

Sydney Metro Western Sydney Airport Power Enabling Works

Construction Environmental Management Plan (CEMP)

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Document Endorsement

Contents

1. Introduction	10
1.1 Background.....	10
1.2 Statutory Context	10
1.3 Sydney Metro Construction Environmental Management Framework	11
2. Scope	11
2.1 Environmental Management System overview.....	12
2.2 CEMP Role	12
3. Purpose and objectives	15
3.1 Purpose	15
3.2 Objectives.....	25
3.3 Targets	25
3.4 Hold Points	26
4. Project Description.....	31
4.1 Power Enabling Works.....	31
4.2 Ancillary facilities.....	57
5. Review and Approval	63
5.1 Internal consultation.....	63
5.2 External consultation.....	63
5.3 Approval	64
6. Environmental Management Plan.....	64
6.1 Planning.....	64
6.2 Regulatory requirements and compliance	64
6.3 Resources, responsibility, and authority	67
6.4 Stakeholder relationships.....	75
6.5 Competence, training and awareness	76
6.6 Working Hours	80
6.7 Communication	81
6.8 Emergency and incident response	83
6.9 Monitoring, inspections and auditing	85
6.10 Records of environmental activities.....	88
6.11 Management review.....	90
6.12 Document updates.....	90
7. Environmental Management	92
7.1 Flora and Fauna Management	92
7.2 Waste and Recycling	106
7.3 Soil and Water Quality	106
7.4 Noise and Vibration.....	123
7.5 Non-Aboriginal Heritage.....	123
7.6 Aboriginal Heritage	131
7.7 Air Quality Management.....	131

