# Sydney Metro West, Power Enabling Works

# Construction Environmental Management Plan (CEMP)

3869-SMW-CEMP-001

Revision 1.2

13 May 2022

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| Rev 1.1 | 18/02/2022 | Update Section 4.2 – Ancillary Facilities | T. St Vincent Welsh | J. Maltese | D.Leyden |
| Rev 1.2 | 13/05/2022 | Update Section 4.1 – Updated Works Scope and Figure 3<br>Update Section 4.2 – Ancillary Facilities | T. St Vincent Welsh | J. Maltese | D.Leyden |

HBI Healthy Buildings International Pty Ltd
A.C.N. 003 270 693 A.B.N. 39 003 270 693

Suite 2.06, Level 2
29-31 Solent Circuit
Norwest, NSW 2153

Tel: 61 (02) 9659 5433
e-mail: hbi@hbi.com.au
Web: www.hbi.com.au

Stuart Hodgson
Director Sustainability, Environment
& Planning
Metro West
Sydney Metro
Transport for NSW
PO Box K659
HAYMARKET NSW 1240

18 May 2022

REF: CEMP REV1.2

Dear Stuart

**RE: Sydney Metro Power Enabling Works: Construction Environmental Management Plan (CEMP Rev 1.2)**

I refer to Sydney Metro's (SM) submission of the following revised document required by Condition C1 of the Sydney Metro West Infrastructure Approval (SSI 10038); an earlier version of which was approved by the Department of Planning, Industry and Environment (DPIE) on 11 March 2021:

- Sydney Metro West, Power Enabling Works Construction Environmental Management Plan (CEMP Rev 1.2 dated 13 May 2022).

It is noted that:

- The CEMP Rev 0.0 was approved on 18 June 2021.
- The CEMP Rev 1.0 was revised to include a different materials compound area located within the Bays project site called L7, further away from the site boundary and further away from commercial and residential receivers. This compound has now been decommissioned and changes have been made to the layout of the Compound on Robert Street (O1). The use of compound L7 has now ceased and the area returned to AFJV.
- The CEMP Rev 1.1 included a modification of Compound O1 to include a revised layout.
- This CEMP Revision 1.2 includes a slightly changed alignment at Robert Street due to design modifications (partly to avoid potential heritage impacts) and the establishment and use of an ancillary facility in the adjacent Ports Authority NSW (PANSW) land. It is understood that Quickway is to lease the land on a temporary basis from PANSW (Lease not sighted as part of the ER review). The area will require OOHs usage to support OOHWs on Robert Street that can only be conducted OOHs.
- Sydney Metro has reviewed the document and has no comments.
- Following the above reviews, the document is considered to be consistent with the existing approval of the CEMP with changes being considered minor amendments, and contains information required by the Conditions of Approval (SSI 10038) in relation to the CEMP.

- The CEMP plan content relating to eastern Creek is the subject of a separate planning approval and is not considered to form part of this endorsement.

As the approved Environmental Representative for the Metro West and as required by Condition A30(j), on the basis of the above comments the Construction Environmental Management Plan (CEMP Revision 1.2) is approved.

The approval assumes and is conditional upon the following:

- Quickway will enter into a lease agreement with PANSW and comply with related conditions of the lease;
- Out of Hours Works at the PANSW site will be completed under an Approved OOHWs Permit;
- Any complaints from residents related to the works are addressed appropriately and effectively.

Yours sincerely

Michael Woolley

Environmental Representative – Sydney Metro West – Power Enabling Works
CC: John Ieroklis, Matthew Marrinan, Ben Armstrong; Chris Sherry

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# Glossary / Abbreviations

| Abbreviation | Description / Definition |
|---|---|
| AR | SMW Concept and Stage 1 Amendment Report (2020) |
| ASS | Acid Sulfate Soils |
| AS/NZS | Australia/New Zealand Standards |
| CEMP | Construction Environmental Management Plan |
| CCS | Community Communications Strategy |
| CNVS | Construction Noise and Vibration Standard (Sydney Metro). |
| Contractor | Quickway Constructions Pty Ltd |
| MCoA | Condition of Approval |
| DECC | Former Department of Environment and Climate Change (NSW) now NSW Office of Environment and Heritage. |
| DPIE | NSW Department of Planning, Infrastructure and Environment |
| DPI (Water) | NSW Department of Primary Industries (Water) (Former Office of Water) |
| Eastern Creek | Eastern Creek Pre-Cast Facility Power Supply Works site |
| EIS | SMW Project Environmental Impact Statement (Jacobs/Arcadis 2020) |
| EMS | Environmental Management System |
| Environmental aspect | Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment |
| Environmental incident | An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance with the conditions of this approval.<br>*Note "material harm" is identified as actual or potential harm to health or safety of human beings or to the environmental that is not trivial, or results in actual or potential loss or property damage of an amount, or amounts in aggregate exceeding $10,000. |
| Environmental impact | Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects |
| Environmental objective | Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve |
| Environment Policy | Statement by an organisation of its intention and principles for environmental performance |
| EPA | NSW Environment Protection Authority |
| EP&A Act | *NSW Environmental Planning and Assessment Act 1979* |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act, 1999* |
| EPL | NSW Environment Protection Licence under the *Protection of the Environment Operations Act 1997*. |

| Abbreviation | Description / Definition |
|---|---|
| ESCP | Erosion and Sediment Control Plan |
| EWMS | Environmental Work Method Statements |
| Hold point | Is a verification point that prevents work from commencing prior to release. |
| Material harm | This is harm that:<br>(a) involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial or<br>(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment). |
| Minister, the | NSW Minister for Planning |
| MCoA | NSW Minister for Planning Condition of Approval |
| Non-compliance | An occurrence, set of circumstances or development that is a breach of this approval but is not an incident. |
| CNVMP | Noise and Vibration Management Sub-plan |
| PASS | Potential Acid Sulfate Soils |
| PIRMP | Pollution Incident Response Management Plan |
| PMF | Probable Maximum Flood |
| PoEO Act | *NSW Protection of the Environment Operations Act 1997* |
| Principal, the | Sydney Metro |
| Proponent, the | The person identified as the proponent in Schedule 1 of the Infrastructure Approval (Sydney Metro) |
| REF | SMW Eastern Creek Precast Facilities Review of Environmental Factors (Jacobs 2020) |
| Relevant Councils | Any or all as relevant |
| REMM | Revised Environmental Management Measure |
| RMS | NSW Roads and Maritime Services now TfNSW |
| RoLs | Road Occupancy Licences |
| Secretary | Secretary of the Department of Planning and Environment |
| SEMP | Site Establishment Management Plan |
| SMW | Sydney Metro West |
| SR | SMW Concept and Stage 1 Submissions Report (2020) |
| SSI | State Significant Infrastructure |
| SWMP | Soil and Water Quality Management Plan |
| the Project | SMW Power Supply Works |
| The Bays | Power Supply Works from Manning St to White Bay |
| TfNSW | Transport for NSW |

# 1. Introduction

## 1.1 Background

Sydney Metro is Australia's biggest public transport program comprising four main packages of work. The Sydney Metro West (SMW) package is a critical part of this overall program extending from Westmead to 'The Bays' site in Rozelle, this package aims to:

- provide faster more reliable public transport options between greater Parramatta and the Sydney CBD;
- double the existing rail capacity between Parramatta and Sydney CBDs;
- support growing residential and employment zones between Westmead and The Bays; and
- allow for better public transport transfers between rail lines.

SMW would be located largely underground in twin tunnels. Excavation of the tunnels and underground stations will be undertaken by a combination of Road-Headers (RHs) and Tunnel Boring Machines (TBMs) both of which have significant electrical power supply demands. The power demands are of a magnitude that can only be provided to each worksite via a High Voltage (HV) feeder.

To be able to achieve this, a 33kV power supply needs to be provided to the future Metro Bays Station precinct to enable the TBM to be energised and commissioned. This temporary construction power feed will also provide the operational bulk supply power to the station and rail line following the completion of tunnelling.

The SMW Project requires the construction and operation of two adjacent precast facilities located on Lenore Drive, Eastern Creek to support the construction of the SMW. Low Voltage (LV) power is required at the Eastern Creek Pre-Cast Facility to enable manufacture of the precast tunnelling segments.

Sydney Metro (SM) (the Proponent) has engaged Quickway to construct the high voltage connections to The Bays station worksite and the Pre-Cast Facilities at Eastern Creek, collectively referred to herein as the Project. This will ensure HV power is available for the follow-on Sydney Metro Tunnelling & Station Excavation contractor(s) and LV supply to the Precast Facility for production of segments.

## 1.2 Statutory Context

The Project was subject to environmental impact assessment under two approval pathways of the Environmental *Planning and Assessment Act 1979* (EP&A Act).

### 1.2.1 The Bays Station Power Supply

The HV power supply connection for The Bays Station forms part of the Sydney Metro West Critical State Significant Infrastructure (CSSI 10038) Project. An Environmental Impact Statement (EIS) (Jacobs/Arcadis, 2020) was prepared for the project under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as a State Significant Infrastructure (SSI). The EIS was placed on public exhibition from 30 April 2020 to 26 June 2020. Submissions were received from government, agencies, organisations and the public in repose to the project.

A Submissions Report was prepared by TfNSW in response to submissions received during the exhibition period. An Amendment Report (AR) was prepared by TfNSW in 2020 as a result of continued design development and refinement.

Approval of the Sydney Metro West Concept and Stage 1 was granted by the Secretary of the Department of Planning, Industry and Infrastructure (DPIE) on 11 March 2021.

### 1.2.2 Sydney Metro West Eastern Creek Precast Facilities Power Supply

The LV power connection for the precast facilities forms part of the Sydney Metro West Eastern Creek Precast Facilities proposal. A Review of Environmental Factors (REF) was prepared by TfNSW in November 2020 to satisfy the process under s.111 of the EP&A Act to "*examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity*" and s.112 in making decisions on the likely significance of any environmental impacts.

The assessments in the REF and the Addendum Report were taken into account and it is concluded that the proposed activity is not likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats. Consequently, an Environmental Impact Statement is not required to be prepared under Division 5.1 of the EP&A Act. It is also considered that the proposed activity does not trigger the need for referral or approval under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Sydney Metro prepared a Review of Environmental Factors Determination Report in March 2021 which included Approval of the Project in accordance with the Conditions of Approval (REF-CoA).

## 1.3 Sydney Metro Construction Environmental Management Framework

The Sydney Metro Construction Environmental Management Framework (CEMF) details the approach to environmental management and monitoring during construction, which will be applied to the proposal. The framework is a linking document between planning approval documentation and construction environmental management documentation, which would be developed by the construction contractors.

The Sydney Metro West EIS and Eastern Creek Precast Facilities Eastern Creek Precast Facilities - Determination Report for Review of Environmental Factors each make commitment to implement the CEMF. The CEMF therefore provides a common approach to environmental management across the two sites subject to separate approval pathways.

# 2. Scope

The scope of this Plan is to describe how Quickway propose to manage environmental issues during construction of the Project.

Operational environmental issues and management measures do not fall within the scope of this Plan and therefore are not included within the processes contained within this Plan.

The CEMP has been prepared in accordance with the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004) and the CEMF.

The CEMP addresses relevant Project requirements and all relevant licences, permits and approvals. The Quickway signed corporate Environment Policy has been attached to this CEMP (7.10) and was developed in accordance with Section 5.2 of ISO 14001:2015.

- Cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and the CEMF
- Include a contract specific environmental policy
- Detail how applicable performance outcomes, commitments and mitigation measures will be implemented and achieved during construction
- Include a description of activities to be undertaken during construction

- include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed
- Identify roles that have environmental accountabilities or responsibilities
- Identify communication requirements, including liaison with stakeholders and the community
- Include induction and training requirements and a summary of the Training Needs Analysis
- Include management strategies for environmental compliance and a review of the performance of environmental controls
- Identify procedures for environmental inspections and monitoring auditing and review, and reporting on environmental performance including compliance tracking
- Include procedures for emergency and incident management, non-compliance management and corrective and preventative action
- Include procedures for the control of environmental records.

Operational environmental issues and management measures do not fall within the scope of this Plan and therefore are not included within the processes contained within this Plan.

## 2.1 Environmental Management System overview

This CEMP has been written in accordance with the Quickway Environmental Management System (EMS). Quickway is commitment to managing environmental outcomes and reducing our impact on the environment and have implemented an EMS which has been prepared in accordance ISO14001:2016.

The Quickway EMS provides a framework for a systematic approach to project environmental requirements that minimises environmental impacts and maximises environmental outcomes while continually improving the effectiveness of the EMS. The EMS has been integrated with Quality (ISO9001:2016) as well as Health and Safety (AS/NZS 4801:2001).

The Quickway EMS has been developed in house by environmentally trained staff and accredited through GlobalMark. The overall responsibility for the EMS lies with Quickway's Managing Directors.

Quickway has implemented management systems that are consistent with ISO 14001 and all work is carried out in accordance with applicable municipal, provincial and state acts and regulations. The system is also reviewed through notification of changes in legislation through Quickway's subscription to Workplace Safety Australia and other subscriptions as detailed in the WHS-PRO-06 Compliance Obligations Procedure.

## 2.2 CEMP Role

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

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

- The environmental performance outcomes will be achieved.
- The mitigation measures identified will be implemented.
- The relevant terms of the approval will be complied with.
- Issues requiring management during construction will be managed.

This CEMP includes the following issue-specific environmental sub plans:

- Construction Noise and Vibration Management Sub Plan
- Construction Soil and Water Management Sub Plan
- Waste and Spoil Management Sub Plan

The requirement to prepare management plans for the following environmental aspects is specifically excluded from Quickway's Scope, and as such these will be addressed as chapters within this CEMP:

- Groundwater,
- Aboriginal Heritage
- Non-Aboriginal Heritage
- Flora and Fauna
- Air Quality
- Visual Amenity
- Bushfire (Eastern Creek only)
- Traffic (Eastern Creek only)
- Property and Utilities (the Bays only)

An Overarching Traffic Management Plan and Construction Parking and Access Strategy will also be prepared outside the framework of the CEMP for managing traffic, access and parking impact for The Bays.

Figure 1 provides a diagrammatic overview of the management plan structure.

*Input - Project Requirements:*

**Environmental Approval Documents**:
- EIS
- REMMs
- MCoA
- REF

**Contract**

**CEMF**

**Sydney Metro** Standards & Procedures

*Output - Management Documents:*

| Traffic | Community | Sustainability | Environment |
|---|---|---|---|
| **Overarching Traffic Management Plan** | **Community Consultation Strategy** | **Sustainability Strategy** | **CEMP:**<br>▪ Heritage<br>– Unexpected Finds Procedure<br>▪ Waste and Spoil<br>▪ Visual Amenity<br>▪ Air Quality<br>▪ Flora and Fauna<br>– Pre-clearing procedure<br>▪ Bushfire (EC only)<br>▪ Traffic (EC only) |
| **Construction Parking Access Strategy** | | | **Soil and Water Management Plan**:<br>▪ Unexpected Finds Procedures<br>▪ Dewatering Permit |
| | | | **Noise and Vibration Management Plan**:<br>▪ Land Use Survey<br>▪ Out of Hours Protocol<br>▪ Noise and Vibration Monitoring Program |

Figure 1 Environmental management plan structure

# 3. Purpose and objectives

## 3.1 Purpose

This Construction Environmental Management Plan (CEMP) and Sub-Plans have been prepared in accordance with the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004) and is consistent with the requirements of AS/NZS ISO 14001 – Environmental Management Systems. This plan outlines how Quickway will comply with the applicable NSW Minister for Planning's Conditions of Approval (MCoA), SM approval conditions for the REF (REF-MCoA), and the Sydney Metro Construction Environmental Management Framework (CEMF) as allocated to the Project within the Sydney Metro West Phasing Report, Rev 1.0 (27 April 2021) based on the scope of works and environmental risk during construction of the Project. It also outlines how Quickway will minimise environmental risks and achieve environmental outcomes on the project by creating a well-defined approach to the implementation of EIS Revised Environmental Management Measures (REMM) and REF Management and Mitigation Measures (MMMs).

The CEMP has been prepared in accordance with the following documents and as allocated by the Phasing Report, collectively referred to as the 'Project requirements' herein:

- The EIS approval including the MCoA and REMMs
- The REF approval including REF-MCoA and MMMs
- The obligations allocated under the CEMF

The Phasing report (Table 4) provides a risk assessment based on the scope of the works included in the power enabling works package, and using this assessment identifies which requirements from the Planning Approval (i.e. MCoA) the Amendment Report (captured as the REMMs) and the Sydney Metro CEMF should apply to The Bays scope of works. As such, the relevant identified requirements of this approval (known as the Allocations) and where they are met in this CEMP are shown in Table 1 and Table 2.

Table 1 MCoA requirements for CEMP – applicable to The Bays works package

| MCoA | Requirement | Reference |
|---|---|---|
| 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:<br>(a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;<br>(b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them;<br>(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;<br>(d) outline of the issues raised by the identified party(s) and how they have been addressed; and<br>(e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed. | Provided separately to DPIE |
| 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).<br>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 4.2 |
| A27 | Works must not commence until an Environmental Representative (ER) has been approved by the Secretary and engaged by the Proponent. | Section 6.2.1 |
| A31 | The Proponent must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition A27 (including preparation of the ER monthly report), as well as:<br>(a) the Complaints Register (to be provided on a weekly basis or as requested); and<br>(b) a copy of any assessment carried out by the Proponent of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work). | Section 6.2.1 |
| A32 | A suitably qualified and experienced Acoustics Advisor (AA), who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of works and for no less than six (6) months following completion of construction of the CSSI.<br>The details of the nominated AA must be submitted to the Secretary for approval no later than one (1) month before commencement of works. | Section 6.2.1 |

| MCoA | Requirement | Reference |
|---|---|---|
| A33 | Work must not commence until an AA has been nominated by the Proponent and approved by the Planning Secretary. | Section 6.2.1 |
| A34 | The Proponent must cooperate with the AA by:<br>(a) providing access to noise and vibration monitoring activities as they take place;<br>(b) providing access to the Complaints Register if requested;<br>(c) providing for review of noise and vibration documents required to be prepared under the conditions of this approval; and<br>(d) considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted. | Section 6.2.1 |
| 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.<br>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. | Section 6.7.2.3 |
| A44 | Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix A. | Section 6.7.2.3 |
| A48 | Signage and hoardings surrounding construction ancillary facilities must include the CSSI name and application number. | Section 7.8 4.2 |
| 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 3.1<br>Section 5.3 |
| 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 5.3 |
| 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 5.3 |
| 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 5.3 |

<table>
<tr><th>MCoA</th><th>Requirement</th><th>Reference</th></tr>
<tr><td>C5</td><td>Of the CEMP Sub-plans required under Condition C1 of this schedule, the following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation must be included in the relevant CEMP Sub-plan, including copies of all correspondence from those government agencies as required by Condition A6 of this schedule. Where a government agency (ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why:
<table>
<tr><th></th><th>Required CEMP Sub-plan</th><th>Relevant government agencies to be consulted for each CEMP Sub-plan</th><th>Applicability to the Project</th></tr>
<tr><td>a)</td><td>Noise and Vibration</td><td>SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)</td><td>Applicable as per phasing report prepared under MCoA A10</td></tr>
<tr><td>b)</td><td>Flora and Fauna</td><td>DPIE EES, DPI Fisheries, SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)</td><td>Not applicable as per phasing report prepared under MCoA A10</td></tr>
<tr><td>c)</td><td>Soil and Water</td><td>DPIE EES, Relevant Council(s), SOPA (in respect of Sydney Olympic Park) and Sydney Water (if Sydney Water’s assets are affected)</td><td>Applicable as per phasing report prepared under MCoA A10</td></tr>
<tr><td>d)</td><td>Heritage (Non-Aboriginal and Aboriginal)</td><td>Heritage NSW, SOPA (in respect of Sydney Olympic Park), Place Management NSW (in respect of The Bays) and Relevant Council(s)</td><td>Not applicable as per phasing report prepared under MCoA A10</td></tr>
<tr><td>e)</td><td>Spoil</td><td>Relevant Council(s) and SOPA (in respect of Sydney Olympic Park)</td><td>Not applicable as per phasing report prepared under MCoA A10</td></tr>
</table></td><td>Section 7</td></tr>
<tr><td>C6</td><td>The CEMP Sub-plans must state how:<br>(a) the environmental performance outcomes identified in the documents listed in Condition A1 of this schedule will be achieved;<br>(b) the mitigation measures identified in the documents listed in Condition A1 of this schedule will be implemented;<br>(c) the relevant conditions of this approval will be complied with; and<br>(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.</td><td>SWMP<br>CNVMP<br>WSMP</td></tr>
</table>

| MCoA | Requirement | Reference |
|---|---|---|
| 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 5.3 |
| 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 5.3 |
| 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 5.3 |
| 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 5.3 |

Table 2 CEMF Requirements – applicable to The Bays works package and Eastern Creek works package

| CEMF Ref. | Requirement | Reference |
|---|---|---|
| 3.4 a) | Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their scope of works. The CEMP shall comprise of a main CEMP document, issue specific sub plans, activity specific procedures and site based control maps. The CEMP shall illustrate the relationship between other plans required by the contract, in particular those that relate to design management. | This Plan<br>Section 2.2 |
| b) | 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. | Note |
| c) | The CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework. | Section 2 |
| d) | As a minimum the CEMP will: | - |
| i. | Include a contract specific environmental policy; | 7.10 |
| ii. | Include a description of activities to be undertaken during construction | Section 4 |
| iii. | For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed; | WSMP<br>CNVMP<br>SWMP |
| iv. | For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these; | WSMP<br>CNVMP<br>SWMP |
| 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 6.2 |
| vi. | Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP | Section 6.2 |
| vii. | Identify communication requirements, including liaison with stakeholders and the community | Section 5.2<br>Section 6.6 |
| viii. | Include induction and training requirements and a summary of the Training Needs Analysis | Section 6.3 |

| CEMF Ref. | Requirement | Reference |
|---|---|---|
| ix. | Management strategies for environmental compliance and review of the performance of environmental controls | Section 6.8 |
| x. | Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking | Section 6.8 |
| xii. | Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; | Section 6.7 |
| xiii. | Include procedures for the control of environmental records. | Section 6.9 |
| e) | The CEMP and associated sub-plans will be reviewed by Sydney Metro and/or an independent environmental representative (see Section 3.12) prior to any construction works commencing. Depending on the Conditions of Approval, the CEMP and certain sub-plans may also require the approval of the Department of Planning, Industry and Environment (DPIE). | Section 5 |
| f) | Where a corresponding systems document exists within the Sydney Metro Integrated Management System, the Principal Contractor's procedures will be required to be consistent with any requirements in those documents. | Note |
| 3.5 a) | 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:<br>• Spoil Management<br>• Noise and Vibration Management<br>• Soil and Water Management<br>• Waste Management | WSMP<br>CNVMP<br>SWMP |
| 3.13 a) | 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 | Section 6.2 |
| 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 6.2 |
| iii. | Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work; | Section 6.2 |
| iv. | Provide an overview of the role and responsibilities of the Independent Environmental Representative and other regulatory stakeholders | Section 6.2 |

## 3.2 Objectives

As a means of assessing environmental performance during construction of the Project, environmental objectives and targets have been established under the Sydney CEMF. These objectives and targets have been developed with consideration of key performance outcomes for each key issue, as specified in the Project requirements.

