

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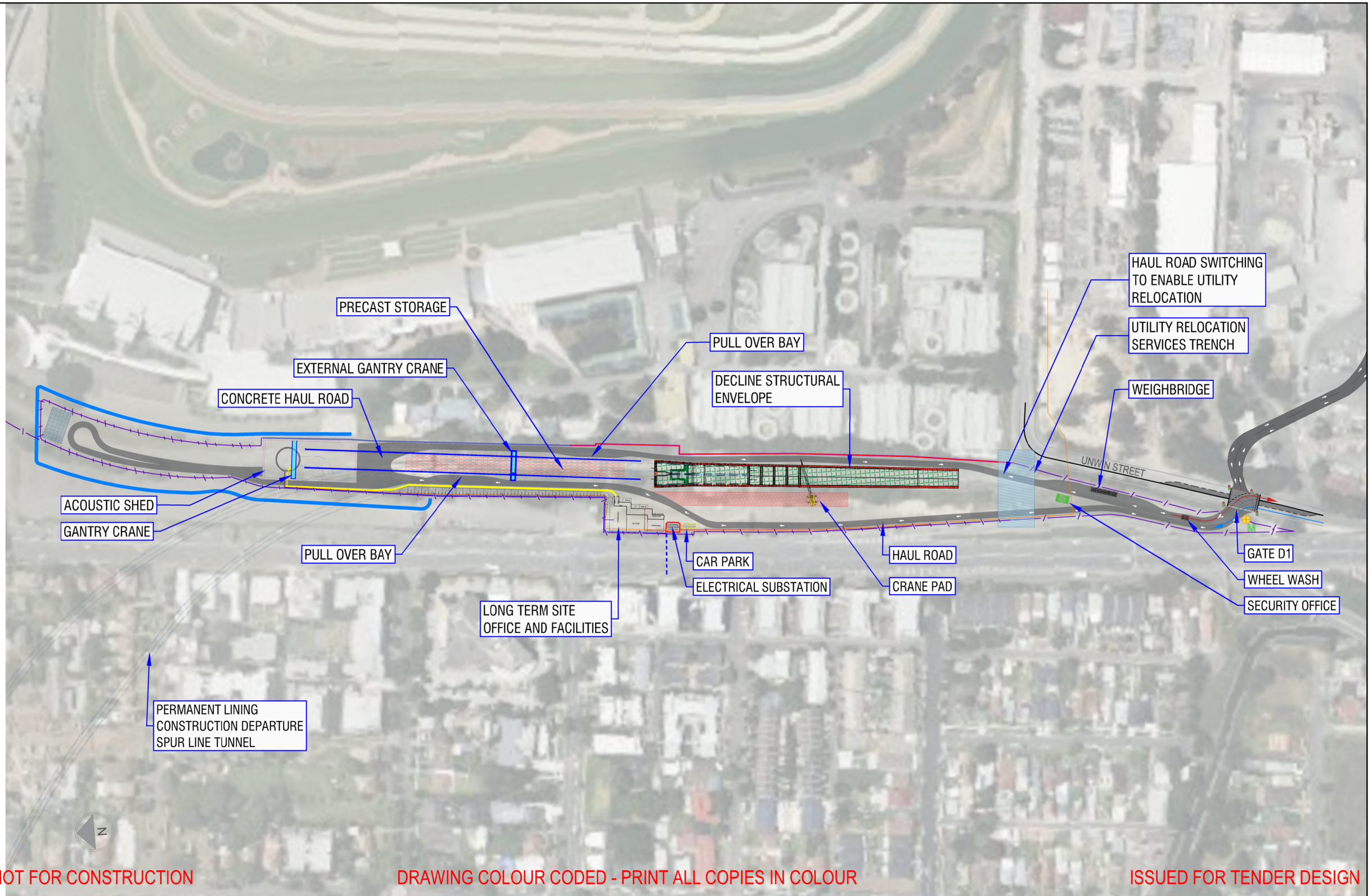