7.8	Visual Amenity	140
7.9	Traffic, Transport and Access Management.....	147

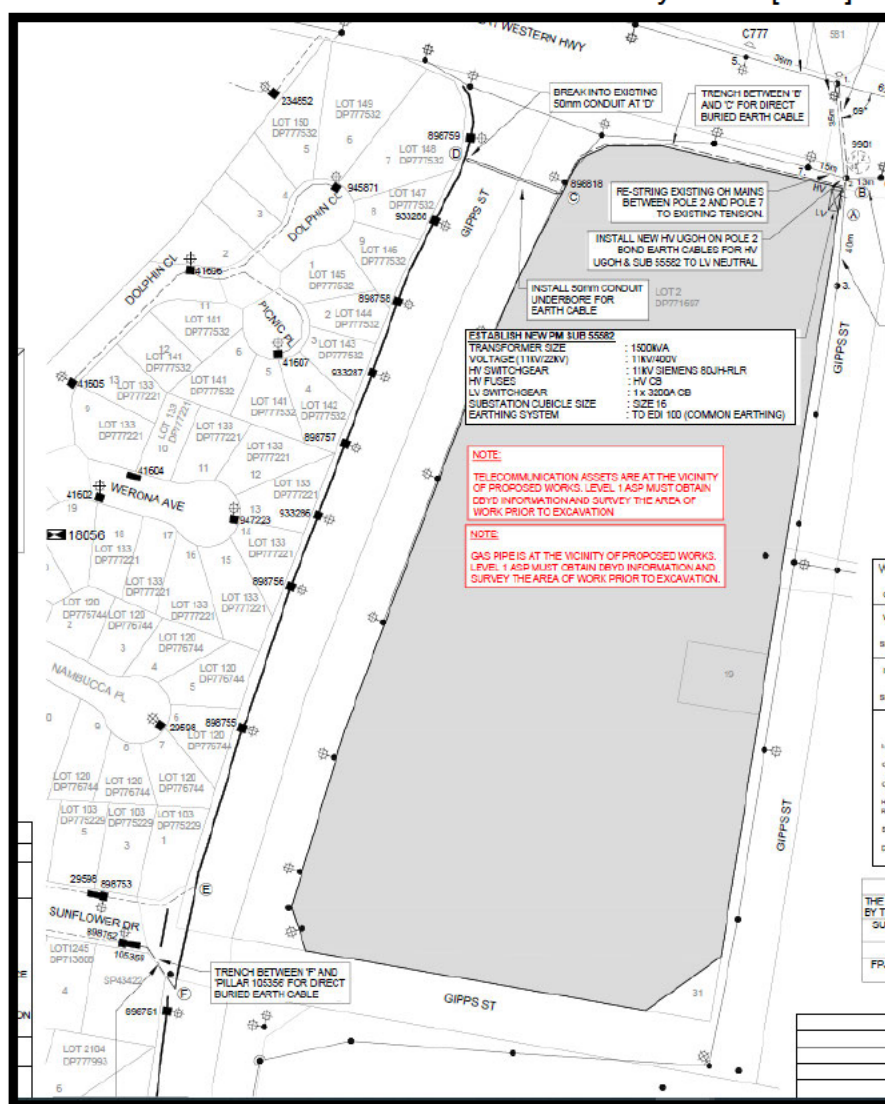
Tables

Table 3-1 MCoA requirements for CEMP – applicable to The Western Sydney Airport Power Enabling Works package	16
Table 3-2 CEMF requirements for CEMP – applicable to The Western Sydney Airport power enabling works package.....	21
Table 3-3 Hold Points identified in Section 3.10 of the CEMF	26
Table 3-4 Environmental Objectives	27
Table 4-1 Description of construction activities	35
Table 4-2 Proposed Construction Duration	37
Table 5-1 CEMP consultation and approval requirements as identified in the Project Staging Report	64
Table 6-1 Environmental approvals, permits and licences relevant to the delivery of the Project.....	65
Table 6-2 Internal (Quickway) roles summary of environmental responsibilities.	73
Table 6-3. Initial Training Needs Matrix.	78
Table 6-4 Audits and Compliance Review summary.....	86
Table 7-1 Ministers CoAs relevant to biodiversity management.....	93
Table 7-2 CEMF requirements relevant to biodiversity management.....	94
Table 7-3 Relevant performance outcomes	96
Table 7-4 Summary of fish habitat and waterway classifications within the off-airport study area	98
Table 7-5 Biodiversity mitigation measures	100
Table 7-6 Minister's MCoA relevant to soil and water management.....	106
Table 7-7 CEMF requirements relevant to soil and water management.....	108
Table 7-8 Relevant performance outcomes	110
Table 7-9 Contamination Areas of Environmental Concern (AEC).....	112
Table 7-10 Potential impacts to environmental factors.....	116
Table 7-11 Soil and water mitigation measures	118
Table 7-12 MCoAs relevant to non-Aboriginal heritage management	123
Table 7-13 CEMF requirements relevant to non-Aboriginal heritage management	124
Table 7-14 Relevant performance outcomes	125
Table 7-15 Heritage items in proximity to the Power supply route.....	126
Table 7-16 Potential impacts to heritage items adjacent to works.....	129
Table 7-17 Non-Aboriginal heritage mitigation measures	130
Table 7-18 Minister's MCoA relevant to air quality management	131
Table 7-19 CEMF requirements relevant to air quality management	132
Table 7-20 Background air quality data	134
Table 7-21 Summary of dust risk assessment for power supply routes (EIS, Chapter 22).	136
Table 7-22 Air quality mitigation measures	137
Table 7-23 MCoA for visual amenity management	140
Table 7-24 CEMF requirements for visual amenity management.....	140
Table 7-25 Landscape Character of areas surrounding power supply routes.....	142
Table 7-26 Visual impact mitigation measures.....	144
Table 7-27 Ministers CoAs relevant to traffic, transport and access management	147

Table 7-28 CEMF requirements relevant to traffic, transport and access management	149
Table 7-29 Relevant performance outcomes	150
Table 7-30 Base year intersection performance	153
Table 7-31 Traffic, transport and access mitigation measures	155

Figures

Figure 1 Environmental management plan structure	14
Figure 2 Overview of Portion 1 – Patons Lane Undergrounding [PLU] Power Supply Route	38
Figure 3 Patons Lane - Access to western portion of works area	39
Figure 3 Overview of Portion 2 – Claremont Meadows Services Facility Power [CMP] Power Supply	



Route 40

Figure 4 Overview of Portion 3 – Orchard Hills Power [OHP] Power Supply Route	41
Figure 5 Overview of Portion 4 – Airport Business Park Power [ABP] Power Supply Route	44
Figure 6 Overview of Portion 5 – Precast Facilities Power [PFP] Power Supply Route	53
Figure 7 Overview of Portion 6 – Aerotropolis Power [AEP] Power Supply Route	54
Figure 8 Indicative location of Ancillary Facility Area SA-02	59
Figure 9 Indicative Ancillary Facility Area SA-02 site layout	60

Figure 10 Indicative location and arrangement of the Lawson Road Ancillary Facility.....	61
Figure 11 Stakeholder Relationships and communication channels for environmental documentation and management.....	75
Figure 12 Portion 2 - Claremont Meadows Services Facility Power [CMP]	113
Figure 13 Portion 3 - Orchard Hills Power [OHP].....	114
Figure 14 Portion 4 - Airport Business Park Power [ABP].....	114
Figure 15 Portion 6 - Aerotropolis Power [AEP].....	115
Figure 16 Heritage items in proximity to Portion 2 - Claremont Meadows Services Facility Power [CMP]	127
Figure 17 Heritage items in proximity to Portion 6 - Aerotropolis Power [AEP]	128

Appendices

Appendix A Quickway Environmental Policy	163
Appendix B Environmental Legal Requirements Register	164
Appendix C Environmental Control Maps (ECMs)	165
Appendix D Sydney Metro Environmental Incident and Non-Compliance Reporting Procedure	166
Appendix E Weed Management Procedure	167
Appendix F Waste and Recycling Management Plan.....	168
Appendix G Unexpected Heritage Finds and Humans Remains and Exhumation Management Procedures	169
Appendix H Noise and Vibration Management Plan	170
Appendix I DPIE Incident and Non-Compliance Notification Requirements	171
Appendix J Risk Assessment Workshop.....	173
Appendix K Sydney Metro Aboriginal Cultural Heritage Management Plan	174
Appendix L Sydney Metro Discharge and Reuse Procedure.....	175
Appendix M Unexpected Contaminated Land and Asbestos Finds Procedure.....	176
Appendix N Compliance Tables – MCoA, REMMs and CEMF	177