Environmental objectives for the Project are incorporated into relevant environmental management sub-plans and a summary is provided in Table 4 below.

The Project's environmental management commitments are:

- 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 workforce legacy which benefits individuals, communities, the project and industry, as is achieved through collaboration and partnerships.

## 3.3 Targets

The following targets have been established for the management of impacts resulting from construction:

- Establish adequate and appropriate controls as detailed in this Plan to demonstrate compliance with the relevant legislative requirements, MCoA, REMMMs, MMM and REF-CoA
- Monitor implementation of controls in accordance with this Plan to assess compliance, detect control weaknesses and identify continual improvement opportunities.

## 3.4 Hold Points

The relevant hold points applied to the Project as identified in the CEMF are included below:

Table 3 Hold Points

| Hold Point | Release of Hold Point | By Whom | Where addressed |
|---|---|---|---|
| Prior to Vegetation Clearing/ Ground Disturbance | Pre-clearing inspection (The Bays only)<br>Erosion and sediment control plan | Qualified Ecologist<br>Quickway Environment Manager or delegate | Section 7.1 |
| Discharge of water | Water tested to verify compliance and approval to discharge | Quickway Environment Manager or delegate | Section 7.9.4 |
| Use of local roads by heavy vehicles | Road Dilapidation Report (The Bays only) | Appropriate Professional nominated by Principal Contractor | Overarching Construction Traffic Management Plan |

| Hold Point | Release of Hold Point | By Whom | Where addressed |
|---|---|---|---|
| Out of hours works | Noise assessment | Quickway Environment Manager | Construction Noise and Vibration Management Plan |
| Construction identified as affecting buildings | Building condition survey (The Bays only) | Appropriate Professional nominated by Sydney Metro | Section 7.12 |

Table 4 Environmental objectives

| Management Area | Objective | Where addressed |
|---|---|---|
| **Community** | • Communicate the rationale, concept and timing for Sydney Metro West and the broader network benefits it would deliver, including how it fits into the NSW Government's plans to increase Sydney's rail capacity and integrated transport and strategic land use plans<br>• Build community and key stakeholder relationships and maintain goodwill<br>• Encourage participation and obtain government, community and stakeholder input for consideration in development of Sydney Metro West and its future implementation<br>• Provide information about the planning approval process and encourage community participation<br>• Clearly communicate the corridor protection and property acquisition process<br>• Understand community and stakeholder priorities and concerns so they can be considered in the ongoing refinement and delivery of Sydney Metro West<br>• Minimise the potential impact of the project to businesses affected by construction works;<br>• Ensure businesses are kept informed of the project and consulted in advance of major works or factors that are likely to have a direct impact;<br>• Consult with all business directly affected by changes to access arrangements regarding specific requirements at least two weeks prior to those changes coming into effect; and<br>• Ensure that business stakeholder enquiries and complaints regarding the project are managed and resolved effectively. | Community Consultation Strategy (CCS) |
| **Spoil Management** | • Minimise spoil generation where possible<br>• The project will mandate 100% reuse or recycling (on or off-site) of usable spoil;<br>• Spoil will be managed with consideration to minimising adverse traffic and transport related issues;<br>• Spoil will be managed to avoid contamination of land or water;<br>• Spoil will be managed with consideration of the impacts on residents and other sensitive receivers;<br>• Site contamination will be effectively managed to limit the potential risk to human health and the environment. | WSMP<br>(Appendix F) |
| **Groundwater** | Reduce the potential for drawdown of surrounding groundwater resources;<br>• Prevent the pollution of groundwater through appropriate controls; and<br>• Reduce the potential impacts of groundwater dependent ecosystems. | SWMP<br>(Appendix H) |

| Management Area | Objective | Where addressed |
|---|---|---|
| **Noise and Vibration** | • Minimise unreasonable noise and vibration impacts on residents and businesses;<br>• Avoid structural damage to buildings or heritage items as a result of construction vibration;<br>• Undertake active community consultation<br>• Maintain positive, cooperative relationships with schools, childcare centres, local residents and building owners.<br>• Noise and vibration monitoring would be undertaken for construction as specified in the CNVS. | CNVMP<br>(Appendix I) |
| **Heritage Management Objectives** | Minimise impacts on items or places of heritage value;<br>• Avoid accidental impacts on heritage items; and<br>• Maximise worker's awareness of indigenous and non-indigenous heritage. | CEMP<br>Heritage Unexpected Finds Procedure<br>(Appendix G) |
| **Weed Management** | • Implement Weed management measures focusing on early identification of invasive weeds and effective management controls | CEMP<br>Weed Management Procedure<br>(Appendix E) |
| **Soil and Water Management** | • Minimise pollution of surface water through appropriate erosion and sediment control;<br>• Minimise leaks and spills from construction activities;<br>• Maintain existing water quality of surrounding surface watercourses; and<br>• Source construction water from non-potable sources, where feasible and reasonable. | SWMP<br>(Appendix H) |
| **Air Quality** | • Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and<br>• Identify and control potential dust and air pollutant sources. | CEMP |
| **Waste Management** | • Minimise waste throughout the project life-cycle; and<br>• Waste management strategies will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows:<br>- Avoidance of unnecessary resource consumption;<br>- Resource recovery (including reuse, reprocessing, recycling and energy recovery); and<br>- Disposal. | Waste and Spoil Management Plan<br>(Appendix F) |

| Management Area | Objective | Where addressed |
|---|---|---|
| **Traffic and Transport** | **Transport Network**<br>• Minimise disruption to pedestrians, cyclists and motorists;<br>• Ensure Sydney Metro construction traffic accesses the arterial network as soon as practicable on route to, and immediately after leaving, the construction site;<br>• Keep Sydney moving;<br>• Minimise impacts on route bus operations, routes and stops, where possible;<br>• Minimise changes to traffic operation and kerbside access;<br>• Minimise construction traffic generation during network peak;<br>• periods (maximum peak period construction vehicle volumes should not exceed those outlined in the EIS);<br>• Maintain access to properties and businesses where possible, or arrange alternative;<br>• Maintain a safe environment for pedestrians and cyclists | Overarching Construction Traffic Management Plan (The Bays)<br><br>CEMP (Eastern Creek) |
| | **Safety**<br>• No worker injury accidents during construction;<br>• No injury accidents to members of the public because of construction. | |
| | **Cumulative**<br>• Work collaboratively with other stakeholders and other major projects to mitigate traffic and transport impacts | |
| | **Amenity**<br>• Minimise noise and other environmental impacts on the residents and businesses in the vicinity of the construction sites, in line with the Construction Noise and Vibration Standard (CNVS) | |

# 4. Project Description

## 4.1 Power Enabling Works

This section provides an overview of the Project as referred to in the MCoA and as stated in the EIS (Chapter 9) and the REF (Chapter 1.2).

The Project is located across two areas in the Greater Sydney Region:

- The Bays: Begins at the Manning St Substation in Rozelle, and extends for approximately two kilometres, ending at Robert St adjacent to White Bay (Figure 2).
- The Eastern Creek Pre-Cast Yards located along Lenore Drive and extends for less than 200 metres along this road (4).

Quickway will be undertaking the following activities to perform the works across the two sites:

The Bays, Rozelle - Tunnel Boring Machine power supply:

- Mobilisation, site set-up
- Service locating, potholing, investigations
- Traffic control, pedestrian management
- HDD bore underneath Victoria Road
- Case bore underneath Sydney Water culvert on Robert St.
- Remove decommissioned Ausgrid 132kV cable
- Trench excavation, conduit installation, backfilling, temporary restorations
- Joint-bay construction and installation
- Supply and install padmounted high voltage customer kiosks (HVCs)
- Cable installation, jointing, testing works
- Permanent restorations and handover
- Updated design will extend the trench on Robert Street to add an additional joint bay (Figure 3)
- Extension includes approximately 170m of trenching and attaching conduits to an existing bridge on Port access Road using a unistrut.

Eastern Creek - Pre-cast Facility power supply:

- Mobilisation, site set-up
- Site clearance and levelling
- Trench excavation, conduit installation, backfilling
- Supply and install padmounted high voltage customer kiosk (HVC)
- Cable installation, jointing and commissioning
- Restorations, demobilisation and handover

A description of construction activities at each location is provided in Table 5 below. Detailed description of impacts of the proposed works are included within these documents, or Sub-Plans as described in Figure 1.

Table 5 Description of construction activities at Eastern Creek and The Bays

| Works category | Description of activities |
|---|---|
| **The Bays** | |
| Mobilisation, site set-up | • Site compound setup for site offices, amenities and material storage<br>• Site compound setup for materials, spoil and waste management and handling – segregation of waste management bays<br>• Environmental controls setup – chemical storage container, sediment controls<br>• Site security measures<br>• Delivers of permanent material – i.e. conduits, cover strip, spacers<br>• Progressive removal of spoil material and importing of quarry materials. |
| Service locating, potholing, investigations , site preparation works | • Existing service locating and space / design proving of the alignment in pinch point locations<br>• Locating of “challenging” excavation spots – i.e large/ major utility crossings<br>• Waste material sampling and classifications<br>• Open excavations rock hammering for rock strength and level testing<br>• Survey works<br>• Tree branch trimming and removal where required. Tree protection where required. |
| Traffic control, pedestrian/ cyclists management | • Traffic management – partial, full road closures, detours<br>• Parking removal<br>• Pedestrians and cyclists management<br>• Concurrent trenching crews operating at once.<br>• Out of hours work required on state, regional roads due to traffic flows and road occupancy licences. |
| Trench excavation, conduit installation, backfilling , temporary restorations – approximately 1.7km | • Trenching installations will works will consist of open excavations, conduit installation, backfilling and temporary restorations and will progressively move along the trench alignment.<br>• Trench depths ranging from 1000mm to approximately 3200mm and widths ranging from 725mm out to 2800mm wide in some areas.<br>• All of the trenching works occurs within the road carriageway or road shoulder lanes.<br>• Open excavations when deeper than 1500mm or in poor ground conditions trenches will be shored with either vertishores or shoring boxes.<br>• Excavation will occur to separate via material layer type – i.e. truck will be loaded with road surface material (concrete/ asphalt / roadbase) then tipped. Then loaded with any GSW material in trench (if found). Clean material, and rock will be loaded into truck separately to ensure maximisation suitable material for re-use.<br>• Majority excavations will likely encounter sandstone rock, at least in the base, referring to project geotechnical logs. This will required rock hammering methods. |

| Works category | Description of activities |
|---|---|
| | • Once excavation has achieved the required depth, conduits with spacers every 2 metre centres will be installed and jointed with PVC glues. These conduits will be secured to prevent floatation during wet mix TSB backfill.<br>• Wet mix thermally stable backfill (TSB) is installed around the conduits as the pipe embedment material. This TBS is poured from a concrete agitator truck into the trench. The assistance of excavator bucket for pouring of TSB may be required in some tight work areas. The wet mix TSB is worked around the conduits to ensure no voids. The wet mix TSB then need to 'set' before backfill and compacting to prevent damage to installed conduits.<br>• Polymeric (HDPE) cable cover strips are laid on-top of the TSB pipe embedment.<br>• Native backfill material will be placed, compacted and vibrated in approximately 150mm layers above the cover strip with a 2ton trench pad-foot roller. This process will be repeated for multiple layers until the underside of road subgrade is met (approximately 350mm below road surface level). Compacting testing will occur progressively during backfilling and layers.<br>• Compaction sand or stabilised sand would be placed for backfill immediately around existing utilities crossed. Stabilised sand may required water conditioning during placement, however does not required vibration compaction from 2ton trench roller, instead isolated handheld jumping jack leveling.<br>• Soft electrical warning marker tape is rolled out and installed on the top of the trench backfill and below the road subgrade level.<br>• Imported DGB-20 roadbase material will make up the 300mm thick subgrade level below the road surface. Roadbase will be placed in 150mm layers, compacted and rolled with a 2ton smooth drum roller or wacker plate. Compacting testing will occur progressively during backfilling and layers.<br>• Temporary road and footpath restorations will be made with the placement of approximately 50-75mm of AC10 or AC14 hotmix. Hotmix will be placed from excavator bucket, spread and rolled with 2ton smooth drum roller.<br>• Any open excavations at the end of each shift withing trafficable lanes to be re-opened will be road plated, pinned in accordance with TfNSW M209 temporary restorations specification, which includes pins and hotmix transition ramps on all sides.<br>• Any open excavations within the secured site road plated and covered between shifts to ensure public safety of any unauthorised entry in the site.<br>• Trenching works will progress approximately 6-18 metres per dayshift, and approximately 4-12 metres per nightshift pending ground conditions. |
| HDD bore underneath Victoria Rd & Darling St intersection – dual 130m HDD bores | • Road surface monitoring targets are placed prior to bore with baseline measurements required.<br>• Survey setout of bore. Utility investigation to validate locations and depths before trenchless drilling.<br>• Excavation of entry pit and exit pits. Individual pits are approximately 3000mm long, 1200mm wide and 1500mm deep. Due to parallel bores combing these pits may be possible to aid traffic management arrangements.<br>• 'Pilot bore' drilled from the entry pit along alignment and is tracked from road surface level to ensure drill as per design alignment and depth. Pilot drill exits at exit pit.<br>• "Reamers" are placed onto drilling rods, pulled back concentrically cutting and increasing the bore diameter of the bore profile. Increasing reamer sizes are progressively installed until the design diameter is achieved. Prior to pipe installation works the bore profile is "cleaned" with various passes of the design diameter reamer. |

| Works category | Description of activities |
|---|---|
| | • Concurrently to HDD boring works, high density polyethylene (HDPE) pipes we plastic butt welded together and internally debeaded. HDPE pipes are welded into a string to match the length of the HDD bore.<br>• Pipe will be dragged from its welding location along the road. It is then connected to the drilling roads before being pulled into the bore hole<br>• Drilling fluid is pumped through the drill rods during the HDD bore to displace bore cuttings and to hydrostatic support bore annulus when being pumped, flow controlled and levels monitored. Drilling fluid is removed from entry and exit pits with a vacuum truck.<br>• The vacuum truck will either tip the drilling fluid into a sealed liquid waste hook skin bin or bring directly to liquid waste tip. Drilling fluid is disposed offsite at licenced waste facility.<br>• Once pipe is installed, grout will be installed via gravity pour at the entry and exit pits and pumping through a tremie line installed.<br>• During the HDD bore, and for a set schedule after competition, road monitoring targets are monitored to ensure no road surface movement |
| Case bore underneath Sydney Water culvert on Robert St – dual 12m long case bores | • Excavate, shore of launch shaft approximately 11m long, 5m wide, and 4.5m deep, and exit shaft approximately 4m long, 5m wide, and 4.5m deep.<br>• Concrete/ secure drilling frame into launch shaft. Load auger bores and steel casings as the bore progresses<br>• Remove case boring machine once steel casing installed and augers retracted. Installed pre-staged carrier conduit pipes and spacers. |
| Remove decommissioned Ausgrid 132kV cable | • Quickway scope will excavate down to cover strip/ tiles on decommissioned 132kV cables<br>• Ausgrid will purge, cut and remove redundant cable and dispose |
| Joint-bay construction and installation | • Excavation, shore of joint bay shaft approximately 12m long, 4m wide, and 3-3.5m deep. Excavation will likely encounter rock, and require rock hammering, road sawing and rock grinding.<br>• Roadbase layer placed in based level and compacted.<br>• Mobile crane lift pre-cast segmented joint bay into excavation. Each piece will be added and jointed together.<br>• Following, vertical earthing rods will be drilled into the ground and connection to earthing bars of joint bay.<br>• Temporary backfill and restorations |
| Cable installation, jointing works | • Roping, and mandrelling (proving) of conduits.<br>• Re-opening of joint bay excavations. Cable winch pulling. Various open points along the alignment for cable pushing bays<br>• Cable jointing hut/ covers installed over joint bays for jointing works.<br>• Cable testing<br>• Joint bay backfill and restorations |
| Supply and install padmounted high voltage customer kiosks (HVCs) | • Construction of reinforced concrete footing with exiting conduits<br>• Cranage, installation securing of HVCs.<br>• Cable terminations into HVCs, testing and commissioning works |
| Permanent restorations and handover | • Return once all conduit installation works and cable pulling, testing works are completed. Mill and re-sheet impacted lane with permanent road pavement material. |

| Works category | Description of activities |
|---|---|
| | • Restore any footpath materials to pre-existing materials -i.e. concrete or pavers where appropriate |
| Eastern Creek | |
| Mobilisation, site set-up | • Site compound setup for site offices, amenities, material storage and stockpile<br>• Environmental controls setup – chemical storage container, sediment controls<br>• Site security measures<br>• Delivers of permanent material – i.e. conduits, cover strip, spacers |
| Traffic management | • Traffic management – lane merge and closures only<br>• Pedestrians and cyclists management<br>• Out of hours work may be required to cumulative traffic management arrangement with adjoining pre-cast facility earthworks contractor(s). |
| Investigations | • Utility investigation and potholing works<br>• Soil waste sampling and classifications |
| Site clearance, tree removal, and levelling | • Removal of trees where classing with trench alignment on the northern side of project alignment<br>• Leveling of mound adjacent to property boundary |
| Trench excavation, conduit installation, backfilling, restorations – approx. 100m long | • Trenching installations will works will consist of open excavations, conduit installation, backfilling and restorations and will progressively move along the trench alignment. Trenching works will progress approximately 12-28 metres per dayshift. All of trenching works are withing footpath or nature strip areas.<br>• Trench is approximately 900mm deep and 500mm<br>• Once excavation has achieved the required depth, sand bedding placedm conduits will be installed and jointed with PVC glues.<br>• Sand pipe embedment material placed around conduits and spread.<br>• Polymeric (HDPE) cable cover strips are laid on-top of the sand material<br>• Native backfill material (clays) will be placed, compacted and vibrated in approximately 150mm layers above the cover strip with a handheld jumping jack.<br>• Soft electrical warning marker tape is rolled out and installed approximately 300m below existing ground level<br>• Any open excavations will be ATF fenced and covered with plywood sheets between shifts to ensure public safety of any unauthorised entry in the site. Footpaths will have footpath place installed |
| Supply and install padmounted high voltage customer kiosk (HVC) | • Leveling of site area for installation. Placement of sand/ roadbase layer and compact. Strip concrete footing may be required pending ground conditions.<br>• Hiab crane truck to lift kiosk with pre-cast concrete base to location |
| Cable installation, jointing and commissioning | • Cable pulling with winches. Cable jointing and terminations<br>• Cable testing and commissioning works |
| Restorations, demobilisation and handover | • Grass seeding of nature stirp areas<br>• Any permanent restorations to concrete footpaths |

The proposed construction program, weather and site conditions pending, is detailed in Table 6.

Table 6 Proposed Construction Duration

| Project Location | Commencement | Completion |
|---|---|---|
| **The Bays** | Early Works – May 2021<br>Main Construction Works – July 2021 | March 2021 |
| **Eastern Creek** | June 2021 | August 2021 |


Figure 2 Overview of the Bays Power Supply Route


Figure 3 Overview of updated design for Robert Street extension

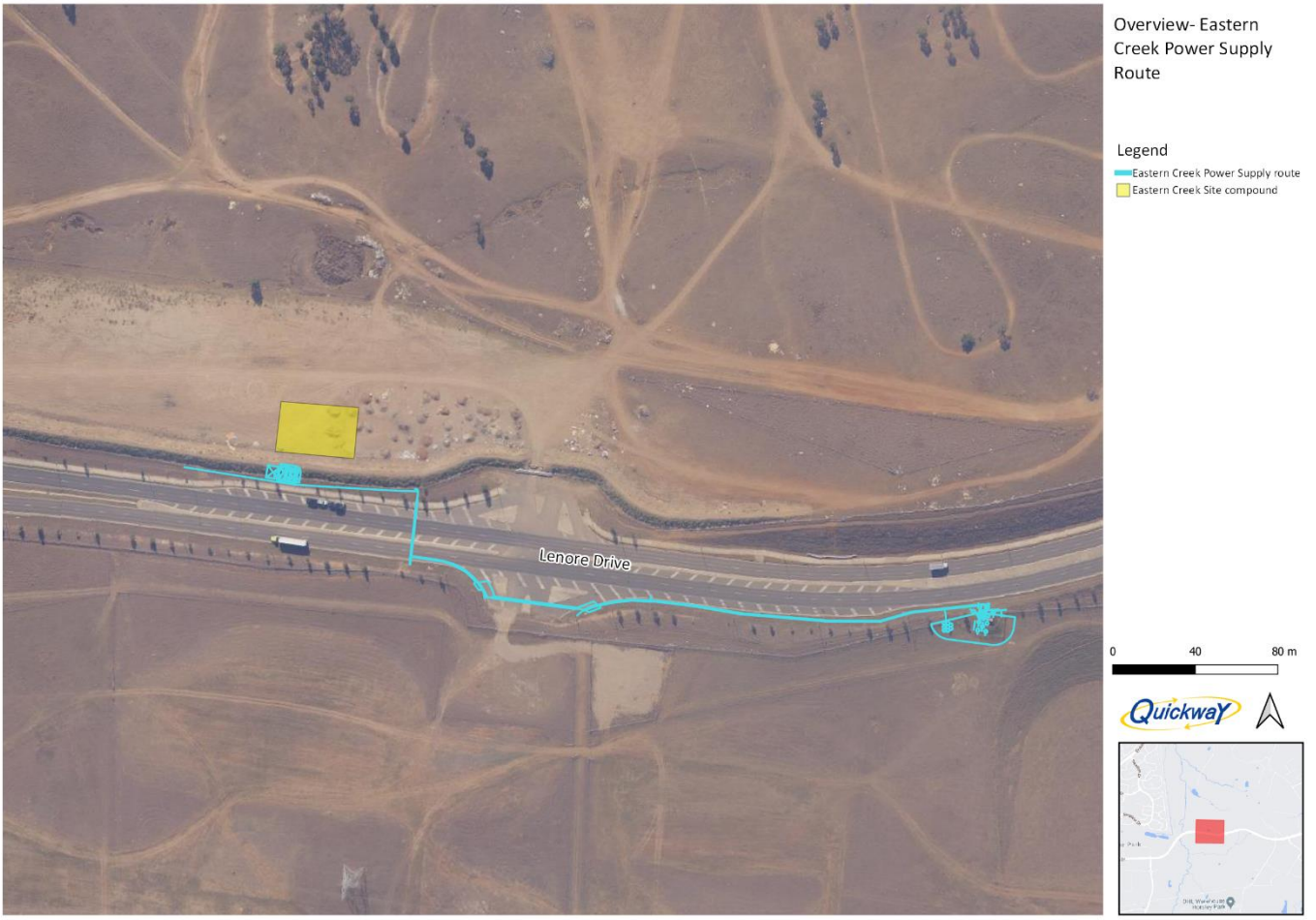



Figure 4 Overview of the Power Supply route at the Pre-Cast Yard at Eastern Creek

## 4.2 Ancillary facilities

Temporary construction ancillary facilities are needed to facilitate construction of the project at the following locations:

- **The Bays**
  - E1(a) (refer Figure 6)
  - E1(b) (refer to Figure 6)
  - The Graveyard (refer to Figure (refer to Figure 10)
- **Eastern Creek** (refer to 8)

In addition to these sites, Minor Ancillary Facility Area O1 (refer to Figure 7) has been approved for the Bays site and details surrounding this site are included in Appendix M. This site was established under the Minor Ancillary Facility approval pathway (MCoA A21) however upon CEMP approval will be operated and managed in accordance with the CEMP. Storage compound area L7 was used between November 2021 and February 2022, the storage area is to be decommissioned and handed back by 28th February 2022.