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SCALES

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SERVICE PROVIDERS

GAMUDA Australia | LAING O'ROURKE

DRAWN MATTHEW STUART

DESIGNED MATTHEW STUART

DRG CHECK

DESIGN CHECK JEREMY NETHERCOTT

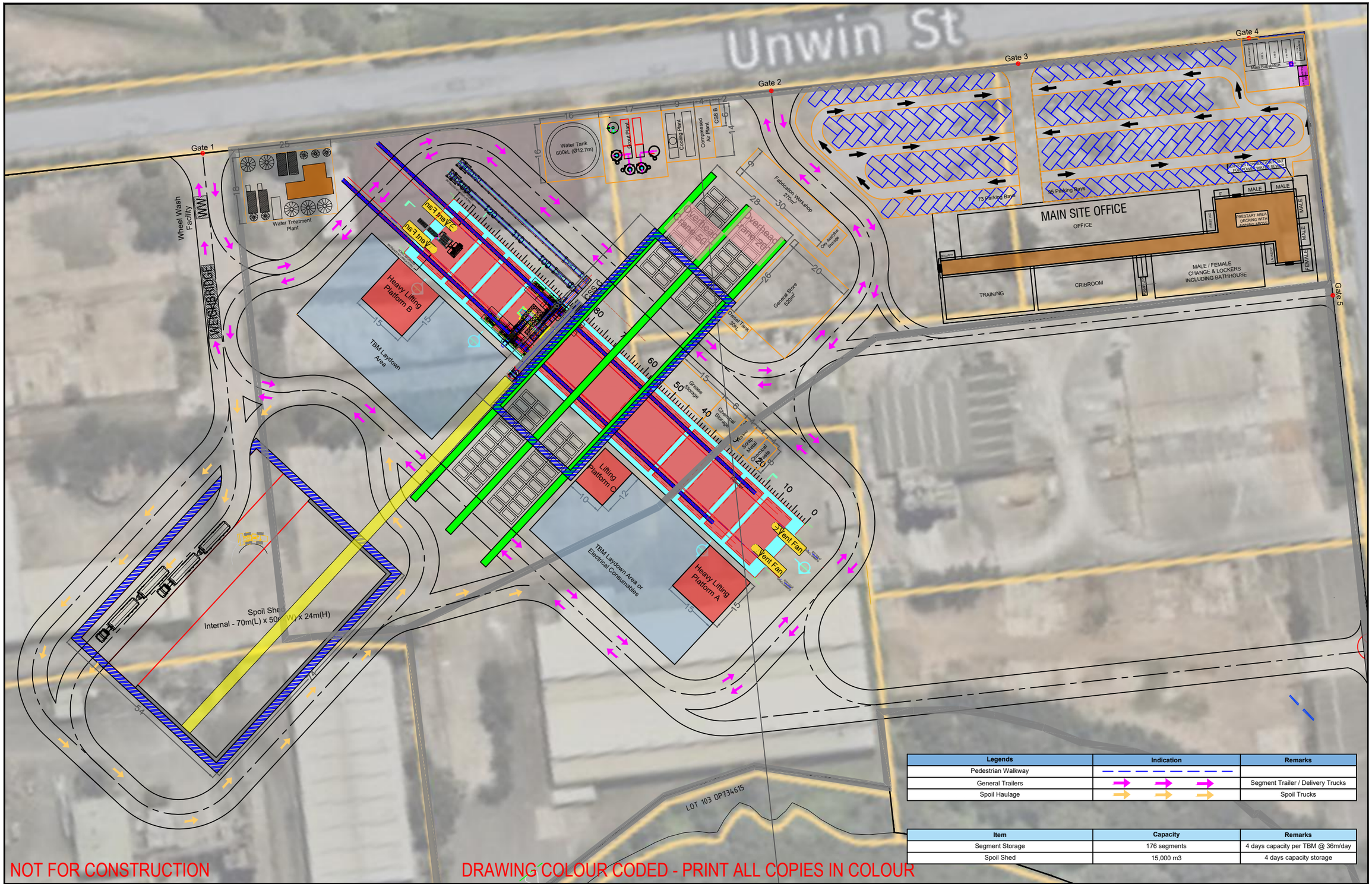
APPROVED

SYDNEY METRO

THE CLYDE DIVE AND PORTAL STRUCTURE
TUNNEL LINING AND PORTAL CONSTRUCTION
SITE LAYOUT
PRECAST STORAGE LAYOUT

STATUS: TENDER DESIGN | SHEET 14 OF 14 | ©

DRG No. SMWSTWTP-GALC-SWD-TD700-MB-DRG-003014 | REV. A



Legends	Indication	Remarks
Pedestrian Walkway		
General Trailers		Segment Trailer / Delivery Trucks
Spoil Haulage		Spoil Trucks