Glossary / Abbreviations

Abbreviation	Description / Definition
ASS	Acid Sulfate Soils
AS/NZS	Australia/New Zealand Standards
CEMP	Construction Environmental Management Plan
CNVS	Construction Noise and Vibration Standard (Sydney Metro Western Sydney Airport).
Contractor	Quickway Constructions Pty Ltd
DECC	Former Department of Environment and Climate Change (NSW) now NSW Office of Environment and Heritage.
DPIE	NSW Department of Planning, Industry and Environment
DPI (Water)	NSW Department of Primary Industries (Water) (Former Office of Water)
EIS	Sydney Metro - Western Sydney Airport Environmental Impact Statement
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.
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	<i>NSW Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act, 1999</i>
EPL	NSW Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> .
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	<p>This is harm that:</p> <p>(a) involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial or</p> <p>(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</p>

Abbreviation	Description / Definition
	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.
NVMP	Noise and Vibration Management Procedure
OCCS	Overarching Community Communications Strategy
PASS	Potential Acid Sulfate Soils
PIRMP	Pollution Incident Response Management Plan
PMF	Probable Maximum Flood
PoEO Act	<i>NSW Protection of the Environment Operations Act 1997</i>
Principal, the	Sydney Metro
Proponent, the	The person identified as the proponent in Schedule 1 of the Infrastructure Approval (Sydney Metro)
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, Industry and Environment
SEMP	Site Establishment Management Plan
SMWSA	Sydney Metro Western Sydney Airport Project
SSI	State Significant Infrastructure
SWMP	Soil and Water Quality Management Plan
the Project	SMWSA Power Supply Works
TfNSW	Transport for NSW

1. Introduction

1.1 Background

The Sydney Metro Western Sydney Airport (SMWSA) project is located within the Penrith and Liverpool local government areas and will provide a new 23km long metro railway between St Marys in the north and the Aerotropolis Core precinct in the south, via Western Sydney International. The project will provide a connection between the existing Sydney Trains suburban rail network at St Marys and six new metro stations, including two at Western Sydney International and one at the Aerotropolis. The stations would play a key role in the development of future precincts in the Western Parkland City.

SMWSA line would be located partially underground within tunnels. Excavation of the tunnels and underground stations will be undertaken by Tunnel Boring Machines (TBMs) 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.

High Voltage power supply needs to be provided from existing above ground electricity infrastructure to enable the TBM to be energised and commissioned. High Voltage Power will also be required to be supplied to multiple sites for utilisation throughout construction and/or operation.

Sydney Metro (SM) (the Proponent) has engaged Quickway to complete the high voltage connections as described below:

- power supply for the tunnel boring machines and construction power from Claremont Meadows Zone Substation to the Orchard Hills site with associated underbore under the M4 Motorway at Kent Road;
- power supply for Tunnel boring machines and construction power from Kemps Creek Zone Substation to the Airport Business Park site with associated under bores under South Creek and Badgerys Creek;
- construction power supply for the below sites:
 - Claremont Meadows Services Facility;
 - Pre-cast facilities (Badgerys Creek); and
 - Aerotropolis.

1.2 Statutory Context

1.2.1 Off Airport

The Project was declared Critical State Significant Infrastructure (CSSI) under the EP&A Act and was subject to assessment and approval by the Minister for Planning and Public Spaces (or delegate) under Division 5.2 of the EP&A Act.

An EIS was prepared in accordance with the Secretary's Environmental Assessment Requirements, dated July 2020 (SSI-10051). The EIS was placed on public exhibition for a period for six weeks, from 21 October to 2 December 2020.

A submissions report and amendment report were prepared and lodged with the NSW Department of Planning, Industry and Environment (DPIE). The Sydney Metro - Western Sydney Airport EIS was approved on 26 July 2021 with Planning Approval stating Approval Conditions applicable to the Project.

In relation to the area north of the Western Sydney International Airport site, a referral was made to the Commonwealth in accordance with Part 7 of the EPBC Act. On 14 July 2020, the delegate of the

Commonwealth Environment Minister determined that the Project is a controlled action and requires approval under Part 9 of the EPBC Act (EPBC 2020/8687). The relevant controlling provisions are:

- listed threatened species and communities (sections 18 & 18A); and
- Commonwealth land (sections 26 & 27A).

Final EPBC Approval was granted by the Minister for Environment 03 January 2021 inclusive of Conditions of Approval applicable to the Project.

1.2.2 On Airport

Not described within this Document. Refer to On-Airport CEMP for information.

1.3 Sydney Metro Construction Environmental Management Framework

The Sydney Metro Western Sydney Airport 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 – Western Sydney Airport EIS and respective MCoA make commitments to implement the CEMF.

2. Scope

The scope of this Plan is to describe how Quickway propose to manage environmental issues during construction of the Project within all area categorised as 'Off Airport' only. Management of works within areas categorised as 'On Airport' are described within the On Airport CEMP and Sub-plans developed and issued to Quickway by Sydney Metro.

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 ([Appendix A](#)) and was developed in accordance with Section 5.2 of ISO 14001:2015. The CEMP has been developed to:

- Cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Quickway'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.