An additional storage area is required to facilitate works occurring on Robert Street, as there is no sufficient space in existing storage yards E1a & E1b for temporary storage of materials. An area has been made available to Quickway within Ports Authority NSW (PANSW) land and has been approved for

use by PANSW. This area is referred to as The Graveyard. The Graveyard storage area would need to be accessed during out of normal works hours as works on Robert Street must be conducted during OOH due to ROL approvals. Quickway have conducted a noise assessment in consultation with Project noise consultant to determine feasibility of using the yard during OOH, ongoing noise monitoring will be conducted to validate modelling and ensure compliance. Although the area is not identified as a storage area in the EIS, the area is located within the PANSW managed area adjacent to the current storage yards.

As part of approval sought from PANSW, an Environmental Checklist has been completed and approved determining the use of the site as “Low Risk” of environmental impacts. The area is hard stand (asphalt surface) and has no additional environmental risks beyond those already approved for use in this document.

The yard will be managed in accordance with all requirements outlined in the CEMP Sub-plans and ESCP, an indicative layout is included in Figure 8.

It is noted that the need for additional ancillary facilities may arise during the Project. Should this occur and a suitable location be identified, this will be assessed and approved in accordance with an appropriate pathway to be decided in consultation with Sydney Metro and the ER. Upon approval, the site(s) will be managed in accordance with this CEMP.

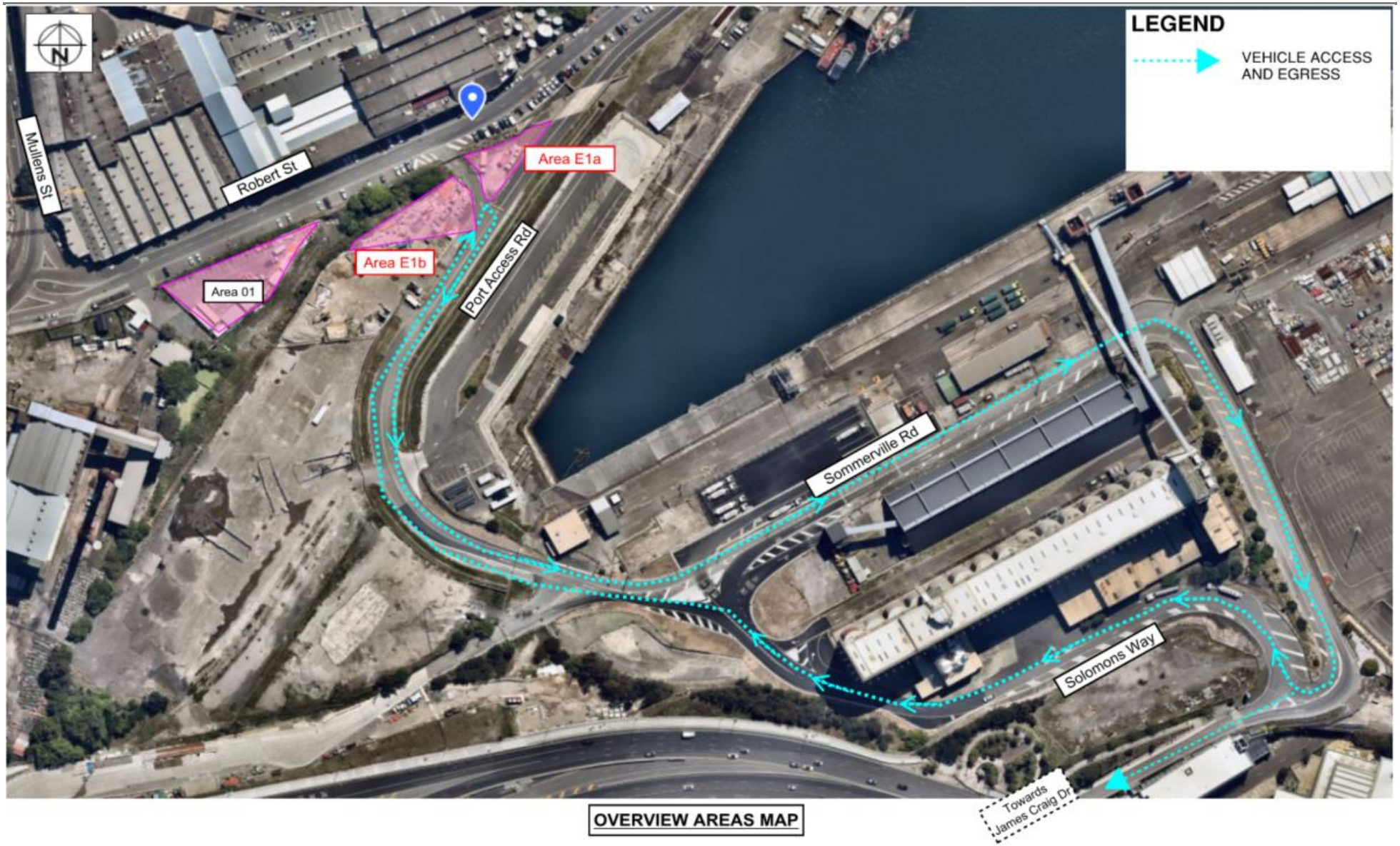



Figure 5 Access road to Area E1a & E1b

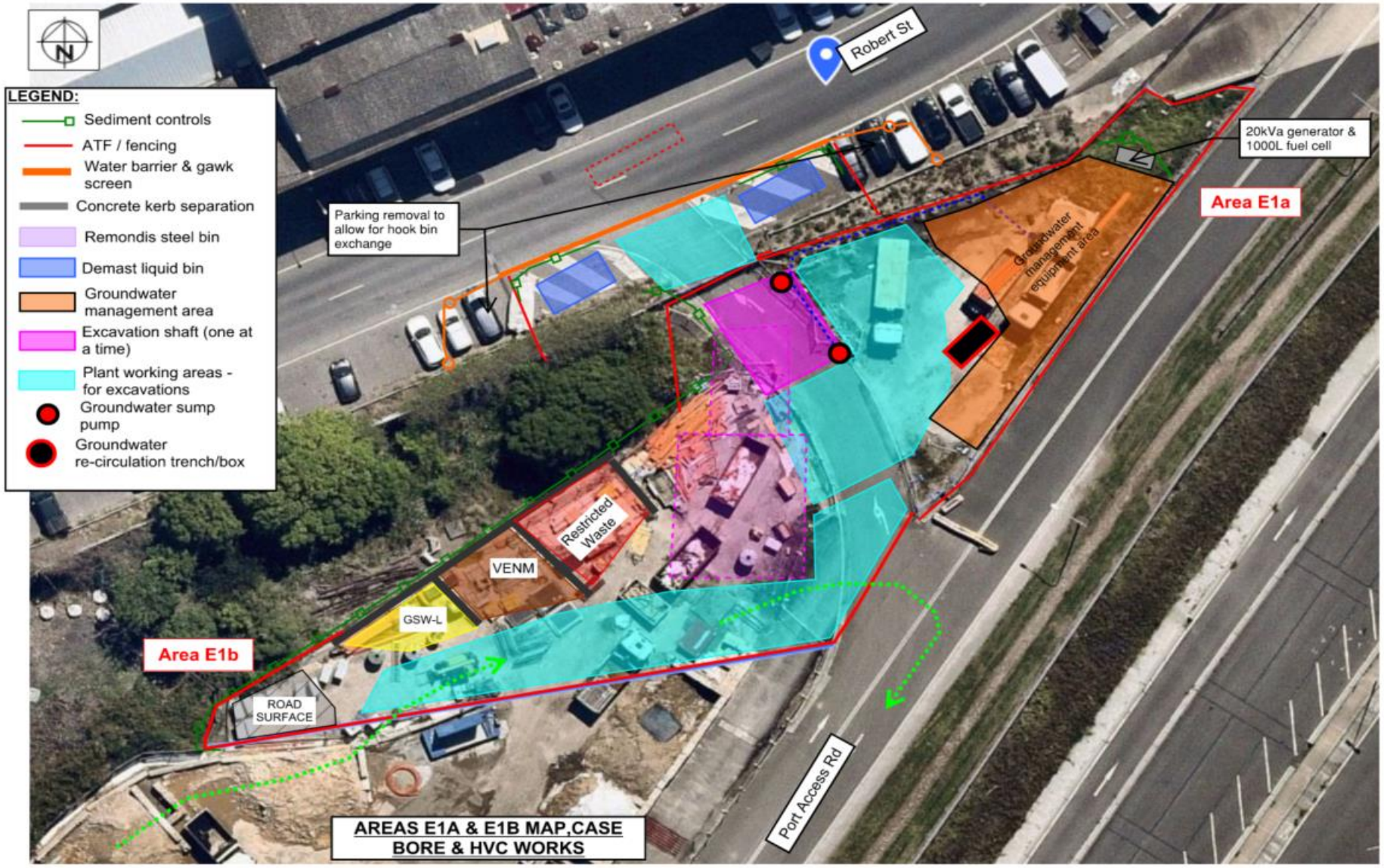



Figure 6 Indicative site layout for Ancillary Facility Sites E1a & E1b

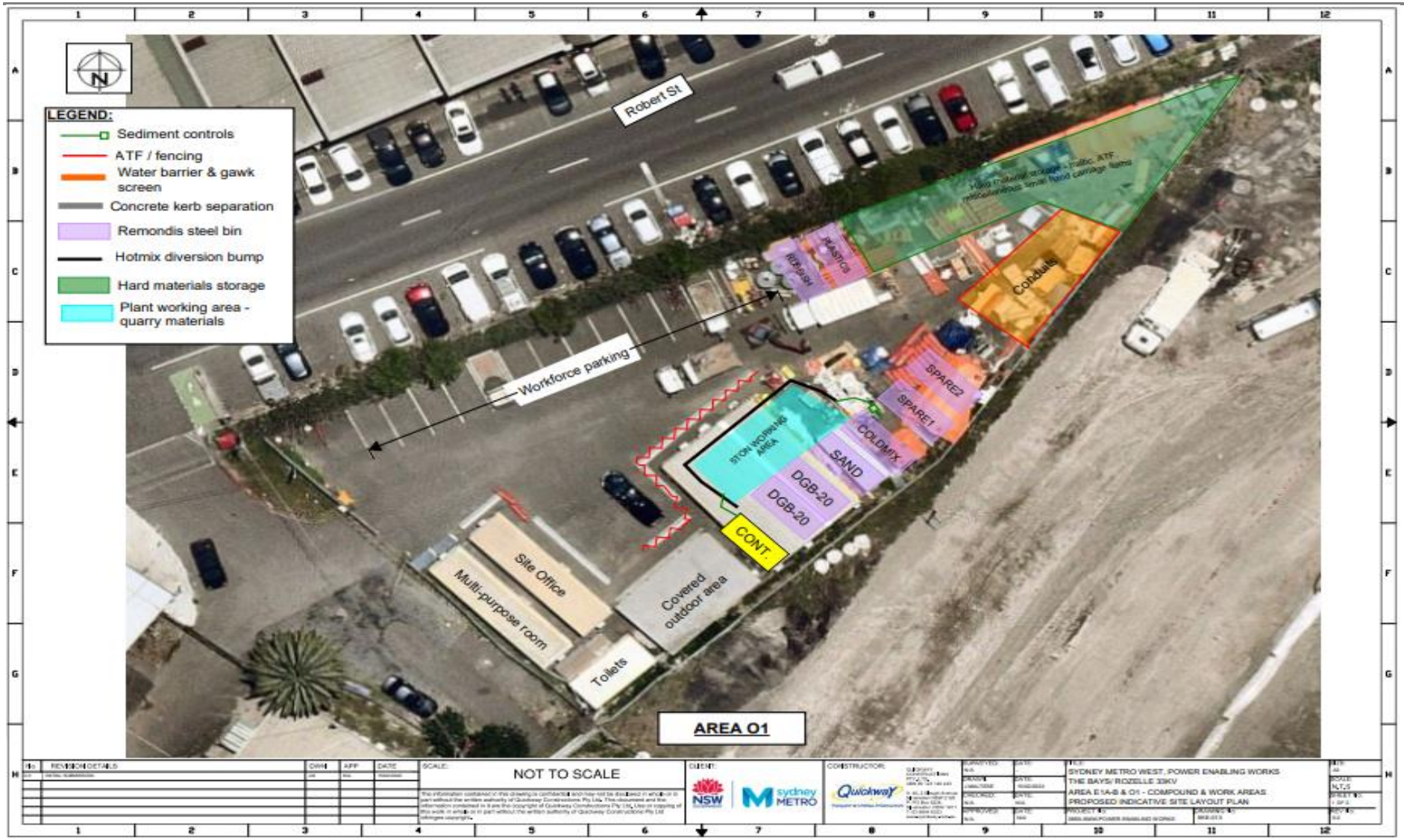



Figure 7 Indicative site layout for Area O1

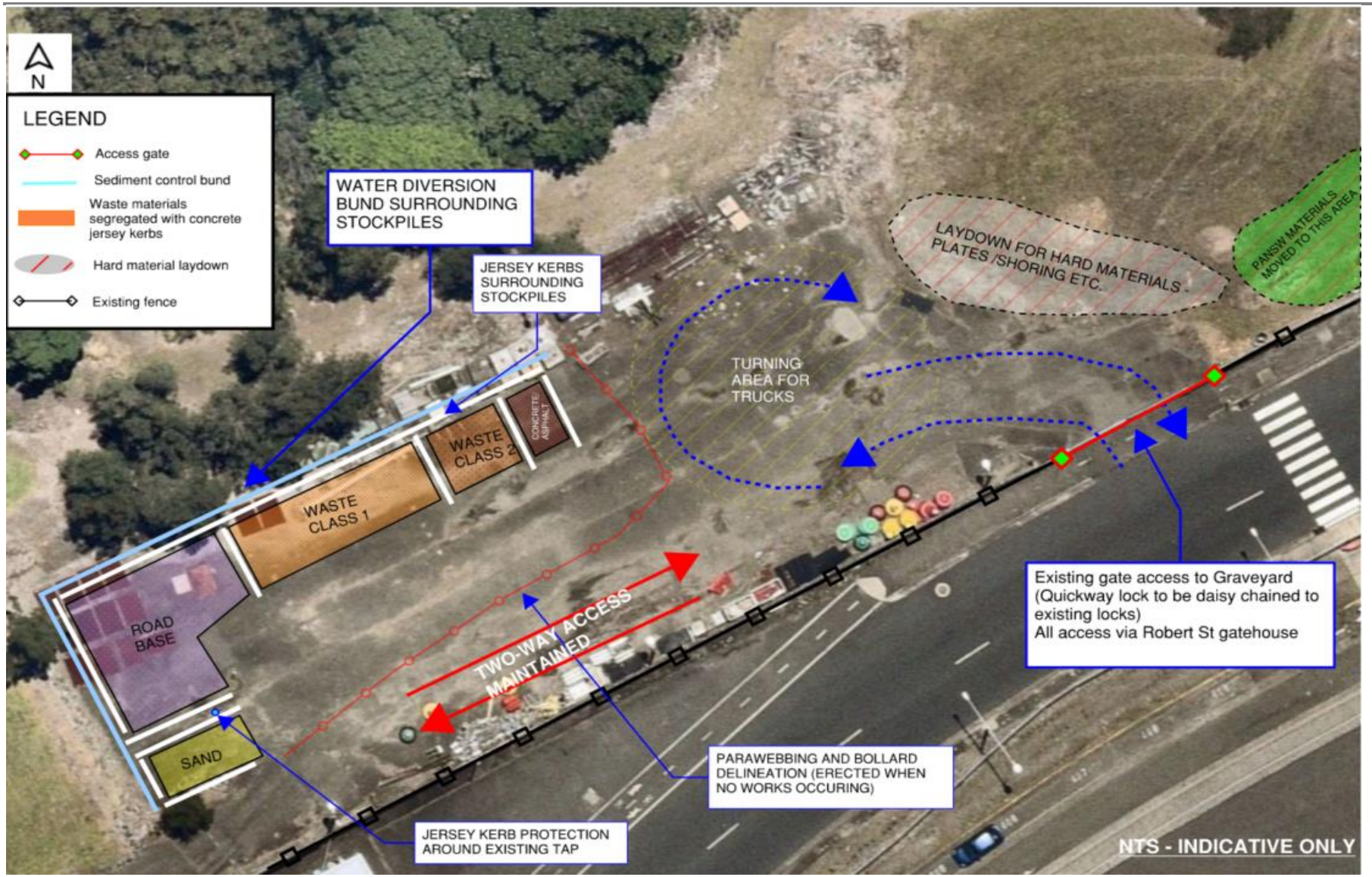



Figure 8 Indicative site layout for graveyard area


Figure 9 Indicative map of Quickway laydown areas within PANSW managed boundary

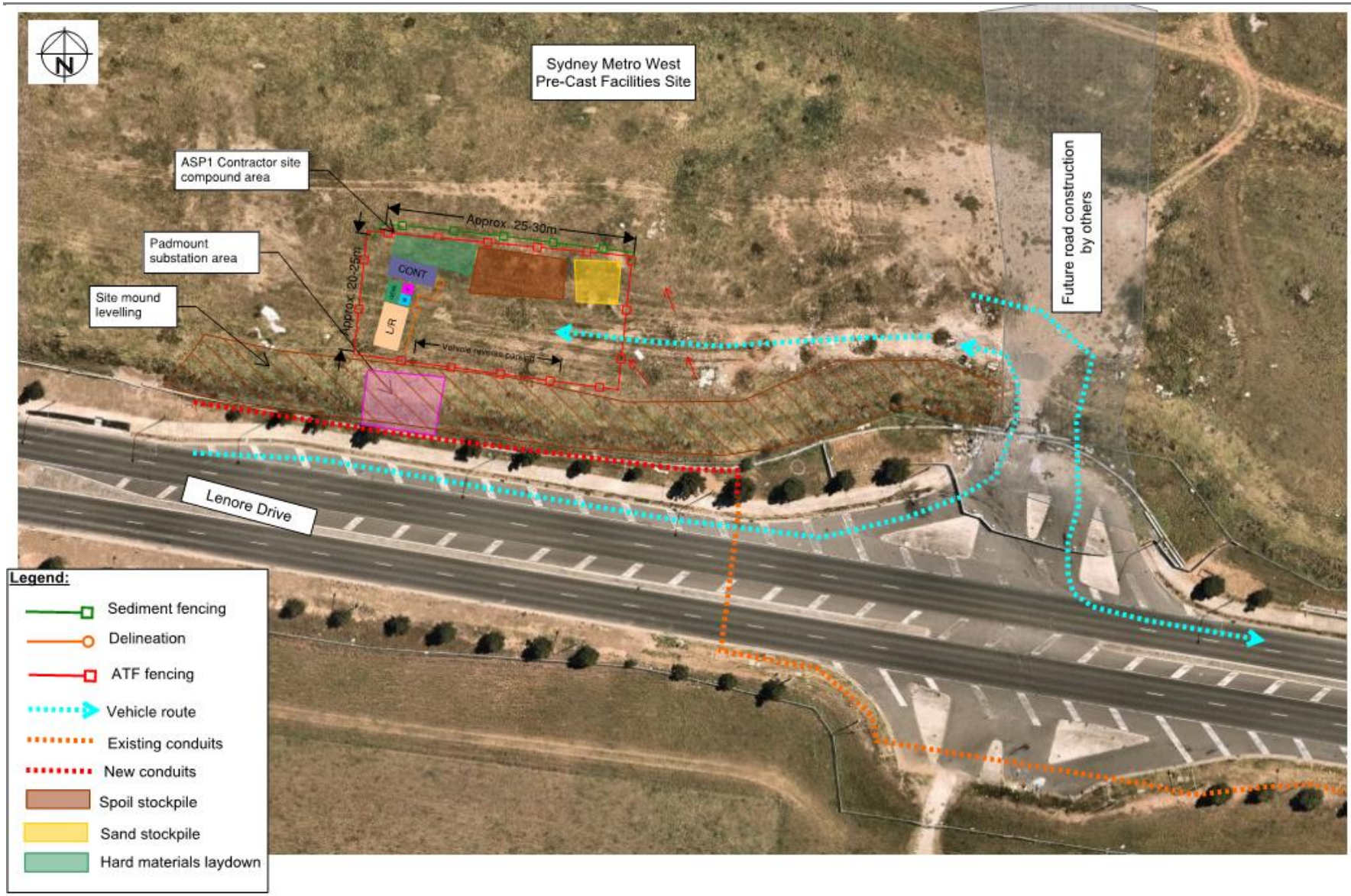



Figure 10 Indicative site layout for Ancillary Facility Site at Eastern Creek

Establishment, operation and demobilisation of these sites will be undertaken in accordance with this CEMP, and only upon approval of the CEMP, unless otherwise approved by the ER under the definition of Low Impact Work.

Site establishment will generally require the following activities:

- Site preparation:
  - Provision of site security such as ATF fencing panels and signage
- Survey and site investigation work including:
  - Ground penetrating radar or electromagnetic ground investigation
  - Contamination investigation
- Site establishment:
  - Installation of environmental controls
  - Installation of noise attenuation measures (as required)
  - Treatment of contaminated materials (if required)
  - Delineation of sensitive areas and installation of temporary fencing.
- Site access
  - Establishment of traffic management controls, including adjustments to road signage where required (showing changes to traffic movements and speed limits)
  - Construction of site access and the provision of property access including any required adjustments to pedestrian and cycle paths, as required
  - Installation of gates
- Site preparation
  - Removal of any remnant waste materials on site
  - Protection of existing services
  - Management of contamination
  - Vegetation and tree removal, clearing, chipping and mulching where required
  - Installation of new services, drainage and communications
- Site installation:
  - Installation of office block, and shipping containers for storage
  - Installation of fuel and chemical storage activities (as required)
  - Formalisation of onsite car parking
  - Formalisation of roads and external connections
  - Establishment and use of crane
  - Establishment of stockpile areas

An indicative list of plant and equipment required for site establishment and operation includes:

- Vacuum truck

- Excavator(s)
- Chainsaw, grinder, mulcher (where vegetation removal/tree trimming is required)
- Forklift / telehandler
- Elevated work platform
- Mobile crane or Franna (pick & carry crane)
- Light vehicles
- Heavy vehicles / trucks
- Roller
- Power generator
- Concrete saw
- Hand tools and equipment
- Water cart as required

Ancillary Facilities may be required to operate outside standard construction hours. Potential operating hours and relevant mitigation measures will be addressed in the Construction Noise and Vibration Management Plan (CNVMP). Refer to Section 6.5 for more information on Project working hours.