Item	Capacity	Remarks
Segment Storage	176 segments	4 days capacity per TBM @ 36m/day
Spoil Shed	15,000 m3	4 days capacity storage

NOT FOR CONSTRUCTION

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
E	M.S	03.03.2022	DIMENSIONS & REVISED WATER TANK	-
D	D.B	21.02.2022	ROUTE, SEGMENT STORAGE, OVERHEAD CRANE	-
C	S.S	10.02.2022	REVISED ROUTE, PLANT, SITE OFFICE AND PARKING	-
B	S.S	04/02/2022	AWAY FROM HANDOVER AREA	-
A	T.O	28.01.2022	OPTION FOR POST TENDER	

A3 Original | Co-ordinate System: MGA Zone 56 | Height Datum: A.H.D. | This sheet may be prepared using colour and may be incomplete if copied

SCALES

NOTE: Do not scale from this drawing. | ALT. DRG No [Alt. Drg. No.]

CLIENT

NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS

DRAWN Shazwan/Mohan
DESIGNED Shazwan/Mohan
DRG CHECK
DESIGN CHECK
APPROVED

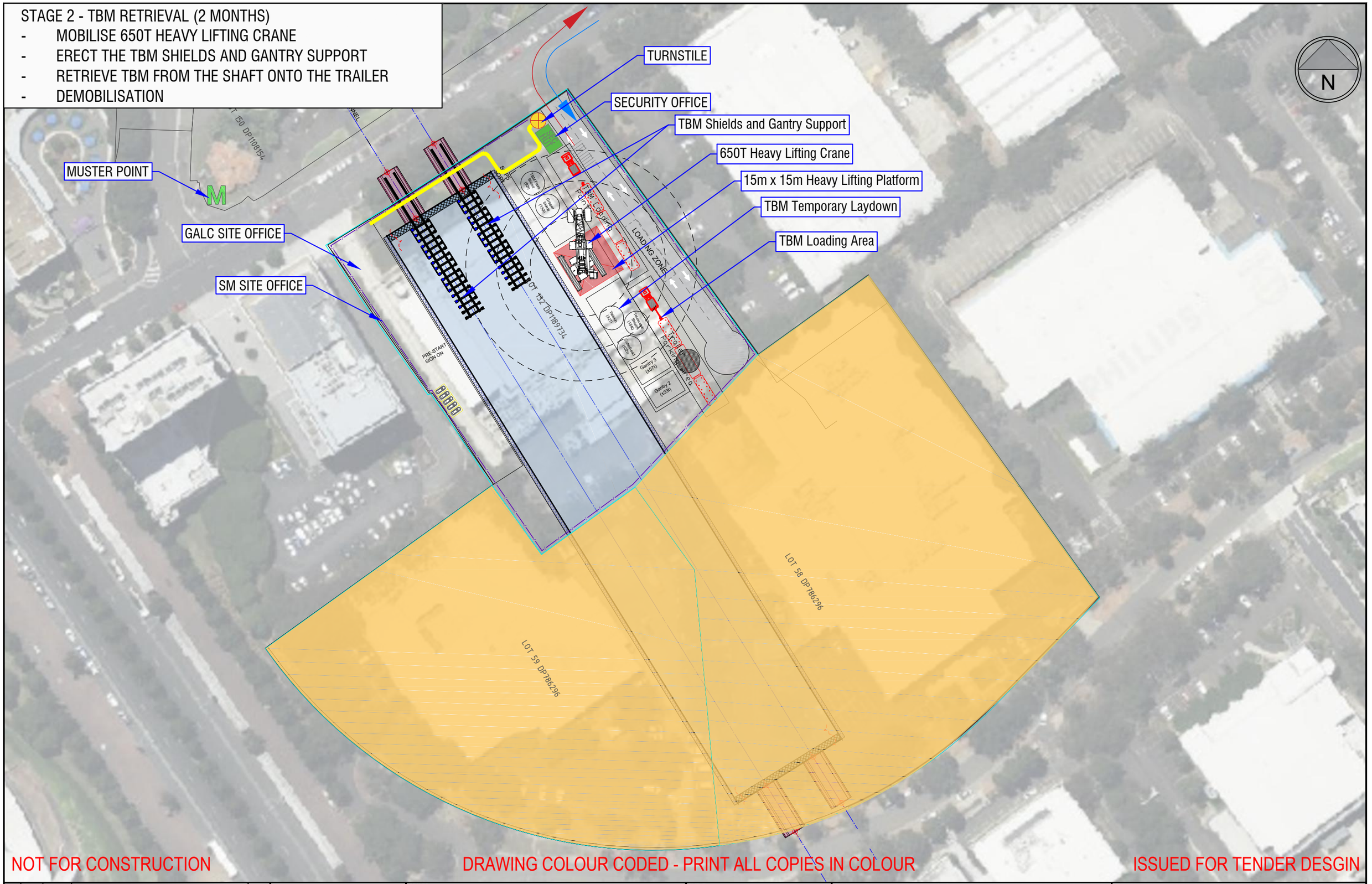
SYDNEY METRO

ROSEHILL STATION
SITE LAYOUT OPTION (AWAY FROM HANDOVER AREA)
TBM ESTABLISHMENT
SITE LAYOUT

STATUS: POST TENDER | SHEET 1 OF 1 | ©

DRG No. TBC | REV. A

STAGE 2 - TBM RETRIEVAL (2 MONTHS)
- MOBILISE 650T HEAVY LIFTING CRANE
- ERECT THE TBM SHIELDS AND GANTRY SUPPORT
- RETRIEVE TBM FROM THE SHAFT ONTO THE TRAILER
- DEMOBILISATION



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ISSUED FOR TENDER DESGIN

REV.	BY	DATE	DESCRIPTION	APPD.
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
A	D.P	30.09.2021	DRAFT	

A3 Original | Co-ordinate System: MGA Zone 56 | Height Datum: A.H.D. | This sheet may be prepared using colour and may be incomplete if copied

SCALES
10 0 20m
1:1000 FULL SIZE A3

NOTE: Do not scale from this drawing. ALT. DRG No [Alt. Drg. No.]

CLIENT
NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS
GAMUDA Australia | LAING O'ROURKE

DRAWN SHAZWAN
DESIGNED SHAZWAN
DRG CHECK
DESIGN CHECK
APPROVED

SYDNEY METRO
THE SYDNEY OLYMPIC PARK STATION