2.1 Environmental Management System overview

This CEMP has been written in accordance with the Quickway Corporate and Project Specific 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 Project Specific Environment and Sustainability Management System (E&SMS) 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 project-based Environment and Sustainability Management System (E&SMS). The E&SMS:

- i. Is consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2016;
- ii. Is supported by a process for identifying and responding to changing legislative or other requirements;
- iii. Includes processes for assessing design or construction methodology changes for consistency against the planning approvals;
- iv. Includes processes for tracking and reporting performance against sustainability and compliance targets;
- v. Includes a procedure for the identification and management of project specific environmental risks and appropriate control measures; and
- vi. Is consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment.

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. The 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.

Section 4.3.3 and Table 4 of the SMWSA Staging Report (Ver 4.0) describes the applicability of CEMP Sub-plans for different risk categories of works. As the Power Enabling Works package has been assessed as having a residual Low Risk in Appendix F of the Staging Report, no Sub-plans are listed as required for the package and management of all environmental aspects is able to be incorporated into the CEMP main document. Due to the complexity of the following environmental aspects, and for ease of implementation, the following sub-plans have been prepared as an Appendix to the main CEMP.

- Noise and Vibration Sub-plan
- Waste and Recycling Sub-Plan.

Each respective Sub-Plan chapter 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.

The requirement to prepare management plans for the following environmental aspects is specifically excluded from Quickway's Scope as stated in Table 4 of the Staging Report, and states the following aspects are to be addressed as chapters within this CEMP:

- Soil and Water
- Non-Aboriginal Heritage
- Flora & Fauna / Biodiversity
- Air Quality
- Visual Amenity

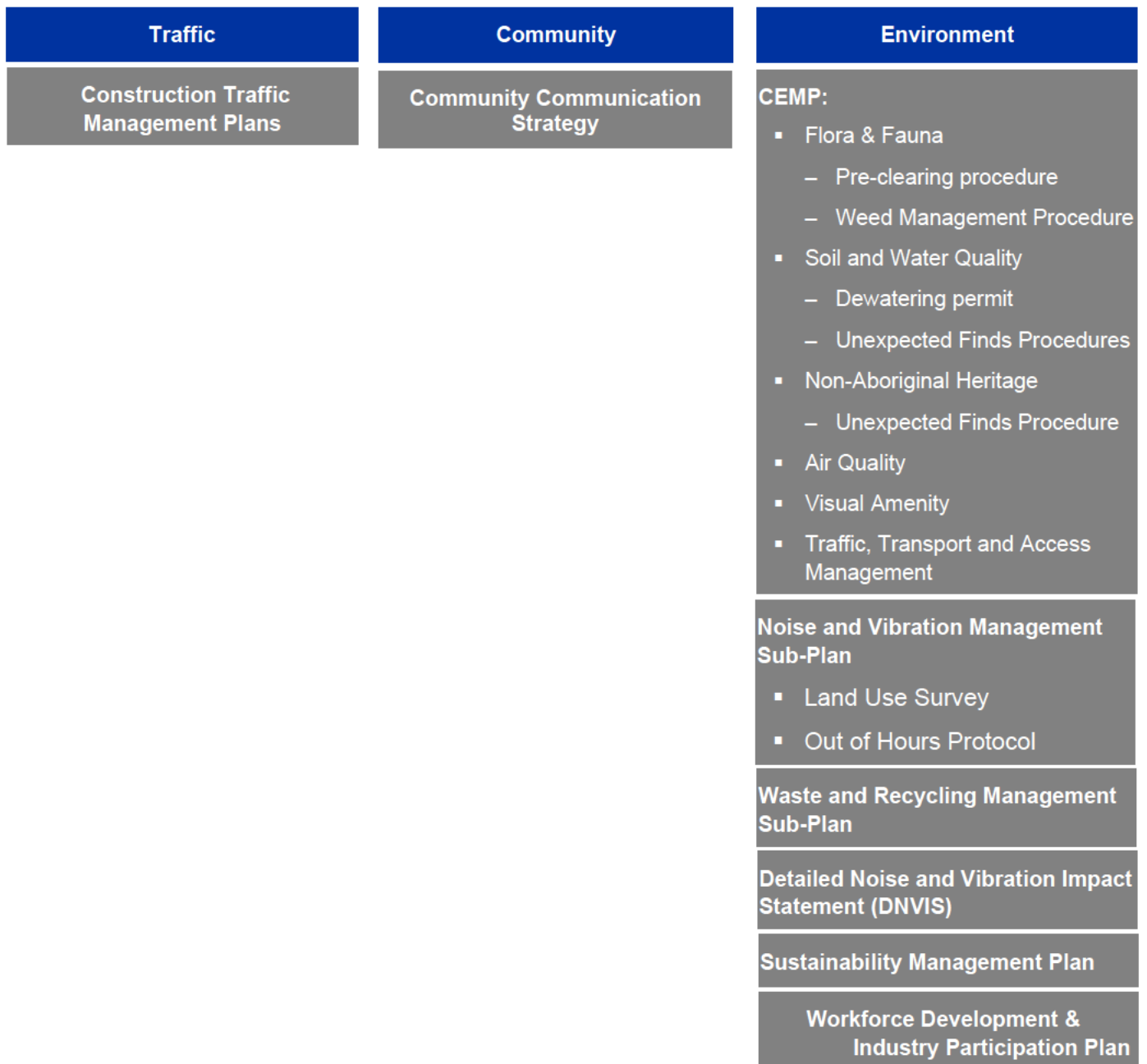
In regard to Aboriginal Heritage management, Quickway will comply with and implement the requirements of the Sydney Metro Western Sydney Airport Aboriginal Cultural Heritage Management Plan ([Appendix K](#)) for the duration of construction in accordance with MCoA E31. Figure 1 provides a diagrammatic overview of the management plan structure.