Potential traffic impacts will be documented as part of a Traffic Control Plan. This may include relocation of public parking, control measures or diversions for pedestrian or bike lanes, and control measures for adjacent roads during oversized deliveries.

The CSSI name, application number, telephone number, postal address and email address will be made visible on site boundary fencing / hoarding at each ancillary facility.

# 5. Review and Approval

## 5.1 Internal consultation

The development of the CEMP, Sub-plans, Procedures and Monitoring Programs involved detailed review of the documentation by the Quickway Environment Manager, Project Manager and Project Engineer(s)

Following Quickway satisfaction of the documents, a review process was completed with Sydney Metro, Environmental Representative (ER), Acoustic Advisor (AA) prior to submission of the document to the Department of Planning, Industry and Environment (DPIE).

## 5.2 External consultation

Prior to submission for approval, external consultation for the CEMP, Sub-plans, Procedures and Monitoring Programs was undertaken with relevant stakeholders, agencies, and other relevant regulatory authorities. The process for consultation, endorsement and subsequent approval is detailed in Table 7.

In all cases, Sydney Metro are required (as the Proponent) to review and be satisfied with the documents prior to submission for approval.

Evidence of external consultation will be provided in accordance with MCoA A6, as a separate document to DPIE.

Table 7 CEMP consultation and approval requirements as identified in the Project Phasing Report

| | | Stakeholder | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Document** | **MCoA** | **DPIE** | **DPI EES** | **Local Council(s)** | **Place Management NSW** | **ER** | **AA** | Sydney Water |
| **CEMP** | | | | | | | | |
| CEMP | C2<br>C4 | | | | | E | | |
| **CEMP Sub-plans** | | | | | | | | |
| Noise and Vibration Management Sub-plan (CNVMP) | C5<br>C7<br>C8 | A | | C | C | E | E | |
| Soil and Water Management Sub-plan (SWMP) | C5<br>C7<br>C8 | | C | C | | E | | C |

(A = Approval required, C = consultation required, E = endorsement required)

## 5.3 Approval

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

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

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

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

# 6. Environmental Management Plan

## 6.1 Planning

### 6.1.1 Environmental Risk Assessment Workshop

A risk assessment workshop has been completed to assist the identification of any additional mitigations, not already identified in the EIS (i.e. the REMMs) or required under the Project Approval. This workshop

involved management staff the Environment Team, Quickway construction personnel and Sydney Metro personnel, including the Sydney Metro Environmental Manager.

Each construction activity was assessed to identify associated environmental hazards, initial risk levels, mitigation measures and how to avoid, manage and/or minimise risks and residual risk. Outcomes of the risk assessment workshop have been included into this CEMP and sub plans as appropriate. Please refer to Appendix K for outcomes of the risk assessment workshop.

### 6.1.2 Regulatory requirements and compliance

#### 6.1.2.1 Legislation

A register of legal and other requirements for the Project, current at the time of CEMP preparation, are contained in the Legal Requirements Register (Appendix B).

Quickway will update the internal register following notification of changes in legislation through Quickway's subscription to Workplace Safety Australia and other subscriptions as detailed in Section 2.1. The register included in Appendix B of this document will be replaced with any applicable updates during management reviews.

Any changes made to the legal requirements register will be communicated to the wider Project team, including subcontractors where necessary through toolbox talks, specific training and other methods detailed in Section 6.3 of this CEMP.

#### 6.1.2.2 Approvals, permits and licences

Approvals, permits and licenses are required for the Project. All necessary licences, permits and approvals required for the development of the Project have and/or will be obtained and maintained as required throughout construction of the Project.

The MCoA and REF-MCoA do not remove the obligation for Quickway to obtain, renew or comply with such necessary licences, permits or approvals except as provided under Section 5.23 of the EP&A Act. The approvals and licences listed in Table 8 are required for the Project.

Table 8 Environmental approvals, permits and licences relevant to the delivery of the Project

| Approvals / Permit / Licence | Regulatory authority | Timing | Status of the approval/ permit/ licence |
|---|---|---|---|
| Instrument of Approval under the EP&A Act | DPE / Minister for Planning<br>Sydney Metro | Prior to commencement of works | EIS Approved 11/03/2021<br>REF Approved 11/03/2021 |
| Section 143 notice of POEO Act | EPA | Prior to transportation of waste to receiving facility | Ongoing |
| Road Occupancy Licences (RoLs) | TfNSW<br>Councils | Prior to commencement of traffic related works that require access to roads | Ongoing |

Note, an EPL is not required for the Project works as this does not trigger a Scheduled Activity under Schedule 1 of the Protection of the Environment Operations Act (1997).

### 6.1.3 Environmental Work Method Statement(s)

Environmental Work Method Statements (EWMS) will be prepared prior to the commencement of construction activities that have been identified in the Risk Workshop (refer to Section 6.1.1) as High Risk

following the implementation of control measures. They will incorporate relevant mitigation measures and controls, including those from relevant management Sub-plans and key procedures to be used concurrently with the EWMS.

EWMS are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.

EWMS will be prepared in consultation with the relevant site management personnel. All construction personnel and sub-contractors undertaking a task governed by an EWMS must participate in training on the EWMS, and acknowledge that they have read and understood their obligations by signing an attendance record prior to commencing work.

At the completion of the Risk Workshop, the following activity has been identified as High Risk and will be the subject of an activity specific EWMS:

- Horizontal Directional Drilling / Underboring

### 6.1.4 Environmental Control Maps

The Project traverses a range of environmental and socially sensitive areas/sites. To assist with construction planning and management, these site constraints are consolidated on a series of map-based sheets that extend the length of the Project. The Environmental Control Maps (ECMs) include information pertaining, but not limited to:

- Noise sensitive receivers (e.g. residential dwellings, hospitals, educational institutions)
- Aboriginal and non-Aboriginal heritage sites, including items, places, objects and conservation areas
- Local waterways
- Contamination, including potential or actual acid sulphate soil areas and contaminated sites

ECMs will be used in conjunction with EWMS to help identify key risk areas and to promote ongoing communication to construction personnel during the Project.

As ECMs are a working element of the CEMP, they will be regularly reviewed throughout construction to reflect true ground conditions and identify new environmentally sensitive areas. As part of the environmental induction, all staff and subcontractors working on site will be provided with an understanding of the risks associated with working in or near environmentally sensitive areas, and training on implementing the relevant environmental protection measures.

### 6.1.5 Erosion and Sediment Control Plans

Erosion and Sediment Control Plans (ESCPs) are planning documents that clearly show the site layout and the approximate location of erosion and sediment control structures onsite. They cover all construction stages from initial vegetation clearing through to rehabilitation when erosion and sediment control are no longer required and are removed. ESCP will be developed and implemented across the project where there is a risk of erosion and sediment loss.

ESCPs may be produced in conjunction with EWMS to provide more detailed site-specific environmental mitigation measures.

Activity based Erosion and Sediment Control Plans (ESCPs) will be developed and implemented for all active worksites in accordance with Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom, 2004) (known as the “Blue Book”). The ESCPs will be approved by Quickway’s Environmental Manager (or delegate) prior to any works commencing (including vegetation clearing) on a particular site. Copies of the approved ESCP will be held by the relevant personnel including the Engineer and the Site

Supervisor. Modifications and improvements may be undertaken where they are identified as part of routine informal and formal site inspections.

## 6.2 Resources, responsibility, and authority

### 6.2.1 External

**Environmental Representative (ER)**

A suitably qualified and experienced ER has been approved by the Secretary in accordance with MCoA A27 after having due regard to MCoA A28. The ER will fulfil the requirements of A30 and any other MCoA that require the ER's involvement.

**Acoustics Advisor (AA)**

A suitably qualified and experienced AA has been approved by the Secretary in accordance with MCoA A32 after having due regard to MCoA A32. The AA will fulfil the requirements of A36 and other MCoA that require the AA's involvement.

### 6.2.2 Sydney Metro

**Sydney Metro Environmental Manager**

The environmental responsibilities of the Sydney Metro Environmental Manager include (but are not limited to):

- Monitor the environmental performance of the Project in relation to Sydney Metro conditions.
- Review and consider minor Project refinements that are consistent with the Project environmental assessment in accordance with approval documentation.
- Provide guidance and where appropriate, monitor compliance with DPIE post approval document submission requirements.
- Evaluate and advise on compliance with Sydney Metro environmental requirements including undertaking periodic inspections of the Project sites to identify environmental non-conformances
- Review any environmental management plans for the Project or related activities.
- Provide the ER with all documentation requested by the ER in order them to perform their functions (as specified in MCoA A27) and a copy of any assessment of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work).
- Provide the AA with information as described under MCoA A34.
- Providing noise and vibration documents required to be prepared under the Project Approval to the AA and consider any recommendations from the AA to improve practices, or demonstrate to the satisfaction of the AA why such recommendations were not adopted.
- Respond to and undertake incident reporting in accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure (refer to Section 6.7.2).
- Provide incident and non-conformance notifications as required under the Planning Approval (refer to Section 6.7.2).

**Sydney Metro Community Liaison**

The environmental responsibilities of the Communications Manager include (but are not limited to):

- Ensure that all community consultation activities are carried out in accordance with approved plans and strategies.
- Report any environmental issues to the Environmental Manager raised by stakeholders or members of the community.
- Manage the communication of general Project progress, performance and issues to stakeholders including the community.
- Maintain the 24-hour complaints hotline.
- Provide the ER with the Complaints Register on a daily basis as requested by the ER.
- Provide the AA with information as described under MCoA A34.

### 6.2.3 Quickway

The internal roles with environmental responsibilities are detailed below, and summarised in Table 9 with:

- authority and roles of key personnel
- lines of responsibility and communication
- minimum skill level requirements
- interface with the overall project organisation structure

**Quickway Senior Project Manager**

The environmental responsibilities of the Senior Project Manager include but are not limited to:

- Ensure all works comply with relevant regulatory and Project requirements.
- Ensure the requirements of the CEMP are fully implemented, and in particular, that environmental requirements are not secondary to other construction requirements.
- Endorse and support the Project environmental policies.
- Liaise with TfNSW, Sydney Metro, the Environmental Representative and other government authorities as required.
- Participate and provide guidance in the regular review of this CEMP and supporting documentation.
- Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of the CEMP.
- Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements.
- Ensure that complaints are investigated to ensure effective resolution.
- Ensure a stop work procedure is implemented in the event of an unacceptable impact on the environment.

**Quickway Project Manager** The environmental responsibilities of the Construction Manager include but are not limited to:

- Plan construction works in a manner that avoids or minimises impact to environment.
- Ensure the requirements of the CEMP are fully implemented.

- Ensure construction personnel manage construction works in accordance with statutory, approval and proponent requirements.
- Ensure environmental management procedures and protection measures are implemented.
- Ensure all Project personnel attend an induction prior to commencing works.
- Liaise with TfNSW, Sydney Metro, the Environmental Representative and other government authorities as required.
- Stop work immediately if an unacceptable impact on the environment is likely to occur

**Quickway Environmental Manager**

The environmental responsibilities of the Environmental Manager include (but are not limited to):

- Advising on environmental matters specified in the Approved Project, and Project requirements.
- Overall responsibility for the implementation of environmental matters on the Project.
- Development, implementation, monitoring and updating of the CEMP and associated environmental plans in accordance with ISO14001 and Project specifications
- Report to Senior Project Manager and other senior managers on the performance and implementation of the CEMP.
- Ensure environmental risks of the Project are identified and appropriate mitigation measures implemented in accordance with the CEMP and its sub-plans.
- Overall responsibility for the establishment, management, monitoring and maintenance of erosion and sediment controls within the Site.
- Identify where environmental measures are not meeting the targets set and where improvement can be achieved.
- Ensure environmental protocols are in place and managed.
- Ensure environmental compliance with statutory, approval and proponent requirements.
- Obtain and update all environmental licences, approvals and permits as required.
- Lead liaison with the Environmental Representative, Sydney Metro and approval authorities on environmental matters.
- Manage environmental document control, reporting, inductions and training.
- Manage environmental reporting within the Project team and to Sydney Metro and regulatory authorities.
- Oversee site monitoring, inspections and audits and carrying out regular inspections and auditing of the works to ensure that environmental safeguards are being followed.
- Identifying where the implemented environmental measures are not meeting the targets set, and identifying areas where improvement can be achieved.
- Manage all sub-contractors and consultants with regards to environmental matters, including assessing their environmental capabilities and overseeing the submission of their environmental documents.
- Prepare and/or distribute environment awareness notes.

- Develop ESCPs in consultation with the site supervisor, site/project engineers and other relevant site personnel, as required.
- Develop and facilitate induction, toolbox talks and other training programs regarding environmental requirements for all site personnel.
- Notify Sydney Metro and relevant authorities in the event of an environmental incident within the target timeframe and manage close-out of these events.
- Stop activities where there is an actual or immediate risk of harm to the environment, or prevent environmental non-conformances, and advise the Project Manager, Construction Manager and Site Supervisor.
- Assist the Communications Manager to resolve environment-related complaints.
- 24 Hour point of contact for the Environmental Protection Agency (EPA).
- Provide the ER with all documentation requested by the ER in order them to perform their functions (as specified in MCoA A27) and a copy of any assessment of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work).
- Provide the AA with information as described under MCoA A34.
- Providing noise and vibration documents required to be prepared under the Project Approval to the AA and consider any recommendations from the AA to improve practices, or demonstrate to the satisfaction of the AA why such recommendations were not adopted.
- Undertake incident reporting in accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure (refer to Section 6.7.2).
- Provide incident and non-conformance notifications as required under the Planning Approval (refer to Section 6.7.2)

**Site Supervisor**

The environmental responsibilities of the site supervisor include (but are not limited to):

- Communicate with all personnel and sub-contractors regarding compliance with the CEMP and site-specific environmental issues.
- Ensure all site workers attend an environmental induction prior to the commencement of works and the site-specific environmental conditions are understood.
- Coordinate the implementation of the CEMP, relevant EWMS and ESCPs.
- Coordinate the implementation and maintenance of pollution control measures.
- Identify resources required for implementation of the CEMP.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the Environmental Manager/Environmental Officers.
- Coordinate action in emergency situations and allocate required resources.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Construction Manager and Environmental Manager.

### Project/Site Engineers

The environmental responsibilities of the Project/Site engineers include (but are not limited to):

- Provide input into the preparation of environmental planning documents as required.
- Ensure that instructions are issued, and adequate information provided to employees that relate to environmental risks on-site.
- Ensure that the works are carried out in accordance with the requirements of the CEMP and supporting documentation, including the implementation of all environmental controls.
- Identify and report any environmental risks.
- Identify and precure resources needed for implementation of the requirements of the CEMP and related documents.
- Ensure that complaints are investigated to ensure effective resolution.
- Take action in liaison with the Site Supervisor in the event of an emergency and allocate the required resources to minimise the environmental impact.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the Site Supervisor and Environmental Manager.

### Wider Project Team (including sub-contractors)

The environmental responsibilities of the wider Project Team (including sub-contractors) include (but are not limited to):

- Comply with the relevant requirements of the CCEMP, or other environmental management guidance as instructed by a member of the Project's management.
- Participate in the mandatory Project/site induction program.
- Report any environmental incidents to the foreman immediately or as soon as practicable (ie within 24 hours of the incident) so reasonable steps can be adopted to control the incident.
- Undertake remedial action as required to ensure environmental controls are maintained in good working order.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager, Construction Manager, Site Supervisor or Environmental Manager.

Table 9 Internal (Quickway) roles summary of environmental responsibilities.

| Role | Lines of responsibility | Communications / Interface | Skill Level Requirements |
|---|---|---|---|
| Senior Project Manager | Reports to Quickway Senior Management outside the Project. | Will interface with:<br>▪ Sydney Metro through monthly progress meetings, the Monthly Report and ad hoc meetings when required.<br>▪ the ER and AA when required. | >5 years managing major civil infrastructure projects |
| Project Manager | Reports to Senior Project Manager | Will interface with:<br>▪ Sydney Metro through monthly progress meetings and ad hoc meetings when required.<br>▪ the ER and AA during site inspections and in addressing correspondence or enquiries when required. | Experience managing major civil infrastructure projects |
| Environmental Manager | Reports to Senior Project Manager | Will interface with:<br>▪ Sydney Metro in the preparation of environmental documentation, through attendance at routine environmental management meetings, collaborative site inspections and surveillance activities, and ad hoc meetings when required.<br>▪ the AA in the preparation of noise and vibration environmental documentation, during collaborative site inspections and surveillance activities, environmental management meetings and when required.<br>▪ the ER in the preparation of noise and vibration environmental documentation, during collaborative site inspections and surveillance activities, environmental management meetings and when required. | >5 years managing major civil infrastructure projects |
| Site Supervisor | Reports to Project Manager | Will interface with:<br>▪ Sydney Metro, the ER and AA during site inspections and in ad hoc meetings when required. | Experience managing major civil infrastructure projects |

| Role | Lines of responsibility | Communications / Interface | Skill Level Requirements |
|---|---|---|---|
| Project/Site Engineers | Reports to Project Manager | Will interface with:<br>▪ Sydney Metro, the ER and AA during site inspections and in ad hoc meetings when required. | Experience on civil infrastructure projects or relevant qualifications. |
| All employees and subcontractors | Various lines of responsibility | Will interface with:<br>▪ Sydney Metro, the ER and AA when required. | Various |

### 6.2.4 Environmental Consultants

**Contaminated Land Consultant**

- Undertake sampling of potential contaminated material when uncovered on site
- Determine waste classification of potentially contaminated materials before disposal where required
- Undertake joint inspections with Quickway and the Proponent when required
- Provide technical advice when required

**Archaeological Heritage Consultant / Excavation Director**

- Provide technical advice when required
- Undertake joint inspections with Quickway and the Proponent when required
- Review the proximity of features of the alignment with potential heritage items
- Be present on site when required to observe work near heritage items

**Noise and Vibration Consultant**

- Provide technical advice where required
- Undertake joint inspections with Quickway and the Proponent when required
- Undertake noise and vibration monitoring where required

**Certified Occupational Hygienist**

- Provide governance over all occupational health and hygiene activities including the approval of relevant management plans, health risk assessment and exposure control plans.
- Provide technical advice when required
- Undertake sampling of potentially Asbestos Containing Material (ACM)
- Undertake joint inspections with Quickway and the Proponent when required

## 6.3 Stakeholder relationships

The relationship between the Quickway, Sydney Metro, key regulatory agencies, the independent ER and AA are represented in Figure 11. All sub-contractors engaged by the Principal Contractor will be required to operate in accordance with the Quickway EMS and all environmental documentation.

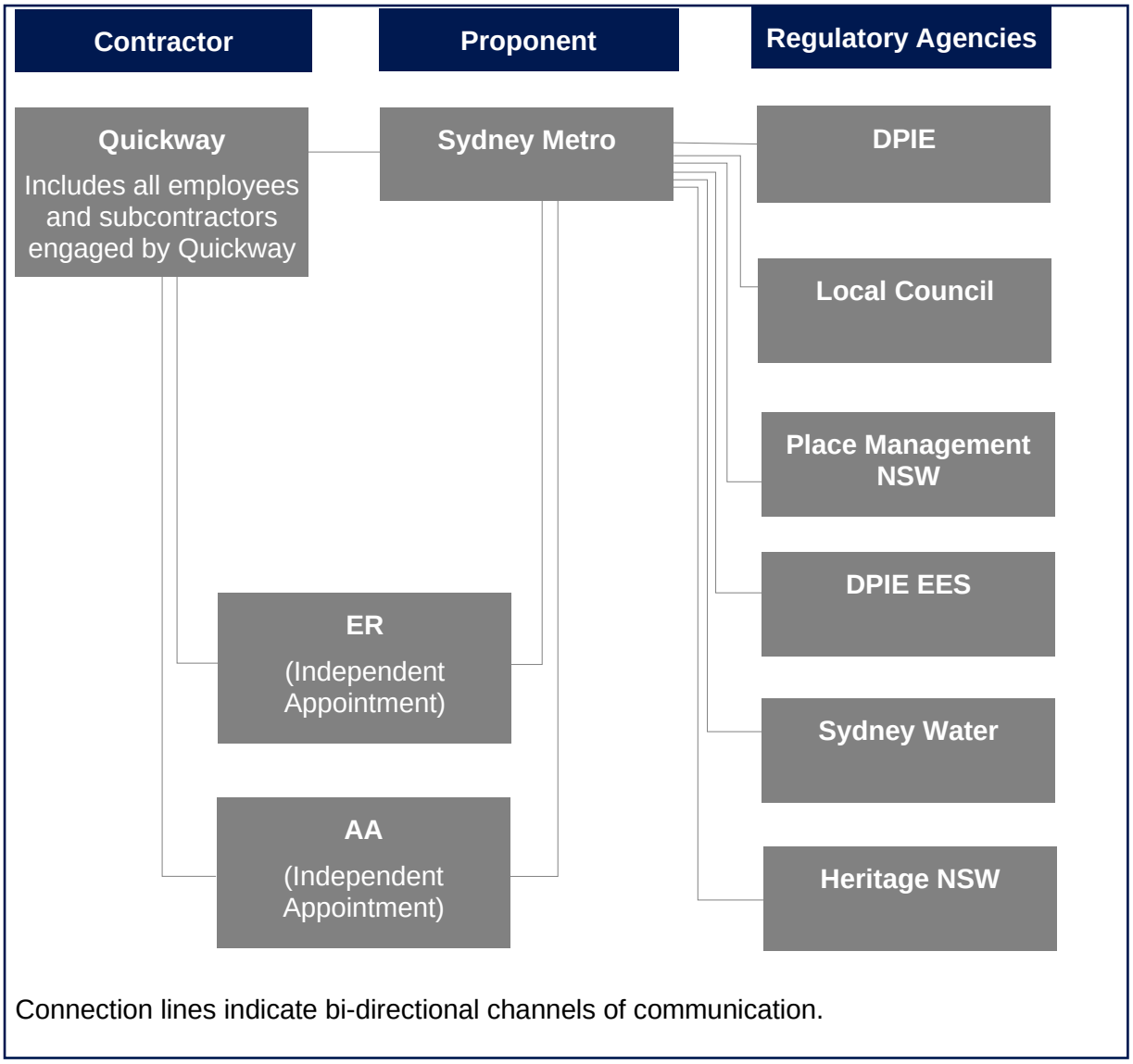



Figure 11 Stakeholder Relationships and communication channels for environmental documentation and management.

## 6.4 Competence, training and awareness

To ensure that the CEMP is effectively implemented, each level of project management are responsible for ensuring that all personnel reporting to them are aware of the requirements of this CEMP. The Quickway Environmental Manager will coordinate the environmental training in conjunction with other training and development activities (e.g. safety).

### 6.4.1 Environmental induction

All personnel (including subcontractors) are required to attend a compulsory site induction that includes an environmental component before commencing work on site. This is done to ensure all personnel involved in the Project are aware of the Project requirements and implement mitigation measures as described in environmental documentation.