MOBILISATION & SITE ESTABLISHMENT - STAGE 2
TBM RETRIEVAL
SITE LAYOUT

STATUS: TENDER DESIGN | SHEET 2 OF 3 | ©

DRG No. SMWSTWTP-GALC-OLP-SN400-MB-DRG-000002 | REV. A

Attachment 10 – SMW WTP Environmental Policy

ENVIRONMENT

Our Commitment

GALC values the natural environment and its cultural heritage and is committed to providing net positive environmental outcomes. We support ecologically sustainable development and will adopt responsible environmental practices in all our business operations.

Our Approach

GALC addresses its commitment to environmental sustainability and conservation through the consistent implementation of its Environmental Management System and by the following:

- Comply with relevant legal and regulatory obligations, standards, licences, and client requirements.
- Integrate environmental aspects into all project decision making, including planning, design, construction, and delivery.
- Enhance the awareness and knowledge of our employees, subcontractors, and supply chain to promote a shared culture of environmental accountability.
- Establish environmental objectives and targets, and transparently communicate our performance to ensure we continually improve.
- Focus on identifying and implementing opportunities throughout design and construction to identify and implement operational resource use efficiencies.
- Take proactive steps to prevent adverse environmental and heritage impacts.
- Minimise waste generation as far as reasonably practicable and prioritise the re-use and recycling of surplus materials.
- Investigate significant environment incidents and take immediate actions to prevent recurrence.
- Work collaboratively with all stakeholders to leave a positive environment and heritage legacy.

Simon Hussey
Deputy Project Director – Western Tunnelling Package
Gamuda (Australia) Branch