Figure 1 Environmental management plan structure

Input - Project Requirements:



Output - Management Documents:



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) and the Sydney Metro Western Sydney Airport Construction Environmental Management Framework (CEMF) requirements as allocated in the Staging Report to the Project, Rev 4.0 (24 August 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).

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

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

The Staging Report (Appendices B, D and E) provide applicable MCoA, REMMs and applicable CEMF requirements respectively based on the scope of the works included in the Advanced enabling works package. As such, the relevant to this CEMP identified requirements of this approval (known as the Allocations) and where they are met in this CEMP are shown in [Table 3-1](#) and [Table 3-2](#).

Table 3-1 MCoA requirements for CEMP – applicable to The Western Sydney Airport Power Enabling Works package

MCoA	Requirement	Reference
A6	<p>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:</p> <ul style="list-style-type: none"> (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; (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; (d) outline of the issues raised by the identified party(s) and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed. 	As described in Section 4.3.4 of the Staging Report, this Plan is to be endorsed by the ER.
A17	<p>Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 can only be established and used in each case if:</p> <ul style="list-style-type: none"> (a) they are located within or immediately adjacent to the Construction Boundary of the CSSI; and (b) they are not located next to sensitive land use(s) (including where an access road is between the facility and the receiver), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and (c) they have no impacts on Heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and (d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts. <p>Note: This condition does not apply to any ancillary facilities or work that are exempt or complying development, established before the commencement of construction under this approval or minor ancillary facilities established under Condition A22.</p>	Section 4.2

MCoA	Requirement	Reference
A18	<p>Before establishment of any ancillary facility (excluding exempt or complying development, minor ancillary facilities determined by the ER to have minimal environmental impact and those established under Condition A22 and those considered in an approved CEMP), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the ancillary facilities. The Site Establishment Management Plan must be prepared in consultation with the Relevant Council(s) and relevant government agencies. The Site Establishment Management Plan must include:</p> <ul style="list-style-type: none"> (a) a description of activities to be undertaken during establishment of the ancillary facility (including scheduling and duration of work to be undertaken at the site); (b) figures illustrating the proposed operational site layout and the location of the closest sensitive land use(s); (c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of site establishment work; (d) details of how the site establishment activities described in subsection (a) of this condition will be carried out to: <ul style="list-style-type: none"> (i) meet the performance outcomes stated in the documents listed in Condition A1; and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and (e) a program for monitoring the performance outcomes, including a program for construction noise monitoring, where appropriate or required. <p>Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each ancillary facility.</p>	Section 4.2
A21	<p>The use of ancillary facility for construction must not commence until the CEMP required by Condition C1 relevant CEMP Sub-plans required by Condition C5 and relevant Construction Monitoring Programs required by Condition C13 have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable).</p> <p>Note: This condition does not apply to Condition A22 or where the use of an ancillary facility is Low Impact Work or for Low Impact Work.</p>	Section 4.2

MCoA	Requirement	Reference
A22	<p>Lunch sheds, office sheds, portable toilet facilities and the like, can be established and used where they have been assessed in the documents listed in Condition A1 or satisfy the following criteria:</p> <ul style="list-style-type: none"> (a) are located within or adjacent to the Construction Boundary; and (b) have been assessed by the ER to have - <ul style="list-style-type: none"> (i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the ICNG, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and (ii) minimal environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and Heritage items beyond those already approved under other terms of this approval. 	Section 4.2
A23	Boundary screening must be erected around ancillary facilities that are adjacent to sensitive land use(s) for the duration that the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners.	Section 4.2
A28	Works must not commence until an Environmental Representative (ER) has been approved by the Secretary and engaged by the Proponent.	Section 6.3.1
A32	<p>For the duration of the work until the commencement of operation, or as agreed with the Planning Secretary, the approved ER must:</p> <ul style="list-style-type: none"> (j) consider any minor amendments to be made to the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs without increasing impacts to nearby sensitive land use(s), and are consistent with the terms of this approval and the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; 	Section 6.3.1
A33	<p>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 A32 (including preparation of the ER monthly report), as well as:</p> <ul style="list-style-type: none"> (a) the Complaints Register (to be provided on a weekly basis or as requested); and (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 6.3.1