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

The environmental induction would include, but not be limited to the following:

- Training purpose, objectives.
- Relevant details of the CEMP including purpose and objectives.
- Environmental policy and key performance indicators.
- Community management / management of issues which may affect the community
- Key environmental issues.
- Relevant conditions of environmental licences, permits and approvals, including the Planning Approval.
- Site specific issues and controls including those described in the environmental procedures.
- Requirements of due diligence, duty of care and environmental responsibilities.
- Mitigation measures for the control of environmental issues.
- High risk activities and associated environmental safeguards.
- Incident/hazard response and reporting procedures
- Unexpected finds response and notification requirements
- Information relating to the location of environmental constraints (ie sensitive area plans).
- Key environmental personnel and points of contact.
- Communication protocols for interactions with community and stakeholders.

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

### 6.4.2 Toolbox talks, training and awareness

Toolbox talks will be used as a method of raising awareness and educating personnel on issues related to all aspects of construction including environmental issues. The toolbox talks will be used to ensure

environmental awareness continues throughout construction and include details of EWMS for relevant personnel. Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works. Toolbox talk attendance is mandatory and attendees of toolbox talks are required to sign an attendance form and the records maintained.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact.

The ECMs will be displayed in crib sheds and site offices to promote awareness of the environmental constraints. Progressive Erosion and Sediment Control Plans will be distributed to the Site Supervisor and/or Forman to provide detail on erosion and sediment controls on the Project.

Quickway will establish and maintain a register of environmental training carried out, including dates, names of persons trained and trainer details.

### 6.4.3 Daily Pre-Start Meetings

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

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

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

Pre-start topics, dates delivered and a register of attendees will be maintained.

## 6.5 Working Hours

### 6.5.1 The Bays

Working hours for The Bays are set by MCoA D35 to D39. Standard construction hours as approved in MCoA D35 are as follows:

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

In accordance with MCoA D36 highly noise intensive works that result in an exceedance of the applicable Noise Management Level at the same receiver will only be undertaken:

(a) between the hours of 8:00 am to 6:00 pm Monday to Friday;

(b) between the hours of 8:00 am to 1:00 pm Saturday; and

(c) if continuously, then not exceeding three hours, with a minimum cessation of work of not less than one hour.

For the purposes of this condition, 'continuously' includes any period during which there is less than one hour between ceasing and recommencing any of the work.

Construction activities which are defined as annoying under the Interim Construction Noise Guideline (ICNG) are defined as 'highly noise intensive works'. These include:

- Use of 'beeper' style reversing or movement alarms, particularly at night time
- Using power saws (for cutting timber, masonry, road pavement or steel work)
- Grinding metal, concrete or masonry
- Rock drilling
- Line drilling
- Vibratory rolling
- Bitumen milling and profiling
- Jackhammering
- Rock-hammering or rock-breaking
- Impact piling.

Any other works outside of standard construction hours would be permitted providing they meet the requirements of MCoA D37, or if they are undertaken as per the Out-of-Hours Work (OOHW) Protocol required under MCoA D38.

A Detailed Construction Noise and Vibration Impact Statement (DNVIS) will also be prepared for the Project to identify required mitigation measures for OOHW. For further information on the DNVIS and OOHW Protocol refer to the CNVMP.

### 6.5.2 Eastern Creek

The approved working hours for the Eastern Creek site are standard construction hours as defined by the Sydney Metro CNVS:

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

No out of hours works were anticipated as part of the Project. If out of hours works are required Quickway would follow the Sydney Metro OOHW protocol to obtain the necessary approvals.

## 6.6 Communication

All site personnel including subcontractors will be made aware of the external and internal communications procedures and Quickway will ensure they are properly trained in their application.

A Sydney Metro Community Liaison officer will be appointed to the Project to perform the functions required under the Project Approval. This person will be the key community contact on the Project and will oversee implementation of the CCS and manage all relevant responsibilities on behalf of Quickway.

### 6.6.1 Internal Communication

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

The environmental team will meet regularly to discuss any issues with environmental management on-site, any amendments to plans that might be required or any new/changes to construction activities.

Regular meetings may also be scheduled with the ER, AA and Sydney Metro environmental staff. The purpose of these meetings would be to communicate ongoing environmental performance and to identify any issues to be addressed and upcoming works.

In addition, environment team members will participate in toolbox talks to communicate on environmental performance, to advise on any upcoming sensitive environmental matters for future work areas and to receive feedback from on-site personnel.

Further internal communications regarding environmental issues and aspects will be through environmental training described in Section 6.3.

### 6.6.2 Liaison with regulators and stakeholders

The Environmental Manager will be the main point of contact regarding specific environmental issues. The Environmental Manager has the responsibility to report on the ongoing environmental performance of the Project to Sydney Metro, ER and AA. The Environmental Manager will report regularly to Sydney Metro on progress and any key environmental matters.

Relevant government agencies will be consulted throughout construction as required.

Where changes are made to the CEMP or Sub-plans following consultation, updates will be recorded in the relevant version control section(s) and reapproval will sought as per Section 6.11.

### 6.6.3 Community liaison and/or notification

An CCS has been prepared by Sydney Metro for the Project. This plan identified opportunities and key communication tools needed to provide information and consult with the community and stakeholders during construction of the Project.

A Sydney Metro Community Liaison officer will be provided to Quickway for the duration of works, to ensure consistent messaging and appropriate detail is provided to the community on upcoming works.

In addition to actions described in the CCS for the purpose of providing current and relevant information to the community, Quickway will also establish a dedicated Project page on their website where documents required to be produced or obtained by Quickway will be included as per the allocated condition MCoA B11(d), (e) and (f).

### 6.6.4 Complaints management

The CCS details the Construction Complaints Management System, which includes a Complaints Register, which has been developed for the Project.

The Complaints Register will be provided to the ER on a daily basis as requested by the ER, in accordance with MCoA A31. Noise and Vibration complaints will also be provided to the AA.

Please refer to the CCS for more information about complaints management.

## 6.7 Emergency and incident response

### 6.7.1 General emergency and incident response

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

The procedure provides references to:

- Types of incidents.
- Criteria for classifying of environmental incidents.

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

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

- Spills of fuels, oils, chemicals and other hazardous materials
- Unauthorised discharge containment devices
- Unauthorised clearing or clearing beyond the extent of the Project boundary or premises
- Inadequate installation and subsequent failure of temporary erosion and sediment controls
- Unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat
- Unauthorised harm or desecration to Aboriginal objects and Aboriginal places
- Unauthorised damage or destruction to any State or locally significant relic or Heritage item
- Potential contamination of waterways or land
- Accidental starting of a fire or a fire breaking out of containment
- Any potential breach of legislation, including a potential breach of a condition of an environment protection licence, MCoA approval or any agency permit condition
- Works undertaken without appropriate approval or assessment under the EPA Act
- Works undertaken that are not in accordance with a Project assessment
- Unauthorised dumping of waste.

### 6.7.2 Reporting

#### 6.7.2.1 Sydney Metro and ER

Environmental incidents that would be or have the potential to be classified as Category 1 under the Sydney Metro Environmental incident and Non-compliance Reporting Procedure, will be notified verbally immediately to the Sydney Metro Environmental Manager and the ER, as well as the AA for noise and vibration related incidents.

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

#### 6.7.2.2 EPA

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

Quickway is required to inform the Sydney Metro Environment Manager immediately of any incidents that may require notification to the EPA.

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

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

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

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

#### 6.7.2.3 DPIE

The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one), and set out the location and nature of the incident. Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix A (included herein as Appendix J) of the SSI Project Approval.

The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Proponent becomes aware of any non-compliance with the conditions of this approval. A 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 noncompliance.

## 6.8 Monitoring, inspections and auditing

### 6.8.1 Audits

Quickway undertakes routine safety, environmental, and quality audits of all of its projects. Environmental audits will be undertaken in accordance with the Quickway EMS and AS/NZS ISO 19011:2014 - Guidelines for Auditing Management Systems.

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

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

Quickway will provide all information and documentation and participate in the Independent External Audits as required by the Independent Auditors.

Quickway's management plans, systems, and processes may be subject to audit and surveillance by Sydney Metro, the AA or the ER to gain assurance of effective management systems and processes as required to meet the requirements of the Contract, and implementation of environmental documents to meet the Project requirements. These agencies may utilise their own auditors and surveillance officers, supported by subject matter experts where relevant. Quickway will provide safe access to sites, systems and documentation, providing facilities to perform audits and surveillance, and the participation of relevant staff as required.

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

Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits will be produced by Quickway and provided to Sydney Metro on a six-monthly basis following the commencement of construction.

A summary of proposed audits and compliance reviews is provided in Table 10.

Table 10 Audits and Compliance Review summary

| Action | Frequency | Content | Reporting |
|---|---|---|---|
| Internal Audit | Annually | Environmental Management documents – focusing on aspects of high risk (e.g. noise and vibration). | Internal Audit outcomes will be reported to Sydney Metro within four weeks of the completion of the audit. |
| External - Independent Audit (MCoA A39) | Within 12 weeks of the commencement of construction.<br>At intervals, no greater than 26 weeks from the date of the initial Independent Audit or as otherwise agreed by the Secretary. | As described in the *Independent Audit Post Approval Requirements* (DPIE, 2020) and defined by Sydney Metro. | Independent Audit Reports and the Proponent's response to audit findings must be submitted to the Planning Secretary within two months of undertaking the independent audit |
| External - ER Audit | As determined by ER | As required under MCoA A30 | ER to prepare and submit report in accordance with their obligations. |
| External - AA Audit | As determined by AA | As required under MCoA A36 | AA to prepare and submit report in accordance with their obligations. |
| External - Sydney Metro Audit | As determined by Sydney Metro | As determined by Sydney Metro | As determined by Sydney Metro |
| External - DPIE | At request of DPIE | In accordance with MCoA A25 | As determined by DPIE |

| Action | Frequency | Content | Reporting |
|---|---|---|---|
| Compliance Reports | Six-monthly | Outcomes of internal and external environmental inspections; compliance against Project requirements. | Reports will be produced by Quickway and provided to Sydney Metro on a six-monthly basis following the commencement of construction. |

### 6.8.2 Informal site surveillance

Ongoing informal site surveillance will be undertaken continuously throughout the Project to assess the ongoing effectiveness and suitability of environmental controls. These will not be formally recorded, with the potential exception of site/diary notes noting potential rectification requirements or site conditions. This will generally be undertaken by the Site Supervisor or Forman.

### 6.8.3 Formal inspections

More structured site inspections specifically focusing on environmental mitigation measures will be undertaken as follows:

- Weekly inspections by Quickway's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record and will include (as a minimum):
  - ensuring boundary fencing (and/or protection of no-go zones) is intact
  - confirming erosion and sediment controls are installed effectively and are not exceeding capacity
  - a check on the ecological mitigation measures and project boundary fencing.
  - checking of heritage mitigation measures
  - checking waste storage facilities on site.

  Issues identified would be rectified as soon as practical, dependant on the nature and severity of the issue.
- Regular site inspections by the ER, AA and Sydney Metro representatives at a frequency to be agreed with Quickway.

In addition to the above, the Environmental Manager (or delegate) would undertake the following event-driven inspections of the work sites:

- Additional inspections will be undertaken following significant rainfall events (greater than 20 mm in 24 hours); and
- Post rainfall inspections to identify any rectification of erosion and sediment controls.

Copies of all environmental inspection reports prepared by Project environmental staff will be kept with the Project records and closed out within the agreed timeframes. The outcomes of inspections will be captured on Environmental Inspection Checklists and recorded within an Environmental Inspection Action Register.

Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority.

Quickway will undertake inspections of all plant and equipment daily for leakages of fuel, oil or hydraulic fluid. Repair any defective or deteriorated equipment that may result in leaks or leaks before using plant or equipment and maintain records of plant inspections.

### 6.8.4 External inspections

The ER, AA and Sydney Metro staff will undertake inspections of works sites, and in particular, critical activities throughout construction of the Project. Inspections would typically occur on a fortnightly or weekly basis depending on the complexity and anticipated risks associated with the work occurring at the time.

### 6.8.5 Environmental Review Group Inspections

Environmental Review Group (ERG) inspections will be offered during construction will include the ER, representatives of Sydney Metro, Councils, DPIE and other agencies upon request. These inspections will be typically less frequent, more likely on a quarterly basis depending on the construction of Project. These inspections provide a good opportunity to provide the participants with a project update as well as to allow the participants to provide feedback of performance to the Project delivery team.

A member of the Project environment team will participate in all ER, client and ERG inspections. Deficiencies and required actions will be promptly analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed.

### 6.8.6 Noise and Vibration Monitoring

Noise monitoring locations and triggers will be described in the Noise and Vibration Monitoring Program , included as part of the Construction Noise and Vibration Management Plan for the Project. In general, noise monitoring will be undertaken during the day, evening and night-time periods within the first month of site establishment and where new noise impacts are anticipated to be received by sensitive receivers.

Vibration monitoring locations and triggers will be described in the Noise and Vibration Monitoring Program. In general, vibration monitoring will be conducted during vibration generating activities that have the potential to impact on Heritage items or for activities within the standard safe working distances for that equipment. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, construction methodology will be reviewed and additional mitigation measures controls or methodology implemented to return to acceptable vibration levels.

Regarding heritage monitoring for heritage items, guidance from heritage specialists will be obtained prior to installing any equipment on heritage items. If a Heritage item is found to be structurally unsound (following inspection) a more conservative cosmetic damage criterion of 2.5 mm/s peak component particle velocity (from DIN 4150) must be applied.

Refer to the Construction Noise and Vibration Management Plan for further detail on noise and vibration monitoring requirements, including vibration monitoring of heritage items.

### 6.8.7 Weather monitoring

In accordance with normal standard construction practices, weather forecasts will be used to guide work activities undertaken on-site. Forecasts from the Bureau of Meteorology will be checked by the Environmental Manager and/or site supervisor at the start of each day and before any new work activity that may be affected by rainfall or adverse weather. Where weather forecasts predict conditions that may pose an environmental risk, site environmental controls will be inspected and secured to reduce erosion and sediment control impacts. Contingency planning to prevent spills will also involve monitoring for predicted flood events and the removal of fuels, chemicals and other hazardous chemicals from flood prone areas.

## 6.9 Records of environmental activities

### 6.9.1 Environmental records

The Environmental Manager is responsible for maintaining all environmental management documents as current at the point of use.

In accordance with the CEMF the following compliance records will be retained by Quickway:

**General**

- Site inspections, audits, monitoring, reviews or remedial actions.
- Documentation as required by performance conditions, approvals, licences and legislation.
- Modifications to site environmental documentation (eg CEMP, sub-plans and procedures).

**Biodiversity**

- Records of pre-clearing inspections undertaken
- Records of the release of the pre-clearing hold point
- Records of ecological inspections undertaken.

**Heritage**

- Unexpected finds and stop work orders.

**Noise and Vibration**

- Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria; and
- Records of community enquiries and complaints, and Quickway's response.

**Soil and Water**

- Copies of current ESCPs for all active construction sites
- Records of soil and water inspections undertaken
- Records of testing of any water prior to discharge and
- Records of the release of the hold point to discharge water from the construction site to the receiving environment.

**Waste**

- Compliance records will be retained by Quickway in relation to waste management including records of inspections and waste dockets for all waste removed from the site.

### 6.9.2 Document control

Quickway will implement a document control procedure to direct the internal management of documents, as well as control the flow of documents between Sydney Metro and other relevant stakeholders and sub-contractors.

The procedure will ensure that documentation is:

- Developed, reviewed and approved prior to issue.
- Issued for use.
- Controlled and stored for the legally required timeframe.

- Removed from use when superseded or obsolete.
- Archived.

Records must be accessible onsite for the duration of works. Additional records will be retained by Quickway for a period of no less than seven years. Records will be made available in a timely manner to Sydney Metro (or their representative) upon request.

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

This CEMP will be available to all personnel and sub-contractors in accordance with the Project document control procedure. The document is uncontrolled when printed. Controlled issued for use (IFU) versions of CEMP will be accessible digitally on server to all relevant personnel.

## 6.10 Management review

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

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

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

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

## 6.11 Document updates

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

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

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

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

# 7. Environmental Management

The CEMP Sub-plans, Procedures, Strategies and Monitoring Programs have been prepared to support the Project's CEMP and provide improved environmental management for the Project. These documents have been prepared to address the allocated requirements of the MCoA, REMM, CEMF other measures identified in Section 1.2 and environment assessment documentation.

Note that at the completion of works reinstatement of the works area will be undertaken as follows:

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

## 7.1 Flora and Fauna Management

Owing to the limited scope of the Project, a Flora and Fauna Management Plan was not identified as required in the Phasing Report required under MCoA A10.

As such, the following information has been included herein to address the management of flora and fauna across the Project:

- MCoAs are listed in Table 11
- REF CoAs are listed in Table 11
- CEMF requirements are listed in Table 12
- Project mitigation measures are identified in Table 13

Note, no EIS REMMs related to flora and fauna have been allocated to the Project scope.

This information and the mitigation measures is supported by the following procedures, which will be implemented across the Project:

- Weed Management Procedure as required by section 10.2(x) of the CEMF and attached as Appendix E.
- A Pre-Clearing Procedure to address relevant clearing requirements, attached as Appendix L

Table 11 Ministers CoAs relevant to biodiversity management

| MCoA | Requirement | Document Reference |
|---|---|---|
| D2 | The clearing of native vegetation must be minimised to the greatest extent practicable with the objective of reducing impacts to threatened ecological communities and threatened species habitat. | Section 7.1.2 |
| D3 | Impacts to plant community types must not exceed those identified in the documents listed in Condition A1 of this schedule, unless otherwise approved by the Planning Secretary. In requesting the Planning Secretary's approval, an assessment of the additional impact(s) to plant community types and an updated ecosystem and / or species credit requirement under Condition D4 below, if required, must be provided. | Section 7.1.2 |

Table 12 REF CoAs relevant to biodiversity management

| REF CoA | Requirement | Document Reference |
|---|---|---|
| B1 | Prior to construction, the limits of the work zone, areas for parking and turning of vehicles and plant equipment would be clearly and accurately marked out. These areas would be located so that vegetation disturbance is minimised as much as possible and the drip-line of trees avoided. | Section 7.1.3 |
| B3 | Materials, plant, equipment, work vehicles and stockpiles would be placed to avoid damage to surrounding vegetation and outside tree driplines. | Section 7.1.3 |
| B4 | Prior to construction, personnel would be informed of the environmentally sensitive aspects of the proposal site, including plans for impacted and adjoining areas showing vegetation communities, important flora and fauna habitat areas, and locations where threatened species, populations or ecological communities have been recorded. Construction personnel would be made aware that any native fauna species encountered must be allowed to safely leave the proposal site where possible and a local wildlife rescue organisation or appropriately experienced ecologist must be called for assistance where necessary. | Section 7.1.3 |
| B11 | Weed control would be undertaken by suitably qualified and/or experienced personnel.<br>This may include:<br>• Manual weed removal in preference to herbicides<br>• Replacing non-target species removed/killed as a result of weed control activities<br>• Protecting non-target species from spray drift<br>• Using only herbicides registered for use within or near waterways for the specific target weed<br>• Applying herbicides during drier times when the waterway level is below the high-water mark<br>• Not applying herbicide if it is raining or if rain is expected<br>Mixing and loading herbicides, and cleaning equipment away from waterways and drains. | Section 7.1.3 |

| REF CoA | Requirement | Document Reference |
|---|---|---|
| B12 | During construction, weed management would be undertaken in areas affected by construction prior to any clearing works in accordance with the Biosecurity Act 2015 to ensure they are not spread to the surrounding environment; including during transport disposal off-site to a licenced waste disposal facility | Section 7.1.3 |
| B13 | All weeds, propagules, other plant parts and/or excavated topsoil material that is likely to be infested with weed propagules that are likely to regenerate would be treated on site or bagged, removed from site and disposed of at a licensed waste disposal facility. | Section 7.1.3 |
| B14 | During construction, all vehicles driving to and from the proposal site would follow a protocol to prevent the spread or introduction of phytophthora, namely vehicles would be clean, including the tyres and any equipment | Section 7.1.3 |

Table 13 CEMF requirements relevant to biodiversity management

| CEMF Ref. | Requirement | Document Reference |
|---|---|---|
| **SMW Construction Environmental Management Framework** | | |
| 10.2 a) | Principal Contractors will develop and implement: | - |
| x. | Weed management measures focusing on early identification of invasive weeds and effective management controls | Section 7.1.3 |
| b) | Principal Contractors would undertake the following ecological monitoring as a minimum: | - |
| i. | A pre-clearing inspection will be undertaken prior to any native vegetation clearing by a suitable qualified ecologist and Quickway's Environmental Manager (or delegate). The pre-clearing inspection will include, as a minimum:<br>Identification of hollow bearing trees or other habitat features; Identification of any threatened flora and fauna;<br>A check on the physical demarcation of the limit of clearing;<br>An approved erosion and sediment control plan for the worksite; and<br>The completion of any other pre-clearing requirements required by any project approvals, permits or licences. | Section 7.1.3 |
| ii. | The completion of the pre-clearing inspection will form a HOLD POINT requiring sign-off from the Contractor's Environmental Manager (or delegate) and a qualified ecologist; and | Section 7.1.3 |
| iii. | A post clearance report, including any relevant Geographical Information System files, will be produced that validates the type and area of vegetation cleared including confirmation of the number of hollows impacted and the corresponding nest box requirements to offset these impacts. | Section 7.1.3 |

| CEMF Ref. | Requirement | Document Reference |
|---|---|---|
| c) | The Principal Contractor's regular inspections will include a check on the ecological mitigation measures and project boundary fencing. | Section 6.9.1 |
| d) | The following compliance records would be kept by the Principal Contractor: | Section 6.9.2 |
| i. | Records of pre-clearing inspections undertaken; | |
| ii. | Records of the release of the pre-clearing hold point; | |
| iii. | Records of ecological inspections undertaken. | |

### 7.1.1 Existing Environment

The following section summarises section 23 of the EIS and Section 8.13 of the REF.

#### 7.1.1.1 The Bays

Native and exotic street trees exist along the Power Supply route. The area is a highly disturbed urban zone, and there are no terrestrial areas of ecological significance present along the alignment. Sydney Harbour is considered Type 1 Key Fish Habitat. Numerous SEPP Coastal Wetlands exist in the Harbour surrounding White Bay. These provide potential habitat for threatened aquatic species and protected aquatic vegetation.

#### 7.1.1.2 Eastern Creek

The ecological study area is in a highly disturbed landscape that is extensively cleared and modified. Remaining intact vegetation is generally concentrated along waterways and consists of small fragmented bushland remnants and isolated trees.

There are no wetlands of significance within the ecological study area or immediate surrounds listed under the SEPP (Coastal management 2018), and no Areas of Outstanding Biodiversity Value (listed in the BC Act as special areas with irreplaceable biodiversity values important to NSW) within or near the proposal site.

Three threatened ecological communities (TECs) listed under the BC Act were identified in the ecological study area and include:

- Cumberland Plain Woodland in the Sydney Basin Bioregion (listed as critically endangered under the BC Act)
- River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (listed as endangered under the BC Act)
- Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (listed as endangered under the BC Act).

The ecological study area provides suitable habitat for the following threatened species that have been previously recorded in the locality:

- Cumberland Plain Land Snail
- Green and Golden Bell Frog
- Insectivorous bats,
- Woodland birds,
- Nectarivorous birds
- Grey-headed Flying Fox and
- Large predatory birds.

### 7.1.2 Potential Impacts

#### 7.1.2.1 The Bays

The limited amount of native vegetation to be disturbed by the Project is of poor quality and threatened species habitats are very limited.

No areas of land that the Minister for Energy and Environment has declared as an area of outstanding biodiversity value in accordance with Section 3.1 of the Biodiversity Conservation Act 2016 would be impacted, and no threatened flora species would be directly impacted.

Due to the marginal, unnatural structure of the vegetation present, it is unlikely that vegetation within the Project area would be used as breeding habitat by any threatened species. There is a chance of fauna mortality during construction through vehicle collision (i.e. roadkill) however this is unlikely.

Minor vegetation trimming of street trees to allow for plant and equipment access may be required along the alignment. This would not affect any offsets or require any additional offsets per MCoA D3 & D4. In order to effectively manage this process, a Pre-Clearing Procedure has been developed for the Project, and is included in the CEMP as Appendix L.

#### 7.1.2.2 Eastern Creek

Minor vegetation removal in the form of removal or trimming of juvenile isolated street trees may be required to allow for construction of trenches along Lenore Drive, however it is unlikely that the threatened ecological communities identified in section 8.11.3 of the REF or any fauna habitat would be directly affected by the work. Additionally, a significant impact is considered unlikely on any threatened species or threatened ecological communities listed under the EPBC Act.

Overall, potential impacts associated with habitat fragmentation are expected to be negligible. There would be no direct impacts to sensitive or key fish habitats associated with the Project.

The potential for indirect impacts on biodiversity values is considered low given that much of the ecological study area is highly fragmented, subject to strong edge effects, and surrounded by existing roads and barriers.

The Project area contains substantial weed growth and no undisturbed weed free habitat exists. The presence of pathogens has not been identified within the Project area however, the potential for pathogens to occur would be treated as a risk during construction.

The Pre-Clearing Procedure will be implemented for all clearing or trimming activities.

### 7.1.3 Mitigation Measures

Table 14 Biodiversity mitigation measures

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| All | B1 | Prior to construction, the limits of the work zone, areas for parking and turning of vehicles and plant equipment would be clearly and accurately marked out. These areas would be located so that vegetation disturbance is minimised as much as possible and the drip-line of trees avoided | REF-CoA B1<br>REF-MMM B1 | Site inspection reports<br>Sensitive Area Plans | Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| All | B2 | Materials, plant, equipment, work vehicles and stockpiles would be placed to avoid damage to surrounding vegetation and outside tree driplines | REF-CoA B3<br>REF-MMM B3 | Site inspection reports | Construction | Site supervisor<br>Project Engineer |
| Eastern Creek | B3 | Prior to construction, personnel would be informed of the environmentally sensitive aspects of the proposal site, including plans for impacted and adjoining areas showing vegetation communities, important flora and fauna habitat areas, and locations where threatened species, populations or ecological communities have been recorded. Construction personnel would be made aware that any native fauna species encountered must be allowed to leave the proposal site without being harassed and a local wildlife rescue organisation must be called for assistance where necessary | REF-CoA B4<br>REF-MMM B4 | Site inspection reports<br>Environmental Inductions<br>Toolbox talks<br>Environmental Controls Map | Pre-construction, Construction | Environment Manager<br>Site Supervisor |

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| Eastern Creek | B4 | Weed control would be undertaken by suitably qualified and/or experienced personnel. This may include:<br>• Manual weed removal in preference to herbicides<br>• Replacing non-target species removed/killed as a result of weed control activities<br>• Protecting Non-target species from spray drift.<br>• Using only herbicides registered for use within or near waterways for the specific target weed.<br>• Applying herbicides during drier times when the waterway level is below the high-water mark.<br>• Not applying herbicide if it is raining or if rain is expected<br>• Mixing and loading herbicides, and cleaning equipment away from waterways and drains. | REF-CoA B11<br>REF-MMM B11 | Site inspection reports<br><br>Weed Management Procedure | Construction | Environment Manager<br>Site supervisor |
| Eastern Creek | B5 | During construction, weed management would be undertaken in areas affected by construction prior to any clearing works in accordance with the Biosecurity Act 2015 to ensure they are not spread to the surrounding environment; including during transport disposal off-site to a licenced waste disposal facility. | REF-CoA B12<br>REF-MMM B12 | Site inspection reports<br><br>Weed Management Procedure | Construction | Environment Manager<br>Site supervisor |

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| Eastern Creek | B6 | All weeds, propagules, other plant parts and/or excavated topsoil material that is likely to be infested with weed propagules that are likely to regenerate would be treated on site or bagged, removed from site and disposed of at a licensed waste disposal facility. | REF-CoA B13<br>REF-MMM B13 | Waste Register<br><br>Weed Management Procedure | Construction | Environment Manager<br>Site supervisor |
| Eastern Creek | B7 | During construction, all vehicles driving to and from the proposal site would follow a protocol to prevent the spread or introduction of phytophthora, namely vehicles would be clean, including the tyres and any equipment. | REF-CoA B14<br>REF-MMM B14 | Weed Management Procedure | Construction | Environment Manager<br>Site supervisor |
| The Bays | B8 | The clearing of native vegetation must be minimised to the greatest extent practicable with the objective of reducing impacts to threatened ecological communities and threatened species habitat.<br><br>As many mature trees and as much urban canopy as practicable must be retained during construction. Canopy trimming should be considered where practicable prior to any mature tree removal. | MCoA D1<br>MCoA D3 | Site inspection reports<br>Sensitive Area Plans | Construction | Environment Manager<br>Site supervisor |
| The Bays | B9 | Impacts to plant community types must not exceed those identified in the documents listed in Condition A1 of this schedule, unless otherwise approved by the Planning Secretary. | MCoA D2 | Site inspection reports<br>Sensitive Area Plans | Construction | Environment Manager<br>Site supervisor |

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| All | B10 | A pre-clearing inspection will be undertaken prior to any native vegetation clearing by a suitable qualified ecologist and Quickway's Environmental Manager (or delegate). The pre-clearing inspection will include, as a minimum:<br>• Identification of hollow bearing trees or other habitat features;<br>• Identification of any threatened flora and fauna;<br>• A check on the physical demarcation of the limit of clearing;<br>• An approved erosion and sediment control plan for the worksite; and<br>• The completion of any other pre-clearing requirements required by any project approvals, permits or licences.<br>• The completion of the pre-clearing inspection will form a HOLD POINT requiring sign-off from Quickway's Environmental Manager (or delegate) and a qualified ecologist; and<br>• A post clearance report, including any relevant Geographical Information System files, will be produced that validates the type and area of vegetation cleared including confirmation of the number of hollows impacted and the corresponding nest box requirements to offset these impacts. | CEMF 10.2b) | Pre-Clearing Procedure | Before clearing any native vegetation | Environment Manager<br>Ecologist<br>Site supervisor |

## 7.2 Waste and Spoil

A Waste and Spoil Management Plan (WSMP) has been developed to manage potential waste management and resource consumption impacts resulting from construction of the Project. The WSMP is located in Appendix F of this CEMP and has been developed in accordance with general MCoA C5-C10.

Sub-plan specific Project requirements are included in the WSMP.

## 7.3 Soil and Water Quality

A Soil and Water Management Plan (SWMP) has been developed to manage potential soil and water impacts resulting from construction of the Project. The SWMP is located in Appendix H of this CEMP and has been developed in accordance with general MCoA C5-C10.

Sub-plan specific Project requirements are included in the SWMP. Additionally, the SWMP contains appendices prepared in accordance with Project requirements, including:

- Details for the management of contaminated land as well as the Unexpected Contaminated Land and Asbestos Finds Procedure required as per MCoA E61 (Appendix A in the SWMP).
- An emergency spill response procedure for the prevention, containment, and clean-up of spills (Appendix C of the SWMP).

## 7.4 Noise and Vibration

A Noise and Vibration Management Plan (CNVMP) has been developed to manage potential noise and vibration impacts resulting from construction of the Project. The CNVMP is located in Appendix I of this CEMP and has been developed in accordance with general MCoA C5-C10 and the Eastern Creek Precast Facility REF Revised Environmental Management Measures NV1 and NV2.

Sub-plan specific Project requirements are included in the CNVMP.

## 7.5 Non-Aboriginal Heritage

Owing to the limited scope of the Project, a Heritage Management Plan was not identified as required in the Phasing Report required under MCoA A10.

As such, the following information has been included herein to address the management of existing and unexpected non-Aboriginal heritage items in the Project areas:

- MCoAs are listed in Table 15
- REF CoAs are listed in Table 16
- CEMF requirements are listed in Table 17
- Mitigation measures are identified in Table 19

This information and the nominated mitigation measures is supported by the following procedures, which will be implemented across the Project:

- An Unexpected Heritage Finds and Human Remains Procedure as required by MCoA D31 is attached as Appendix G of this CEMP.

Table 15 Ministers MCoAs relevant to non-Aboriginal heritage management

| ID | Measure / Requirement | Document Reference |
|---|---|---|
| D13 | The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1 of this schedule. Unexpected heritage finds identified by Stage 1 of the CSSI must be managed in accordance with the Unexpected Finds Protocol outlined in Conditions D31 to D33 of this schedule. Consideration of avoidance and redesign to protect state significant unexpected finds must be addressed where this condition applies. | Section 7.5.4 |
| D14 | Before installing protective site boundary hoarding or equipment used for vibration and noise monitoring at any Heritage item identified in the documents listed in Condition A1 of this schedule, the advice of a suitably qualified and experienced built heritage expert must be obtained and implemented to ensure any such work does not have an adverse impact on the heritage significance of the item. The installation must also consider and avoid impacts to potential historical archaeology and seek advice from the Excavation Director approved under Condition D27 below. | Section 7.6.4 |
| D17 | The Roxy Theatre, White Bay Power Station, the former State Abattoirs and the former RTA Depot facade fronting Unwin Street, must not be destroyed, modified or otherwise adversely affected, except as identified in the documents listed in Condition A1 of this schedule. | Section 7.5.4 |
| D25 | Before the commencement of any work at Parramatta and The Bays metro station construction sites, a revised Archaeological Research Design and Excavation Methodology(s) must be prepared in accordance with Heritage Council of NSW guidelines and with reference to the detailed design of Stage 1 construction of the CSSI to guide archaeological excavation. The revised Archaeological Research Design and Excavation Methodology(s) must be prepared by the Excavation Director (approved under Condition D27 below) and must include:<br>(a) site specific research for the Parramatta and The Bays metro station construction sites which is conducted by a professional historian to clearly articulate the historical development of the allotments to assist with the reassessment of potential and significance;<br>(b) comparative analysis from archaeological investigations in Parramatta (including theses, publications and grey literature reports);<br>(c) preparation of research questions based on the additional site-specific research required by this condition, and relevant research agendas from previously excavated early historical occupation in Parramatta including recovered artefact assemblages; and<br>(d) a reconsideration of archaeological methods to manage the sites based on this additional assessment.<br>The revised Archaeological Research Design and Excavation Methodology(s) must apply to both Parramatta and The Bays metro station construction sites and be prepared in consultation with Heritage NSW and Place Management NSW (in respect of The Bays) and submitted to the Planning Secretary for approval.<br>The revised Archaeological Research Design and Excavation Methodology(s) must be implemented throughout the archaeological excavation programs.<br>Note: Nothing in these conditions prevents the Archaeological Research Design and Excavation Methodology to be separate procedures. | Section 7.5.5.2 |
| D26 | The revised Archaeological Research Design and Excavation Methodology(s) must include provision for early physical investigation of areas of impact identified as likely to contain State significant archaeology or subterranean Heritage items in the research design to inform excavation | Section 7.5.5.2 |

| ID | Measure / Requirement | Document Reference |
|---|---|---|
| | in these areas. This must include the Parramatta and The Bays metro station sites, including Parramatta Convict Drain, Parramatta Sand Body, White Bay Power Station (inlet) Canal and Beattie Street Stormwater Channel. | |
| D27 | Before commencement of archaeological excavation, the Proponent must nominate a suitably qualified Excavation Director, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019), to oversee and advise on matters associated with historical archaeology for the approval of the Planning Secretary, in consultation with Heritage NSW. The Excavation Director must be present to oversee excavation, advise on archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the approved Archaeological Research Design and Excavation Methodology(s) required under Condition D25 of this schedule. Aboriginal archaeological excavations must be conducted by a suitably qualified person in accordance with the requirements of the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010). More than one Excavation Director may be engaged for Stage 1 of the CSSI to exercise the functions required under the conditions of this approval. | Section 7.5.5.2 |
| D31 | An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (heritage items and values) in accordance with any guidelines and standards prepared by the Heritage Council of NSW or Heritage NSW. | Appendix G |
| D32 | The Unexpected Heritage Finds and Human Remains Procedure must be prepared by a suitably qualified and experienced heritage specialist in consultation with the Heritage Council of NSW (with respect to non-Aboriginal cultural heritage) and in relation to Aboriginal cultural heritage, in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) and submitted to the Planning Secretary for information no later than one (1) month before the commencement of construction. | Appendix G |
| D33 | The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction. | Appendix G |
| D47 | The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring at Heritage items. | Section 7.6.4 |

Table 16 REF CoAs relevant to non-Aboriginal heritage management

| MCoA | Requirement | Document Reference |
|---|---|---|
| NAH1 | An Unexpected Finds Procedure, to be implemented in the event that potential non-Aboriginal heritage objects are exposed during construction, would be prepared that complies with the Heritage Act 1977. | Section 7.5.4 |

Table 17 CEMF requirements relevant to non-Aboriginal heritage management

| CEMF Ref. | Requirement | Document Reference |
|---|---|---|
| 9.2 a) | Principal Contractors will develop and implement an unexpected finds procedure which will include as a minimum: | - |

| CEMF Ref. | Requirement | Document Reference |
|---|---|---|
| iii. | The heritage mitigation measures as detailed in the environmental approval documentation; | Section 6.1 |
| ix. | Procedures for unexpected heritage finds, including procedures for dealing with human remains; | Appendix G |
| b) | The Contractor's regular inspections will include checking of heritage mitigation measures. | Section 6.8 |
| c) | Compliance records will be retained by the Contractor. | Section 6.9 |
| iii. | Unexpected finds and stop work orders | Appendix G |

### 7.5.1 Management objectives

The non-Aboriginal heritage management objectives include:

- Minimise impacts on items or places of heritage value.
- Avoid accidental impacts on heritage items.
- Maximise worker's awareness of Non-Aboriginal heritage.

### 7.5.2 Existing non-Aboriginal Heritage

The following section summarises Section 12 of the EIS and Section 8.4 of the REF.

#### 7.5.2.1 The Bays

The existing environment surrounding The Bays Station construction site comprises a combination of industrial and maritime development within a harbourside setting near the historic suburbs of Balmain and Rozelle beyond.

A number of local and state listed heritage items have been identified as existing in close proximity to the power supply alignment. These items are listed in Table 18.

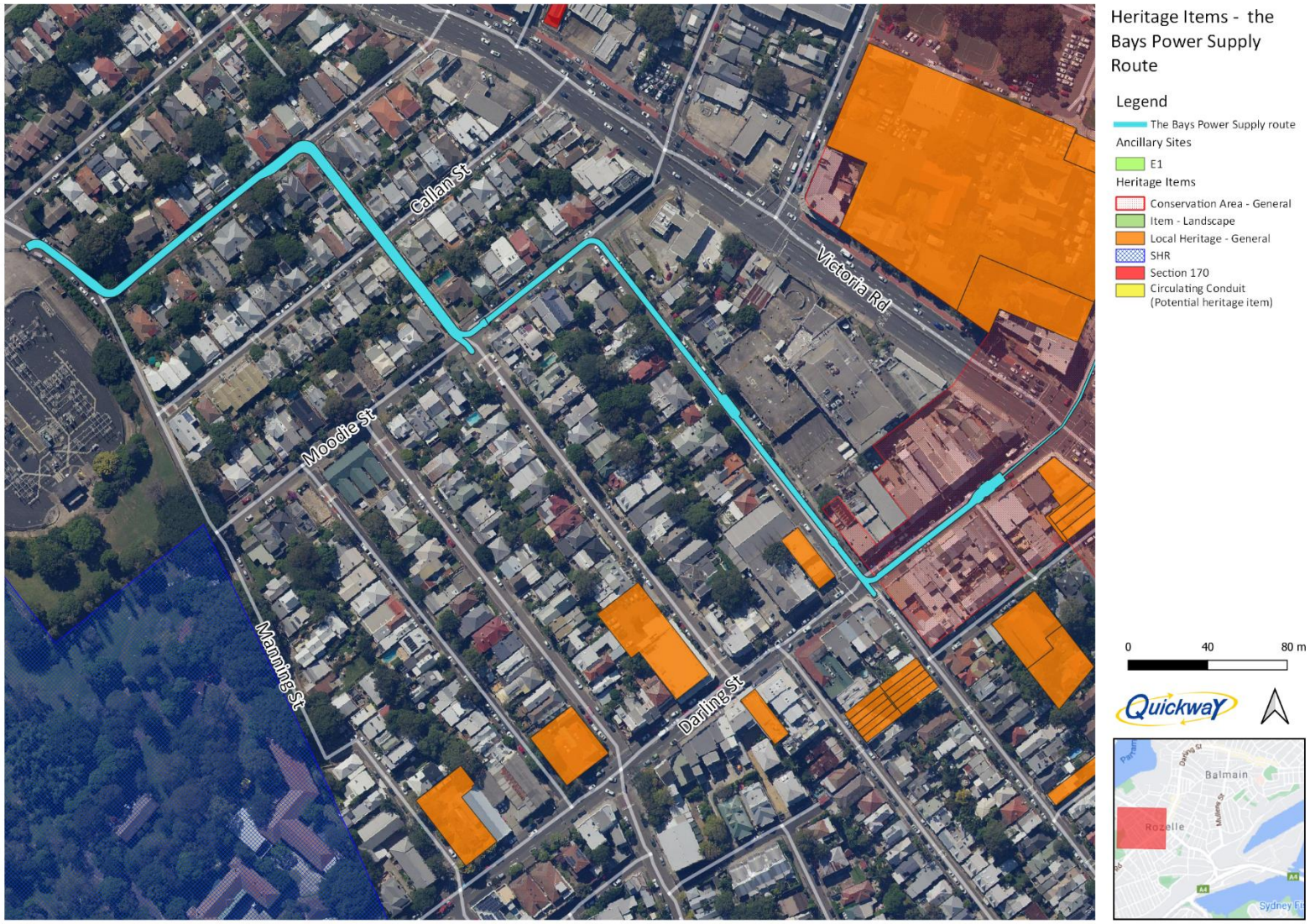
Table 18 Heritage items in proximity to the Bays Power supply route

| Heritage item | Register listings | Address | Significance | Relationship to construction alignment |
|---|---|---|---|---|
| White Bay Power Station | SHR Listing No. 01015<br>Urban Growth NSW Development Corporation's170 4500460<br>SREP No. 26 – City West Part 3 No. 11 | Victoria Road, Rozelle, NSW 2039 | State | The alignment and ancillary site is directly adjacent to the item |
| The Valley Heritage Conservation Area (HCA) | Leichhardt LEP Item No. C7 | Balmain, NSW 2041 | Local | Alignment passes through this area |

| Heritage item | Register listings | Address | Significance | Relationship to construction alignment |
|---|---|---|---|---|
| White Bay Power Station inlet canal | Port Authority of NSW s170 4560026 | Glebe Island, NSW 2040 | State- S.170 | The alignment passes through this area<br>Ancillary Facility site O1 is adjacent to this item<br>Ancillary Site E1 (a, b, c) is adjacent to the item |
| White Bay Power station outlet canal | Port Authority of NSW s170 4560062 | Glebe Island, NSW 2040 | State | The alignment and ancillary site is directly adjacent to the item |
| Beattie Street Stormwater Channel No.15 | Sydney Water's170 4570329 | Robert Street to Beattie Street, Rozelle / Balmain, NSW | State- S.170 | The alignment and ancillary site is directly adjacent to the item |
| Sewage Pumping Station No. 7 | Sydney Water's170 4571705 | 169, Roberts Street Rozelle, 2039 | State- S.170 | The alignment and ancillary site is directly adjacent to the item |
| Rozelle Public School | Leichhardt LEP Item No. I743 | 663 Darling Street, Rozelle, 2039 | Local | The alignment is directly adjacent to the item |
| St Pauls Church and neighbourhood centre | Leichhardt LEP Item No. I744 | 665A Darling Street, Rozelle, 2039 | Local | The alignment is directly adjacent to the item |
| St Thomas Church group | Leichhardt LEP Item No. I745 | 668 Darling Street, Rozelle, 2039 | Local | The alignment is directly adjacent to the item |
| York Buildings | Leichhardt LEP Item No. I746<br>Leichhardt LEP Item No. I807<br>Leichhardt LEP Item No. I808<br>Leichhardt LEP Item No. I809 | 678 Darling Street, Rozelle, 2039<br>128 Victoria Road, Rozelle, 2039<br>130 Victoria Road, Rozelle, 2039<br>132 Victoria Road, Rozelle, 2039 | Local | The alignment is directly adjacent to the item |

| Heritage item | Register listings | Address | Significance | Relationship to construction alignment |
|---|---|---|---|---|
| Former corner shop and residences | Leichhardt LEP Item No. I761<br>Leichhardt LEP Item No. I785 | 80 Mansfield Street, Rozelle, 2039<br>94 Evans Street, Rozelle, 2039 | Local | The alignment is directly adjacent to the item |
| Terraces | Leichhardt LEP Item No. I783<br>Leichhardt LEP Item No. I784 | 76 Mansfield Street, Rozelle, 2039<br>78 Mansfield Street, Rozelle, 2039 | Local | The alignment is directly adjacent to the item |
| Former police station | Leichhardt LEP Item No. I747 | 707 Darling Street, Rozelle, 2039 | Local | The alignment is directly adjacent to the item |

Figure 8 to Figure 10 indicate the Local, State, and Section 170 Heritage items located adjacent to the Project Alignment.




Heritage Items - the Bays Power Supply Route

Legend

The Bays Power Supply route

Ancillary Sites

E1

Heritage Items

Conservation Area - General

Item - Landscape

Local Heritage - General

SHR

Section 170

Circulating Conduit (Potential heritage item)

0 40 80 m




Figure 12 Heritage items along the Bays route


Figure 13 Heritage items along the Bays route


Figure 14 Heritage items along the Bays route

#### 7.5.2.2 Eastern Creek

The proposal site forms part of the Prospect area. European exploration in the Prospect area began in 1788, extending to Prospect Hill (about 10 kilometres east of the proposal site). Within early years of European settlement, Governor Arthur Phillip placed a farming settlement of about 12 families in the area encircling Prospect Hill in 1791.

The early land grants at the Prospect area led to an influx of free settlers living in the area. This brought the development of transport, infrastructure, and services. The Prospect area shifted from agricultural land to livestock rearing following the collapse of the cereal grain industry during the 1870s. Nevertheless, the land within and around the proposal site continued to be utilised for agricultural purposes throughout the remainder of the nineteenth and into the twentieth century. Development was limited to a number of rural properties, which included residential properties, outbuildings, barn structures, open paddocks and crop fields.