MCoA	Requirement	Reference
A36	Independent Audits of the CSSI must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (DPIE, 2020).	Sydney Metro will organise Independent Audits of the Project. Quickway will be available to be involved in any independent audit as required.
A41	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. 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 6.8.2.3
A44	The Planning Secretary must be notified in writing via the Major Projects website within seven (7) days after the Proponent becomes aware of any non-compliance with the terms of this approval.	Section 6.8.2.4
A45	A non-compliance notification must identify the CSSI (including the application number for it), set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 6.8.2.4
B2	A Complaints Management System must be prepared and implemented before the commencement of any work and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the CSSI.	Section 6.7.4
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 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	Section 3.1 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. Note: The Planning Secretary will consider the assessment of the predicted level of environmental risk and potential level of community concern required under Condition A11(e) when deciding whether any CEMP's may be endorsed by the ER.	Section 5.3

MCoA	Requirement	Reference
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 staged no later than one (1) month before the commencement of that stage. 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.	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 staged no later than one (1) month before the commencement of that stage.	Section 5.3
C5	<p>Of the CEMP Sub-plans required under Condition C1, 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 (as required by Condition A6) must be provided with the relevant CEMP Sub-plan when submitted to the Planning Secretary / ER (whichever is applicable). 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.</p> <p>Required CEMP Sub-plan Relevant government agencies to be consulted for each CEMP Sub-plan</p> <p>a) Noise and Vibration - Relevant Councils and WaterNSW (in relation to its assets)</p> <p>b) Flora and Fauna- DPIE EES, DPI Fisheries, and Relevant Councils</p> <p>c) Soil and Water- DPI Fisheries, and Relevant Councils</p> <p>d) Non-Aboriginal heritage- Relevant Councils, WaterNSW and Heritage NSW</p> <p>Note: CEMP Sub-plan(s) may reflect the construction of the project through geographical activities, temporal activities or activity based staging.</p>	<p>Table 4 of the staging report stipulates that none of the sub-plans listed below are required for AEW – Power.</p> <p>Sub-plans have been developed voluntarily to provide content. No consultation required.</p>
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.	Section 5.3

Table 3-2 CEMF requirements for CEMP – applicable to The Western Sydney Airport power enabling works package.

CEMF Ref.	Requirement	Reference
3.1 a)	Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2016.	Section 2.1
3.1 b)	Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will: <ul style="list-style-type: none"> i. Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2016; ii. Be supported by a process for identifying and responding to changing legislative or other requirements; iii. Include processes for assessing design or construction methodology changes for consistency against the planning approvals; iv. Include processes for tracking and reporting performance against sustainability and compliance targets; v. Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and vi. Be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment. 	Section 2.1
3.2 a)	Principal Contractors are required to prepare and implement a Sustainability Management Plan (SMP) relevant to the scale and nature of the Project Works.	SuMP
3.3 a)	The Workforce Development and Industry Participation Plan will address and detail: <ul style="list-style-type: none"> i. The proposed response to State and Commonwealth requirements including but not limited to: <ul style="list-style-type: none"> o NSW Aboriginal Participation in Construction Policy o NSW Infrastructure Skills Legacy Program o Australian Jobs Act – Australian Industry Participation Plan o Western Sydney City Deal ii. Indigenous Participation Plan – National Partnerships Agreement Proposed appropriately skilled key personnel to support delivery of the workforce development and industry participation requirements; iii. Implementation approach, processes and systems to ensure delivery and reporting of workforce development and industry participation priority areas: 	WDIPP

CEMF Ref.	Requirement	Reference
3.4 c)	<input type="checkbox"/> Jobs and Industry Participation; <input type="checkbox"/> Skills Development; <input type="checkbox"/> Diversity and Inclusion including Aboriginal Participation; and <input type="checkbox"/> Inspiring Future Talent.	
	Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their off airport 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. The CEMP will address the specific requirements of scope of works and address the off-airport environmental requirements.	This Plan Section 2.2
d)	Depending on the scope and scale of the works, Sydney Metro may decide to streamline the CEMP and sub-plan requirements for off-airport works. 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. The CEMP and sub-plan requirements from this CEMF for each construction stage / contract will be detailed in the Staging Report / Construction (Rail) Plan for the project.	Note
f)	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
g)	As a minimum the CEMP will:	-
i.	Include a contract specific environmental policy;	Appendix A
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;	This table
iv.	For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	Section 7
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 6.3
vi.	Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP	Section 6.3

CEMF Ref.	Requirement	Reference
vii.	Identify communication requirements, including liaison with stakeholders and the community	Section 5.2 Section 6.7
viii.	Include induction and training requirements and a summary of the Training Needs Analysis	Section 6.5.3
ix.	Management strategies for environmental compliance and review of the performance of environmental controls	Section 6.9
x.	Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking	Section 6.9
xi.	Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;	Section 6.9.1
xii.	Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action;	Section 6.8
xiii.	Include procedures for the control of environmental records.	Section 6.10
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 Contractors 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.	Table 4 of the staging report stipulates that none of the sub-plans listed below are required for AEW – Power. Sub-plans have been developed voluntarily to provide content. No consultation required.
b)	Additional detail on the minimum requirements for these sub plans is provided in Sections 6 to 14 of this CEMP.	
3.15 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 6.3

CEMF Ref.	Requirement	Reference
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 6.3
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 6.3
iv.	Provide an overview of the role and responsibilities of the Independent Environmental Representative and other regulatory stakeholders	Section 6.3