There are no listed heritage items or potential heritage items identified within the proposal site and immediate surrounds. There would be no archaeological impacts to items of non-Aboriginal significance as a result of the proposal. The proposal site overlaps with the paddocks associated with a shed and yard complex in the north-eastern corner of the proposal site as well as a small rubbish dump. However, these potential archaeological remains are not expected to reach the threshold for local significance.

It is noted that the REF Technical Paper F (Non Aboriginal Heritage) states that archaeological remains identified within the north-east corner of the proposal site may be removed as required without further assessment or mitigation

### 7.5.3 Potential Impacts

The EIS and REF noted the following of the Project's potential impacts to non-Aboriginal heritage (EIS Section 12.5.3, and REF Section 8.4):

#### 7.5.3.1 The Bays

- Power supply routes would be constructed by trenching within the existing road reserve. Trenches are expected to be around one metre wide and 1.5 to two metres deep. It is therefore likely that any subsurface archaeological which remains to this depth below the road treatment and pavement would be impacted. However, as the road corridor is highly disturbed the archaeological potential would be low.
- Within the conservation area, impacts to sandstone kerbing and visual impacts are likely to be temporary and minor, there would be no impact to any buildings or other heritage aspects of the HCA,
- The power supply route traverses the outlet canal for White Bay Power Station and may result in adverse direct impacts; remainder of power supply route would not impact any known non-Aboriginal archaeological resources

All excavation within The Bays area would be undertaken in accordance with the Archaeological Research Design and Excavation Methodology(s) (ARDEM) to minimise any potential impacts on underground heritage items. Works outside The Bays area would be managed through the implementation of the Unexpected Heritage Finds and Human Remains Procedure.

#### 7.5.3.2 Eastern Creek

- There would be no physical or visual impacts to known heritage items as a result of the proposal and no impacts from vibration or settlement.

### 7.5.4 Mitigation Measures

The specific measures and requirements to address impacts of non-Aboriginal heritage are outlined in Table 19.

Table 19 Non-Aboriginal heritage mitigation measures

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| All | NAH1 | The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1.<br>The \White Bay Power Station must not be destroyed, modified or otherwise adversely affected, except as identified in the documents listed in Condition A1 of this schedule. | MCoA D13<br>MCoA D17 | Site inspection reports | Construction | Environment Manager |
| All | NAH2 | An Unexpected Heritage Finds and Human Remains Procedure must be prepared and implemented to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or EES. | MCoA D31, D32 & D33<br>REF-CoA NAH1<br>REF-MMM NAH1<br>CEMF 9.2a) | Unexpected Heritage Finds and Human Remains Procedure | Pre-construction/ Construction | Environment Manager |
| All | NAH3 | The project induction will include information about the implementation of the unexpected heritage finds procedure | Best Practice | Project induction | Pre-construction | Environment Manager<br>Site supervisor |
| The Bays | NAH4 | Where heritage items, including significant archaeology are impacted by Stage 1 works, consideration would be given to their inclusion in the Heritage Interpretation Plan for future stages. | EIS REMM NAH5 | Unexpected Heritage Finds and Human Remains Procedure | Construction | Environment Manager<br>Sydney Metro |
| The Bays | NAH5 | Where sandstone kerbs are present within The Valley HCA, conveyors belts or other padding/protection measures will be used when plant and / or equipment needs cross onto footpath. | Best Practice | Site inspection reports | Construction | Environment Manager<br>Site supervisor |

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| | | Where frequent crossing, or works are required within the kerbing area, they will be removed using rock grabs and re-installed to the same location at the completion of works in that location.<br>All removed sandstone kerbs will be kept in the immediate vicinity of where they were removed from or kept at the site compound in a secure location with adequate protection. | | | | |
| The Bays | NAH6 | A conservative vibration criteria of 2.5mm/second will be applied for heritage structures until they are demonstrated to be structurally sound. | MCoA D49 | Vibration monitoring<br>CCNVMP | Construction | Environment Manager |
| The Bays | NAH7 | Vibration monitoring will be conducted during vibration generating activities that have the potential to impact on Heritage items, to identify minimum working distances to prevent cosmetic damage.<br>In the event that applicable criteria are exceeded, construction methodology will be reviewed and, if necessary, implement additional mitigation measures. | MCoA D46 | Vibration monitoring<br>CCNVMP | Construction | Environment Manager |
| The Bays | NAH8 | The advice of a suitably qualified and experienced built heritage expert must be obtained and implemented before installing protective site boundary hoarding or attaching any monitoring equipment at any Heritage item.<br>The installation must also consider and avoid impacts to potential historical archaeology and seek advice from the Excavation Director. | MCoA D14<br>MCoA D47 | Written response from relevant subject matter expert | Construction | Environment Manager |

## 7.5.5 Additional Management

### 7.5.5.1 ARDEM

In accordance with MCoA D25, before the commencement of any work at the Bays construction site a revised Archaeological Research Design and Excavation Methodology(s) (ARDEM) must be prepared in accordance with Heritage Council of NSW guidelines and with reference to the detailed design of the Power Supply Route to guide archaeological excavation.

The revised Archaeological Research Design and Excavation Methodology(s) must be prepared by the Excavation Director and must include:

(a) site specific research for the The Bays construction sites which is conducted by a professional historian to clearly articulate the historical development of the allotments to assist with the reassessment of potential and significance;

(b) preparation of research questions based on the additional site-specific research required by this condition, and relevant research agendas from previously excavated early historical occupation in Parramatta including recovered artefact assemblages; and

(c) a reconsideration of archaeological methods to manage the sites based on this additional assessment.

The revised ARDEM must be prepared in consultation with Heritage NSW and Place Management NSW and submitted to the Planning Secretary for approval.

The revised Archaeological Research Design and Excavation Methodology(s) must be implemented throughout the archaeological excavation programs.

### 7.5.5.2 Excavation Director

In accordance with MCoA D27 Quickway must nominate a suitably qualified Excavation Director before the commencement of archaeological excavation on the Project. The Excavation Director must comply with the Heritage Council of NSW's Criteria for Assessment of Excavation Director, to oversee and advise on matters associated with historical archaeology. Appointment of the Excavation Director will be subject to DPIE approval, in consultation with Heritage NSW.

The excavation director must be present to oversee excavation, advise on archaeological issues, and advise on the duration and extent of oversight required during archaeological excavations in line with the revised ARDEM.

### 7.5.5.3 Vibration Monitoring

In accordance with MCoA D46, Quickway will conduct vibration testing during vibration generating activities that have the potential to impact on heritage items, to identify minimum working distances to prevent cosmetic damage. Should vibration testing and monitoring show that the preferred values for vibration are likely to be exceeded, Quickway will follow the process in Section 10 of the CNVMP.

Vibration assessments prepared for the Project will also identify where monitoring should be conducted at heritage items.

In line with MCoA D47, Quickway will seek the advice of the Project's heritage and noise and vibration specialists, on methods and locations for installing equipment used for vibration, movement and noise monitoring of heritage-listed structures.

## 7.6 Aboriginal Heritage

Owing to the limited scope of the Project, a Heritage Management Plan was not identified as required in the Phasing Report required under MCoA A10.

As such, the following information has been included herein to address the management of existing and unexpected Aboriginal heritage items in the Project areas:

- MCoAs are listed in Table 20
- REF CoAs are listed in Table 21
- CEMF requirements are listed in Table 22
- Mitigation measures are identified in Table 23

This information and the nominated mitigation measures is supported by the following procedures, which will be implemented across the Project:

- An Unexpected Heritage Finds and Human Remains Procedure as required by MCoA D31 is attached as Appendix G of this CEMP.

Table 20 MCoAs relevant to Aboriginal heritage management

| MCoA ID | Measure / Requirement | Document Reference |
|---|---|---|
| D19 | All reasonable steps must be taken so as not to harm, modify or otherwise impact Aboriginal objects except as authorised by this approval. | Section 7.6.4 |
| D24 | Where previously unidentified Aboriginal objects are discovered, all work must immediately stop in the vicinity of the affected area and a suitably qualified and an experienced Aboriginal heritage expert must be contacted to provide specialist heritage advice, before construction recommences. The measures to consider and manage this process must be specified in the Heritage CEMP Sub-plan required by Condition C5 of this schedule and, where relevant, include registration in the Aboriginal Heritage Information Management System (AHIMS). | Appendix G |
| D31 | An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (heritage items and values) in accordance with any guidelines and standards prepared by the Heritage Council of NSW or Heritage NSW. | Appendix G |
| D32 | The Unexpected Heritage Finds and Human Remains Procedure must be prepared by a suitably qualified and experienced heritage specialist in consultation with the Heritage Council of NSW (with respect to non-Aboriginal cultural heritage) and in relation to Aboriginal cultural heritage, in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) and submitted to the Planning Secretary for information no later than one (1) month before the commencement of construction. | Appendix G |
| D33 | The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction.<br>Note: Human remains that are found unexpectedly during the carrying out of work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately. Management of human remains in NSW is subject to requirements set out in the Public Health Act 2010 (NSW) and Public Health Regulation 2012 (NSW). Nothing in these | Appendix G |

| MCoA ID | Measure / Requirement | Document Reference |
|---|---|---|
| | conditions prevents separate procedures for the Unexpected Heritage Finds and Human Remains Procedure. | |

Table 21 REF CoAs relevant to Aboriginal heritage management

| MCoA | Requirement | Document Reference |
|---|---|---|
| AH5 | In the event that suspected Aboriginal ancestral remains are exposed during construction, the requirements of Section 3.6 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) would be implemented. | Section 7.6.4<br>Appendix G |

Table 22 CEMF requirements relevant to Aboriginal heritage management

| CEMF Ref. | Requirement | Document Reference |
|---|---|---|
| 9.2 a) | Principal Contractors will develop and implement an unexpected finds procedure which will include as a minimum: | - |
| iii. | The heritage mitigation measures as detailed in the environmental approval documentation; | Section 6.1 |
| ix. | Procedures for unexpected heritage finds, including procedures for dealing with human remains; | Appendix G |
| b) | The Contractor's regular inspections will include checking of heritage mitigation measures. | Section 6.8 |
| c) | Compliance records will be retained by the Contractor. | Section 6.9 |
| iii. | Unexpected finds and stop work orders | Appendix G |

### 7.6.1 Management objectives

The Heritage Management Objectives include:

- Minimise impacts on items or places of heritage value.
- Avoid accidental impacts on heritage items.
- Maximise worker's awareness of Aboriginal heritage.

### 7.6.2 Existing Aboriginal Heritage Environment

The following section summarises Section 23 of the EIS and Section 8.13 of the REF.

#### 7.6.2.1 The Bays

The power supply routes between substations and the construction sites are largely located within existing road reserves. As assessed in the EIS, these areas have generally undergone a high degree of disturbance or modification as a result of landform modification, road development and installation of existing services. In the majority of these cases, the level of identified disturbance is considered to have removed intact natural soil deposits reducing the archaeological potential of these areas.

#### 7.6.2.2 Eastern Creek

Previous archaeological investigations have identified some particularly high concentrations of artefacts in raised areas adjacent to Ropes Creek. While the presence of artefacts is noted surrounding first order waterlines, their prevalence appears to decrease with increasing distance from Ropes Creek. Silcrete has been identified as the predominant raw material found in proximity to the proposal site, including in Erskine Park (about 3.7 kilometres west of the proposal site) and Plumpton Ridge (about 8.2 kilometres northeast of the proposal site).

An extensive search of the AHIMS database was undertaken on 27 March 2020 (AHIMS search ID 491998). The search area was about 3.6 kilometres by 3.9 kilometres. A total of 112 Aboriginal sites were identified in the AHIMS search area. The majority of the recorded site features are artefacts (107 in total).

A substantial number of sites are located within and in close proximity to the open grassland areas adjacent to Ropes Creek. Sites located to the north of the proposal site include a density of artefact sites associated with slope and crest landforms. Nine sites have been previously recorded either within or in the immediate vicinity of the proposal site. Section 8.5 of the REF noted the recorded Aboriginal sites and additional sites identified during the archaeological survey within or partially within the Project area.

An additional extensive search of the AHIMS database was undertaken on 1 June 2021 (AHIMS search ID 595442) which confirmed no listings within or immediately adjacent (i.e. within 100 metres) of the location of works or required ancillary facility for the power enabling works for the pre-case facility.

### 7.6.3 Potential Impacts

#### 7.6.3.1 The Bays

The archaeological potential associated with the Bays power supply route is considered to be low. As the work area is located within existing road reserves and on reclaimed land.

#### 7.6.3.2 Eastern Creek

There is moderate archaeological potential associated with Eastern Creek site owing to the proximity of Aboriginal Heritage sites. The closest Aboriginal Heritage site is located around 100m west of the power supply alignment along Lenore Drive. Despite the proximity of Aboriginal Heritage sites to the work area it is unlikely that the Project would affect these areas as trenching would only occur locally in areas that have been previously disturbed by road works and utility installation.

### 7.6.4 Mitigation Measures

The specific measures and requirements to address impacts of Aboriginal Heritage are outlined in Table 23.

Table 23 Aboriginal Heritage mitigation measures

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| All | AH1 | All reasonable steps must be taken so as not to harm, modify or otherwise impact Aboriginal objects except as authorised by this approval. | MCoA D19<br>Best Practice | Site inspection reports | During Construction | Environment Manager |
| All | AH2 | An Unexpected Heritage Finds and Human Remains Procedure must be prepared and implemented to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or EES. | MCoA D31, D32 & D33<br>REF-CoA NAH1<br>MMM NAH1<br>CEMF 9.2a) | Unexpected Heritage Finds and Human Remains Procedure | Pre-construction/ Construction | Environment Manager |
| All | AH3 | The project induction will include information about the implementation of the unexpected heritage finds procedure | Best Practice | Project induction | Pre-construction | Environment Manager<br>Site supervisor |
| The Bays | AH4 | Where previously unidentified Aboriginal objects are discovered, all work must immediately stop in the vicinity of the affected area and a suitably qualified and an experienced Aboriginal heritage expert must be contacted to provide specialist heritage advice, before construction recommences. | MCoA D24 | Unexpected Heritage Finds and Human Remains Procedure | Pre-construction/ Construction | Environment Manager |
| Eastern Creek | AH5 | In the event that suspected Aboriginal ancestral remains are exposed during construction, the requirements of Section 3.6 of the *Code of Practice for Archaeological Investigations of Aboriginal Objects in New South Wales* (DECCW 2010) would be implemented. | REF-CoA AH5<br>MMM AH5 | Unexpected Heritage Finds and Human Remains Procedure | Pre-construction/ Construction | Environment Manager |
| The Bays | AH6 | If Aboriginal archaeological remains are recovered during Stage 1, results would be incorporated into Aboriginal heritage interpretation for the Concept in consultation with registered Aboriginal parties. | REMM AH3 | Unexpected Heritage Finds and Human Remains Procedure | Pre-construction/ Construction | Environment Manager<br>Sydney Metro |

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| The Bays | AH7 | In the event that a potential burial site or potential human skeletal material is exposed during construction, the Sydney Metro Exhumation Management Plan would be implemented. | REMM AH4 | Unexpected Heritage Finds and Human Remains Procedure | Construction | Environment Manager |

## 7.7 Air Quality Management

Owing to the limited scope of the Project, an Air Quality Management Plan was not identified as required in the Phasing Report required under MCoA A10.

As such, the following information has been included herein to address the management of air quality in the Project areas:

- MCoA are listed in Table 24
- REF CoAs are listed in Table 25
- No CEMF management requirements have been allocated
- Mitigation measures are identified in Table 27

Table 24 Minister's MCoA relevant to air quality management

| MCoA | Requirement | Document Reference |
|---|---|---|
| D1 | All reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction. | Section 7.7.5 |

Table 25 REF CoAs relevant to air quality management

| MCoA | Requirement | Document Reference |
|---|---|---|
| AQ1 | The following best-practice dust management measures would be implemented during construction works:<br>• Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather<br>• Adjust the intensity of activities based on measures and observed dust levels and weather forecasts<br>• Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers<br>• Regularly inspect dust emissions and apply additional controls as required. | Section 7.7.5 |
| AQ2 | The following best-practice dust management measures would be implemented during operation:<br>• Ensure that loads are covered and that haulage vehicles are cleaned to remove any loose debris before leaving the site<br>• Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather<br>• Position long-term stockpiles away from surrounding receivers<br>• Regularly inspect and where necessary clean sealed haulage roads to remove tracked materials. | Section 7.7.5 |
| AQ3 | Plant and equipment would be maintained in a proper and efficient manner. Visual inspections of emissions from plant would be carried out as part of pre-acceptance checks. | Section 7.7.5 |

| MCoA | Requirement | Document Reference |
|---|---|---|
| AQ4 | The following best-practice measures would be implemented to manage airborne hazardous materials during construction:<br>• Temporary coverings or odour suppressing agents would be applied to excavated areas where appropriate<br>• Removal and disposal of hazardous materials would be undertaken in accordance with the relevant requirements in the *Work Health and Safety Act 2011, Work Health and Safety Regulation 2017* and any applicable guidelines. | Section 7.7.5 |

### 7.7.1 Management objectives

The air quality management objectives include:

- Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable
- Identify and control potential dust and air pollutant sources.

### 7.7.2 Existing Environment

The following section generally summarises the existing environment for both the Bays and Eastern Creek sites which correspond to section 23 of the EIS and Section 8.13 of the REF respectively.

Ambient air quality throughout the Sydney Basin is influenced by a number of factors, including topography, prevailing meteorological conditions (such as wind and temperature, which vary seasonally) and local and regional air pollution sources (such as motor vehicles, industrial facilities and bushfires). Consequently, regional air quality can be highly variable and impacted by events occurring a significant distance away.

The NSW Office of Environment and Heritage uses a standardised measurement known as the air quality index to characterise air quality and the acceptability of air quality at a location and compare it in relative terms with other locations throughout NSW.

Air quality data presented in the approval documents, sourced from monitoring stations at Rozelle, and Prospect is summarised in Table 26. The data shows the existing concentrations of air pollutants were generally below the applicable air quality impact assessment criteria during the 2014 to 2018 reporting periods for sulfur dioxide, nitrogen dioxide and carbon monoxide.

Table 26 Background air quality data

| Pollutant | Averaging period | Air quality impact assessment criteria | Prospect | | | | | Rozelle | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2014 | 2015 | 2016 | 2017 | 2018 | 2014 | 2015 | 2016 | 2017 | 2018 |
| $PM_{10}$ ($ug/m^3$) | Maximum 24-hour | 50 | 44 | 69 | 110 | 61 | 113 | 44 | 60 | 59 | 54 | 88 |
| | $95^{th}$ percentile 24-hour | 50 | 30 | 30 | 34 | 32 | 37 | 30 | 29 | 20 | 31 | 31 |
| | Annual | 25 | 18 | 18 | 19 | 19 | 22 | 18 | 17 | 17 | 18 | - |
| | Maximum 24-hour | 25 | - | 30 | 85 | 30 | 48 | - | - | 49 | 36 | 19 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $PM_{2.5}$ ($ug/m^3$) | 95th percentile 24-hour | 25 | - | 16 | 18 | 15 | 16 | - | - | 14 | 13 | 14 |
| | Annual | 8 | - | 8.2 | 8.7 | 7.7 | 8.5 | - | - | 7.4 | 7.2 | - |
| Carbon monoxide ($mg/m^3$) | Maximum 1-hour | 30 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| Nitrogen dioxide ($ug/m^3$) | Maximum 1-hour | 246 | 88 | 100 | 100 | 113 | 96 | 103 | 113 | 94 | 115 | 107 |
| | Annual | 62 | 19 | 18 | 19 | 19 | 17 | 21 | 17 | 21 | 21 | 21 |
| Sulfur dioxide ($ug/m^3$) | Maximum 1-hour | 570 | 50 | 71 | 55 | 60 | 66 | - | 73 | 52 | 63 | 79 |
| | Annual | 60 | 3 | 3 | 3 | 3 | 3 | - | 3 | 3 | 3 | 3 |

### 7.7.3 Location of potentially sensitive receivers

#### 7.7.3.1 The Bays

Potential sensitive receivers nearest to The Bays site include:

- Residential receivers along the route, located at closest 5 metres away from work areas
- Users of several parks, as well as several educational facilities, and places of worship
- Ecologically sensitive receivers associated with White Bay are located immediately adjacent to the construction site.

#### 7.7.3.2 Eastern Creek

Sensitive receivers are generally located some distance from the proposal site. Sensitive receivers considered relevant to the air quality assessment include the residential area of Erskine Park about 375 metres to the west and the commercial/industrial area of Eastern Creek about 800 metres to the south and east. The nearest receivers to the north are located more than 1.7 kilometres away in Minchinbury.

### 7.7.4 Potential impacts

The main potential air quality risk associated with these works would be dust temporarily generated from the excavation, handling, placement and compaction of soils, and from exposed surfaces and stockpiled materials. The small footprint of the active work area and linear nature of the construction activity means potential impacts would be limited in extent and temporary in nature.

Potential dust impact would be temporary in nature and would be substantially reduced with the implementation of standard mitigation measures.

The main source of air emissions would be from the combustion of diesel fuel and petrol from heavy vehicles, mobile excavation machinery, and stationary combustion equipment as well as from the handling and/or on-site storage of fuel and other chemicals. The volume of emissions from construction vehicles and machinery would depend on the type of fuel used, the power output and condition of the engine, and duration of use.

Exhaust emissions generated during construction would be temporary and would not significantly contribute to emissions in the local area, given elevated background particulate matter concentrations in the locality. These emissions would be adequately managed by the implementation of mitigation measures.

The risk of mobilising airborne hazardous materials, odours or vapours could occur as a result of uncovering contaminated soils or hazardous materials (including asbestos). All potential contamination

impacts can be managed to acceptable levels with the implementation of appropriate management measures and/or remediation.

### 7.7.5 Mitigation Measures

The specific measures and requirements to address air quality impacts are outlined in Table 27.

Table 27 Air quality mitigation measures

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| All | AQ1 | The following best-practice dust management measures would be implemented during construction works:<br>• Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather<br>• Adjust the intensity of activities based on measures and observed dust levels and weather forecasts<br>• Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers<br>• Regularly inspect dust emissions and apply additional controls as required. | MCoA D1<br>EIS-REMM AQ1<br>REF-CoA AQ1<br>REF-MMM AQ1 | Site inspection reports | Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| All | AQ2 | Plant and equipment would be maintained in a proper and efficient manner. Visual inspections of emissions from plant would be carried out as part of pre-acceptance checks. | EIS-REMM AQ2<br>REF-CoA AQ3<br>REF-MMM AQ3 | Pre-acceptance check records<br>Site inspection reports | Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| All | AQ3 | The following best-practice measures would be implemented to manage airborne hazardous materials during construction:<br>• Temporary coverings or odour supressing agents would be applied | REF CoA AQ4<br>REF-MMM AQ4 | Site inspection reports | Construction | Environment Manager<br>Site Supervisor<br>Project Engineer |

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| | | to excavated areas where appropriate<br>• Removal and disposal of hazardous materials would be undertaken in accordance with the relevant requirements in the Work Health and Safety Act 2011, Work Health and Safety Regulation 2017 and any applicable guidelines. | | | | |
| All | AQ4 | The following best-practice odour management measures would be implemented during relevant construction works:<br>• The extent of opened and disturbed contaminated soil at any given time would be minimised<br>• Temporary coverings or odour supressing agents would be applied to excavated areas where appropriate<br>• Regular monitoring would be conducted during excavation to verify that no offensive odours are detected beyond the site boundary. | EIS-REMM AQ3 | Site inspection reports | Construction | Environment Manager<br>Site supervisor<br>Project Engineer |

## 7.8 Visual Amenity

Owing to the limited scope of the Project, a Visual Amenity Management Plan not identified as required in the Phasing Report required under MCoA A10.