3.2 Objectives

As a means of assessing environmental performance during construction of the Project, environmental objectives and targets have been established in accordance with the Revised Performance Outcomes documented in the Submissions Report and the 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 aspect Chapters and a summary is provided in [Table 3-4](#) 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 and REMMs.
- 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 Section 3.10 of the CEMF are included below:

Table 3-3 Hold Points identified in Section 3.10 of the CEMF

Hold Point	Release of Hold Point	By Whom	Where addressed
Prior to Vegetation Clearing/ Ground Disturbance	Pre-clearing inspection Erosion and sediment control plan	Qualified Ecologist Quickway Environment Manager or delegate	Section 7.1
Discharge of water	Water is not proposed to be discharged from the worksite(s) for the Power Enabling Works. If water is required to be discharged, a Water Pollution Impact Assessment would be developed in consultation with the EPA in accordance with MCoA 130	Quickway Environment Manager or delegate	Section 7.3
Out of hours works	Noise assessment	Quickway Environment Manager	Construction Noise and Vibration Management Plan
Use of local roads by heavy vehicles	Road Dilapidation Report	Appropriate Professional nominated by Principal Contractor	Overarching Construction Traffic Management Plan
Construction identified as affecting buildings	Building condition survey	Appropriate Professional nominated by Sydney Metro	N/A This is not been allocated to Quickway for the Power Enabling Works.

Table 3-4 Environmental Objectives

Management Area	Objective	Where addressed
Noise and Vibration	<ul style="list-style-type: none"> Minimise unreasonable noise and vibration impacts on residents and businesses; Avoid structural damage to buildings or heritage items, and public utilities and infrastructure, including the Warragamba to Prospect Water Supply Pipelines, as a result of construction vibration; Undertake active community consultation Maintain positive, cooperative relationships with schools, childcare centres, local residents and building owners. Noise and vibration monitoring would be undertaken for construction as specified in the CNVS. 	Section 7.4 CNVMP (Appendix H)
Heritage	<ul style="list-style-type: none"> Minimise impacts on items or places of heritage value; Avoid accidental impacts on heritage items; and Maximise worker's awareness of indigenous and non-indigenous heritage. 	CEMP Section 7.5 & 7.6 Heritage Unexpected Finds Procedure (Appendix G)
Flora and Fauna	<ul style="list-style-type: none"> Minimise impacts on flora and fauna; Design waterway modifications and crossings to incorporate best practice principles; Retain and enhance existing flora and fauna habitat wherever possible; Appropriately manage the spread of weeds and plant pathogens No removal of any vegetation within the Thompsons Creek / Badgerys Creek riparian zone or any adjacent areas that are non-certified under the South-West Growth Area 	CEMP Section 7.1 Weed Management Procedure (Appendix E)
Visual Amenity	<ul style="list-style-type: none"> Minimise impacts on existing landscape features as far as feasible and reasonable; Ensure the successful implementation of the Landscape Design; Reduce visual impact of construction to surrounding community 	CEMP Section 7.8

Management Area	Objective	Where addressed
Soil and Water	<ul style="list-style-type: none"> Minimise pollution of surface water through appropriate erosion and sediment control; Minimise leaks and spills from construction activities; Maintain existing water quality of surrounding surface watercourses; and Source construction water from non-potable sources, where feasible and reasonable. Contamination risks to human health and ecological receivers are minimised through effective management of existing contaminated land Contaminated land and soil within the footprint of the project is remediated where required, to ensure the land is suitable for the intended future land use 	CEMP Section 7.3
Air Quality	<ul style="list-style-type: none"> Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and Identify and control potential dust and air pollutant sources. 	CEMP Section 7.7
Waste and Recycling	<ul style="list-style-type: none"> Minimise waste throughout the project life-cycle; and Waste management strategies will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: <ul style="list-style-type: none"> Avoidance of unnecessary resource consumption; Resource recovery (including reuse, reprocessing, recycling and energy recovery); and Disposal. 25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction are offset 100 per cent of useable spoil is reused in accordance with the spoil reuse hierarchy A minimum 95 per cent recycling target is achieved for construction and demolition waste Products made from recycled content are prioritised The use of potable water for non-potable purposes is avoided if non-potable water is available The reuse of water is maximised, either on-site or off-site 	CEMP Section 7.2Waste and Recycling Management Sub-plan Appendix F. Sustainability Management Plan