As such, the following information has been included herein to address the management of visual amenity surrounding the Project areas:

- MCoAs are listed in Table 28
- REF CoAs are listed in Table 29
- No CEMF management requirements have been allocated
- Mitigation measures including REMMs are identified in Table 30.

Table 28 MCoA for visual amenity management

| MCoA | Requirement | Reference |
|---|---|---|
| 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. | Section 7.8.4 |
| A23 | Boundary screening required under **Condition A22** of this schedule must minimise visual impacts on adjacent sensitive land user(s). | Section 7.8.4 |
| D103 | Wayfinding information must be incorporated on temporary hoardings to guide pedestrians around ancillary facilities and enhance their understanding and experience of the locality and space. | Section 7.8.4 |
| D104 | Nothing in this approval permits advertising on any element of Stage 1 of the CSSI. | Section 7.8.4 |
| D109 | Stage 1 of the CSSI must be constructed with the objective of minimising light spill to surrounding properties including from headlights of construction vehicles. All lighting associated with the construction of Stage 1 of the CSSI must be consistent with the requirements of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces. Additionally, mitigation measures must be provided to manage any residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners. | Section 7.8.4 |
| D110 | Stage 1 of the CSSI must be constructed in a manner that minimises visual impacts of construction sites including, providing temporary landscaping and vegetative screening, minimising light spill, minimising impacts to identified significant view lines in respect of The Bays metro station construction site and incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located, wherever practicable. | Section 7.8.4 |

Table 29 REF CoAs for visual amenity management

| MCoA | Requirement | Document Reference |
|---|---|---|
| LV1 | Where feasible and reasonable, the elements within the construction site would be located to minimise visual impacts (for example storing materials and machinery behind fencing). | Section 7.8.4 |
| LV2 | Sheds would be finished in a colour which aims to minimise visual impacts, if visible from areas external to the site. | Section 7.8.4 |
| LV3 | Lighting of the sites would be orientated to minimise glare and light spill impacts on adjacent receivers in accordance with AS4282:2019. | Section 7.8.4 |

### 7.8.1 Management Objectives

The visual amenity management objectives include:

- Minimise impacts on existing landscape features as far as feasible and reasonable.
- Reduce visual impact of construction to surrounding community.

### 7.8.2 Existing Environment

The following section generally summarises the existing environment for both the Bays and Eastern Creek sites which correspond to section 15 of the EIS and Section 8.3 of the REF respectively.

A description of the criteria used to assess landscape and visual amenity impacts is included in Section 15.3.1 of the EIS.

#### 7.8.2.1 The Bays

The power supply route between The Bay Station construction site and Rozelle substation on Manning Street would pass through the low density character residential areas of Rozelle, between Mullens and Merton Streets, south-west along Darling Street. This part of the route is located within The Valley Conservation Area. This conservation area includes small industrial and warehouse buildings near White Bay, heritage character one and two storey terraces and cottages in Rozelle, and Victorian commercial terraces and corner buildings along Darling Street, forming a traditional main street.

The route continues through residential areas northwest along Waterloo, Moodie, McCleer and Callan Streets. These are predominantly low density residential areas, with heritage character one and two storey terraces and cottages, predominantly on narrow streets. The Rozelle substation is located adjacent to the Callan Park Conservation Area, a 'Historic Landscape' on both the National Trust of Australia register and State heritage register. This conservation area … 'contributes visually and socially to the local identity and sense of place' of Rozelle and has 'commanding views over Iron Cove' (NSW Heritage Inventory, 2017).

Views along the power supply route would generally be experienced by local residents, workers and visitors to Rozelle. This would include elevated and street level views from the streetscape, residences, offices, restaurants, cafes and retail outlets overlooking the route. Views is this area include areas of The Valley Conservation Area (Leichhardt Local Environmental Plan 2013), and the substation is adjacent to the Callan Park Conservation Area. Overall the views along this route were determined to be of local visual sensitivity.

#### 7.8.2.2 Eastern Creek

The site has an open, undulating character with numerous tracks across the site which appear to be informally used for unauthorised recreational off-road driving and motorcycling. There is no authorised public access to the site. There are no buildings or structures on the site, and there are some scattered trees as well as an area of the Coastal Valley Grassy Woodlands, an environmental protection area associated with Ropes Creek, which extends into the south east corner of the site.

The site is located adjacent to the Ropes Creek corridor, which encompasses 'land with scenic and landscape values'; however, it does not include any identified valuable scenic areas. An area of the Coastal Valley Grassy Woodlands does extend into the site area and has been designated as an environmental protection area. Overall, the site has a neighbourhood landscape sensitivity.

### 7.8.3 Potential Impacts

The Bays Views to construction of power supply route would include relatively small scale construction activities including trenching works within the road corridors, temporary road and footpath closures. The existing trees would be retained and protected during construction.

This work would be absorbed into views within the industrial area at White Bay, and within the main commercial areas of Rozelle as these are vehicle dominated locations with dense development and street level activity. Within the residential road corridors the construction activity would be more prominent, however, in the residential areas where there is built form of a smaller scale and less busy streets.

Overall, due to the minor scale of these works, there would be a noticeable reduction in the amenity of views from the streets and adjacent properties along the power supply route. These views are of local sensitivity and this would result in minor visual impact during construction.

#### 7.8.3.1 Eastern Creek

The site would be transformed from a predominantly open landscape to a working construction site. However, the earthworks and vegetation removal would be relatively minor, and the scale of the construction activities would be generally consistent with the adjacent working industrial areas to the east. Overall, there would be a noticeable reduction in the quality and character of this landscape, which is of neighbourhood sensitivity, and a negligible landscape impact during construction. Notwithstanding this, potential impacts during construction would be temporary in nature.

### 7.8.4 Mitigation Measures

The specific measures and requirements to address Visual Impact are outlined in Table 30.

Table 30 Visual impact mitigation measures.

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| The Bays | LV1 | The Project must be constructed in a manner that minimises visual impacts of construction sites including, providing temporary landscaping and vegetative screening, minimising light spill, minimising impacts to identified significant view lines in respect of The Bays metro station construction site and incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located, wherever practicable. | MCoA D110 | Site inspection reports | Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| All sites | LV2 | Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts (for example storing materials and machinery behind fencing). | EIS-REMM LV1<br>REF-MMM LV1<br>REF-CoA LV1 | Site inspection reports | Pre- Construction, Construction | Site supervisor<br>Project Engineer |
| The Bays | LV3 | Opportunities for the retention and protection of existing street trees and trees within the site would be identified during detailed construction planning. | EIS-REMM LV11 | Construction planning | Pre- Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| The Bays | LV4 | Existing trees to be retained would be protected prior to the commencement of construction in accordance with Australian Standard AS4970 the Australian Standard for Protection of Trees on Development Sites and Adjoining Properties. | EIS-REMM LV12 | Site inspection reports | Pre-Construction, Construction | Environment Manager<br>Site supervisor<br>Project Engineer |

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| The Bays | LV5 | The design and maintenance of construction site hoardings would aim to minimise visual amenity and landscape character impact. | EIS-REMM LV2 | Design of site hoarding<br>Site inspection reports | Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| The Bays | LV6 | Graffiti would be removed promptly from hoardings and any other aspects of construction sites. | EIS-REMM LV3 | Site inspection reports | Construction | Site supervisor |
| All Sites | LV7 | All structures (including acoustic sheds or other acoustic measures, site offices and workshop sheds) would be finished in a colour which aims to minimise their visual impact, if visible from areas external to the construction site. This finish is to be applied to all visible fixtures and fittings (including exposed downpipes). | EIS-REMM LV4<br>REF-MMM LV2<br>REF-CoA LV2 | Site inspection reports | Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| All Sites | LV8 | Lighting of the sites would be orientated to minimise glare and light spill impacts on adjacent receivers in accordance with AS4282:2019. | MCoA D109<br>EIS-REMM LV5<br>REF-MMM LV3<br>REF-CoA LV3 | Site inspection reports | Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| The Bays | LV9 | No advertising is permitted on any element of the Project | MCoA D104 | Site inspection reports | Construction | Site supervisor |
| The Bays | LV10 | Where ancillary facilities are located adjacent to sensitive receivers, boundary screening will be installed (unless otherwise agreed with sensitive receivers) to minimise visual impact. | MCoA A22<br>MCoA A23 | Site inspection reports | Construction | Site supervisor |
| The Bays | LV11 | Wayfinding information must be incorporated on temporary hoardings to guide pedestrians around ancillary facilities and enhance their understanding and experience of the locality and space. | MCoA D103 | Site inspection reports | Construction | Site supervisor<br>Environment Manager |

## 7.9 Groundwater

Owing to the limited scope of the Project, a Groundwater Management Plan not identified as required in the Phasing Report required under MCoA A10. Additionally, a Groundwater Monitoring Program was not identified as required in the Phasing Report.

As such, the following information has been included herein to address the management of visual amenity surrounding the Project areas:

- No MCoAs were allocated for the management of Groundwater
- No REF CoAs were allocated for the management of Groundwater
- No CEMF management requirements were allocated for the management of Groundwater
- Mitigation measures including REMMs are identified in Table 31.

### 7.9.1 Management Objectives

The visual amenity management objectives include:

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

### 7.9.2 Existing Environment

The following section generally summarises the existing environment for both the Bays and Eastern Creek sites which correspond to section 18 of the EIS and Section 8.9 of the REF respectively.

#### 7.9.2.1 The Bays

Investigations done as part of the EIS found that the typical groundwater level in the vicinity of the Bays site was two (2) metres below the ground surface.

There is potential for groundwater to contribute to streamflow (baseflow) and surface water bodies in low lying areas or deeply incised channels. The closest waterbodies to the Bays site are Whites Creek and the Parramatta River/ White Bay, these waterbodies have the potential for groundwater to contribute to baseflow.

The interaction between groundwater and surface water is expected to be limited to the following:

- Surface water infiltration to groundwater
- Discharge from groundwater to surface watercourses and waterbodies
- Leakage from surface watercourses to groundwater

Investigations into the groundwater quality in the Project area was undertaken as part of the EIS. The results of this assessment found the following:

- pH of groundwater neutral to slightly acidic,
- groundwater was fresh to saline
- groundwater could have elevated iron and manganese levels .

There were no groundwater depended ecosystems identified as existing at The Bays site.

#### 7.9.2.2 Eastern Creek

The Eastern Creek, groundwater levels measured in six bores across the groundwater study area ranged between one metre below ground level and over 5.5 metres below ground level. The recorded groundwater levels indicated a westerly and north-westerly direction of flow.

The groundwater on the proposal site is generally:

- near neutral pH, oxygenated,
- moderate to high conductivity and
- moderately saline (he conductivity is indicative of the salinity potential in the landscape).

It is possible that groundwater at the proposal site is contaminated from historical and surrounding site use.

There were no mapped aquatic groundwater dependent ecosystems identified in the REF.

### 7.9.3 Potential Impacts

#### 7.9.3.1 Groundwater use

Groundwater is not widely used in the Project areas, as surface water supplies are adequate for most operations. A number of boreholes were identified in the EIS and REF however no boreholes in the Project areas have been identified as existing within the predicted drawdown zone of influence during construction. Further, based on the scope of works being generally shallow excavation, impacts on the groundwater availability are not expected.

#### 7.9.3.2 The Bays

##### *7.9.3.2.1 Groundwater Level Changes*

The EIS noted that minor short-term dewatering may be required to undertake adjustments for utilities in the immediate vicinity of construction sites.

It is anticipated that the groundwater inflow to excavations for utility adjustments would generally be relatively minor compared to those experienced by the station or shaft excavations. Additionally, Excavation of saline soils and bedrock, and re-use as fill could result in the release of additional salts in groundwater.

Dewatering for utility adjustments is therefore not likely to cause impacts to groundwater beyond those impacts discussed above relating to station/service facility excavations.

##### *7.9.3.2.2 Groundwater Quality*

The EIS noted that at the Bays site groundwater may be impacted by heavy metals, hydrocarbons (TRH, BTEX, PAH), VOC, ASS/PASS, and PFAS. Increased potential for impact is likely to be associated with the ingress of contaminated groundwater into excavation voids and management of dewatering during construction.

#### 7.9.3.3 Eastern Creek

##### *7.9.3.3.1 Groundwater Level Changes*

Overall, the proposal is unlikely to intercept the water table or result in any changes to groundwater levels. Excavation would involve a maximum depth of about two metres and is anticipated to generally occur in areas of relatively higher elevation with deeper depths to groundwater. As a result, there is not anticipated to be any adverse environmental impact or drawdown at existing licenced bores.

Other potential groundwater impacts during construction include:

- Construction of hardstand areas and modifications to ground conditions during earthworks have the potential to increase runoff and reduce groundwater recharge, however any potential change would be negligible considering the relative size of the proposal site
- Earthworks and imported fill would likely temporarily increase soil permeability and groundwater recharge in filled areas during bulk earthworks. However, this contribution would be negligible given that:
- Surface water would be directed away from earthworks and other construction areas
- Underlying in-situ soils and bedrock are of low permeability
- Filled areas would ultimately be compacted and sealed.

#### *7.9.3.3.2 Groundwater Quality*

The following construction activities have the potential to lead to altered groundwater quality or contamination:

- Excavation of saline soils and bedrock, and re-use as fill could result in the release of additional salts in groundwater
- Accidental spills or leakages of hazardous materials (such as fuels, lubricants and hydraulic oils) have the potential to result in groundwater contamination through runoff and subsequent recharge.

### 7.9.4 Mitigation Measures

The specific measures and requirements to address Groundwater impacts are outlined in Table 31.

Table 31 Groundwater mitigation measures.

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| The Bays | GW1 | 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) | EIS-REMM SSWQ1 | Soil testing reports | Construction | Environment Manager<br>Project Engineer |
| All sites | GW2 | Prior to ground disturbance in high probability salinity areas, testing would be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils would not be reused or it would be managed in accordance with Book 4 Dryland Salinity: Productive Use of Saline Land and Water (NSW DECC 2008). Erosion controls would be implemented in accordance with Blue Book (Landcom, 2004). | EIS-REMM SSWQ2<br>REF-MMM SW1 | Soil testing reports | Pre- Construction, Construction | Site supervisor<br>Project Engineer |

| Applicable site | ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|---|
| All Sites | GW3 | Erosion and sediment measures would be implemented at all construction sites in accordance with the principles and requirements in Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom 2004) and Volume 2D (NSW Department of Environment, Climate Change and Water 2008), commonly referred to as the 'Blue Book'. Additionally, any water collected from construction sites would be appropriately treated and discharged to avoid any potential contamination or local stormwater impacts.<br>Temporary sediment basins would be designed in accordance with Managing Urban Stormwater: Soils and Construction and Managing Urban Stormwater, Volume 2D: Main Road Construction (DECC, 2008). | EIS-REMM SSWQ3 | Construction planning | Pre- Construction | Environment Manager<br>Site supervisor<br>Project Engineer |
| All Sites | GW4 | If water is to be discharge or reused on site, this would be done in accordance with the Sydney Metro Water Discharge and Reuse Procedure (Appendix D of the SWMP). All water will be tested (and treated if required) prior to discharge from the site in order to determine compliance with relevant approvals and licence requirements (See Appendix D of SWMP for criteria). | Additional requirement/ best practice | Discharge permit | Construction | Environment Manager<br>Site supervisor |

## 7.10 Bushfire Management

The following requirements apply to the Eastern Creek site only.

Table 32 REF mitigation measures for bushfire management

| REF REMM | Requirement | How addressed |
|---|---|---|
| BF2 | Vulnerable buildings and/or critical assets would be constructed to appropriate BAL in accordance with the Australian Standard for the Construction of Buildings in Bushfire Prone Areas (AS3959). | The only buildings used at this site will be demountable buildings for site office and worker facilities, as described in Section 4.2.<br>These buildings are pre-fabricated, temporary and not considered vulnerable in the context of this requirement. |
| BF5 | Bushfire Emergency Management and Evacuation Plans would be developed for the construction and operation of the proposal. The bushfire evacuation procedures would be completed in accordance with NSW Rural Fire Service Guide to Developing A Bushfire Emergency Management Plan and meet the requirements of Australian Standard AS 3745-2010 – Planning for Emergencies in facilities | A Bushfire Emergency Management and Evacuation Plans will be developed as part of the safety management document for these works; separate to the environmental management documentation. |
| BF6 | Activities that generate sparks or excessive heat would be minimised when a total fire ban is declared by Rural Fire Service | Works are proposed to be undertake during the winter season, when likelihood of a fire ban is low. In any case, this requirement will be included into the relevant safety documentation for these works; separate to the environmental management documentation. |

## 7.11 Traffic Management

The following requirements apply to the Eastern Creek site only; traffic, parking and access management are addressed for The Bays as described in Section 2.2.

Table 33 REF mitigation measures for traffic management

| REF REMM | Requirement | How addressed |
|---|---|---|
| T1 | In the event of a traffic-related incident, coordination would be carried out with Transport Coordination and/or other parts of Transport for NSW. | This requirement will be included on the Traffic Control Plans, prepared by a qualified traffic controller, and provided to TfNSW Customer Journey Planning for the purpose of ROL application for works at Eastern Creek. |
| T2 | Access to properties for emergency vehicles would be provided at all times. | No property access impact is required for the purpose of the works. |
| T3 | All trucks would enter and exit the proposal site in a forward direction, where feasible and reasonable. | This is as indicated on the Traffic Guidance Scheme documents prepared for the worksite. |

| REF REMM | Requirement | How addressed |
|---|---|---|
| T4 | All staff parking would be provided on-site and not on surrounding local streets. | Vehicle parking has been provided for in the internal site layout of this site. |
| T5 | The driver induction process would include safety awareness in relation to all road users, particularly pedestrians and cyclists at the proposal site access point at Archbold Road/Lenore Drive during construction. | All persons are required to complete online induction which discusses traffic risks, a site-specific induction will be required to address Eastern Creeks Specific requirements. |

In addition to the above controls, the following management measures will be implemented:

- Traffic control arrangements are discussed with stakeholders at TCG meetings, and with adjoining Sydney Metro West contractors as part of routine coordination meetings.
- Traffic Guidance Schemes (TGS) along with detailed notes are prepared for the purpose of Road Occupancy Licence (ROLs) applications and are implemented under the relevant ROL once granted.
- ROLs applications will be received for works impacted the adjacent RMS road (Lenore Drive) and progressively renewed during the project duration until all works are completed.
- Activity specific consultation will be undertaken when required with adjacent projects prior to activation of certain ROLs to ensure no conflicting traffic control arrangements.

## 7.12 Property and utilities management

The following requirements apply to works at The Bays site only.

Table 34 Mitigation measures for property and utilities management at The Bays

| ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|
| PU1 | 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 Preconstruction 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. | MCoA D60 | | | Project Manager<br>Project Engineer<br><br>Note; Sydney Metro responsible for building condition surveys as identified in accordance with the Phasing Report |

| ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|
| PU2 | Condition surveys of all items for which condition surveys were undertaken in accordance with Condition D60 of this schedule must be undertaken by a suitably qualified and experienced person after completion of the work identified in Condition D60 of this schedule. The results of the surveys must be documented in a Post-construction Condition Survey Report for each item surveyed. Copies of Post-construction Condition Survey Reports must be provided to the landowners of the items surveyed, and no later than three (3) months following the completion of the work that could impact on the subject surface / subsurface structure unless otherwise agreed by the Planning Secretary. | MCoA D61 | Condition Surveys | Pre-Construction | Project Manager<br>Project Engineer<br><br>Note; Sydney Metro responsible for building condition surveys as identified in accordance with the Phasing Report |
| PU3 | 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. | MCoA D62 | Site inspection reports | Pre-Construction, Construction | Project Manager |
| PU4 | Either the affected property owner or the Proponent may refer unresolved disputes arising from potential and/or actual property impacts to the IPIAP for resolution. All costs incurred in the establishing and implementing of the panel must be borne by the Proponent regardless of which party makes a referral to the IPIAP. The findings and recommendations of the IPIAP are final and binding on the Proponent. | MCoA D63 | IPIAP findings | Construction | Quickway<br>Sydney Metro |

| ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|
| PU5 | 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:<br>(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;<br>(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<br>(c) investigating complaints received from the Community Complaints Mediator or the Project communication team relating to utility work and providing a response as required. | MCoA D102 | Evidence of appointment of Utility coordination manager | Pre-Construction, Construction | Sydney Metro<br>Utility Coordination Manager |
| PU6 | 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 | EIS-REMM HA3 | Evidence of consultation with utility providers | Construction | Project Manager<br>Project Engineer |
| PU7 | Except where required for subsequent construction activities associated with future stages of the Concept, temporary use areas for construction purposes would be stabilised and appropriately rehabilitated as soon as feasible and reasonable following completion of construction. This would be carried out in consultation with the relevant landowner. | EIS-REMM LU1 | Direction from Sydney Metro about what areas need to be rehabilitated<br>Rehabilitated areas | Construction | Site supervisor<br>Environmental Manager<br>Project Engineer |

| ID | Measure / Requirement | Source of req. | Evidence | When to implement | Responsibility |
|---|---|---|---|---|---|
| PU78 | 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. | MCoA D101 | Utilities survey | Pre-Construction | Environmental Manager<br>Project Engineer<br>Project Manager |
| PU9 | Stage 1 of the CSSI must be designed and constructed with the objective of minimising impacts to, and interference with, third party property and infrastructure, and that such infrastructure and property is protected during construction. | MCoA D58 | Site inspection reports | Pre-Construction, Construction | Project Manager<br>Design |
| PU10 | The utilities and services (hereafter “services”) potentially affected by construction must be identified to determine requirements for diversion, protection and / or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. Disruption to services resulting from construction must be avoided, wherever possible, and advised to customers where it is not possible. | MCoA D59 | Evidence of consultation with service providers | Pre-Construction, Construction | Project Manager<br>Project Engineer |

# Appendix A Quickway Environmental Policy

# Appendix B Environmental Legal Requirements Register

# Appendix C Environmental Control Maps (ECMs)

# Appendix D Sydney Metro Environmental Incident and Non-Compliance Reporting Procedure

# Appendix E Weed Management Procedure

# Appendix F Waste and Spoil Management Plan

# Appendix G Unexpected Heritage Finds and Humans Remains Procedures

# Appendix H Soil and Water Management Plan

# Appendix I Noise and Vibration Management Plan

# Appendix J DPIE Incident and Non-Compliance Notification Requirements

# Appendix K Risk Assessment Workshop

# Appendix L Pre-Clearing Procedure

# Appendix M Minor Ancillary Facility Area O1