Management Area	Objective	Where addressed
Community	<ul style="list-style-type: none"> Minimise project impacts on stakeholders and the community where possible Minimise project impacts on local businesses recognising specific needs and requirements Provide adequate, timely and coordinated stakeholder and community communication and engagement Assist stakeholders and the community in their understanding of project construction including activities to be undertaken by project delivery partners and their objectives, benefits, potential impacts and expected outcomes Appropriately address stakeholder and community issues Provide consistency across our external communication activities and interfaces with stakeholders during delivery of all Sydney Metro projects Coordinate approach to manage project enquiries and complaints with interface projects where appropriate Act as a conduit and advocate between the project team and the broader community. 	Overarching Community Communications Strategy (OCCS)
Traffic and Transport	Transport Network <ul style="list-style-type: none"> Minimise disruption to pedestrians, cyclists and motorists; Ensure Sydney Metro construction traffic accesses the arterial network as soon as practicable on route to, and immediately after leaving, the construction site; Keep Sydney moving; Minimise impacts on route bus operations, routes and stops, where possible; Minimise changes to traffic operation and kerbside access; Minimise construction traffic generation during network peak periods (maximum peak period construction vehicle volumes should not exceed those outlined in the EIS); Maintain access to properties and businesses where possible, or arrange alternative; Maintain a safe environment for pedestrians and cyclists 	Overarching Construction Traffic Management Framework (CTMF) Construction Traffic Management Plan (separate document not included in the CEMP) CEMP
	Safety <ul style="list-style-type: none"> No worker injury accidents during construction; No injury accidents to members of the public because of construction. 	

Management Area	Objective	Where addressed
	Cumulative <ul style="list-style-type: none"> Work collaboratively with other stakeholders and other major projects to mitigate traffic and transport impacts 	
	Amenity <ul style="list-style-type: none"> 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 Strategy (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 Section 1.2 and throughout Chapter 8.

The Off Airport power enabling work is located across six areas north and south of the Western Sydney Airport as described below:

- Portion 1 - Patons Lane Undergrounding [PLU]: A 300m extent along Patons Ln, Orchard Hills.
- Portion 1 – Patons Lane access to the western portion of the works area will be via a shared driveway with Bingo industries recycling centre and waste facility. Access will be maintained to ensure Bingo have clear access to their facility at all times.
- Portion 2 - Claremont Meadows Services Facility Power [CMP]: Beginning from a new Sub Station near the intersection of the Great Western Highway, extending for approximately 550m to terminate on Sunflower Dr.
- Portion 3 - Orchard Hills Power [OHP]: Claremont Meadows: Beginning at Claremont Meadows Zone Sub Station on Sunflower Dr in Claremont Meadows extending to a new Switching Station on Kent Rd approximately 300m south of the M4.
- Portion 4 - Airport Business Park Power [ABP]: Extending approximately 5.7km from the existing Kemps Creek Zone Sub-station to a new Switching Station within On Airport land.
- Portion 5 - Precast Facilities Power [PFP]: Extending for approximately 500m along Longleys Rd east of Badgerys Creek Rd starting and terminating at two new Sub Stations.
- Portion 6 - Aerotropolis Power [AEP]: Extending for approximately 3.1km north from Bringelly Zone Sub Station to a new Sub Station at the new Aerotropolis Metro Station.

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

Portion 1 - Patons Lane Undergrounding [PLU]

- Mobilisation, site set-up
- Traffic control
- Service locating, potholing, investigations
- Removal of existing overhead services
- Site clearance
- Trench excavation, conduit installation, backfilling
- Horizontal directional drilling & pipe installation
- Spoil management
- Cable installation, jointing, testing works
- Soft Landscaping
- Permanent restorations and handover

Portion 2 - Claremont Meadows Services Facility Power [CMP]

- Mobilisation, site set-up
- Traffic control
- Service locating, potholing, investigations
- Removal of existing overhead services & re-stringing of existing overhead services
- Site clearance
- Trench excavation, conduit installation, backfilling
- Horizontal directional drilling & pipe installation
- Spoil management
- Cable installation, jointing, testing works
- Cable pulling through existing conduits
- Installation of new overhead services
- Road pavement and footpath construction
- Installation of new electrical kiosk substation
- Soft Landscaping
- Permanent restorations and handover

Portion 3 - Orchard Hills Power [OHP]:

- Mobilisation, site set-up
- Traffic control
- Service locating, potholing, investigations
- Trench excavation, conduit installation, backfilling
- Spoil management
- Cable installation, jointing, testing works
- Horizontal directional drilling & pipe installation
- Installation of new electrical switching stations
- Road pavement and footpath construction
- Soft Landscaping
- Permanent restorations and handover

Portion 4 - Airport Business Park Power [ABP]:

- Mobilisation, site set-up

- Traffic control
- Service locating, potholing, investigations
- Trench excavation, conduit installation, backfilling
- Spoil management
- Cable installation, jointing, testing works
- Horizontal directional drilling & pipe installation
- Installation of new electrical switching stations
- Road pavement and footpath construction
- Soft Landscaping
- Permanent restorations and handover

Portion 5 - Precast Facilities Power [PFP]:

- Mobilisation, site set-up
- Traffic control
- Service locating, potholing, investigations
- Trench excavation, conduit installation, backfilling
- Spoil management
- Cable installation, jointing, testing works
- Installation of new electrical kiosk substations
- Soft Landscaping
- Permanent restorations and handover

Portion 6 - Aerotropolis Power [AEP]:

- Mobilisation, site set-up
- Traffic control
- Service locating, potholing, investigations
- Trench excavation, conduit installation, backfilling
- Spoil management
- Cable installation, jointing, testing works
- Horizontal directional drilling & pipe installation
- Installation of new electrical switching station
- Road pavement and footpath construction
- Soft Landscaping
- Permanent restorations and handover

A description of construction activities is provided in [Table 4-1](#) below. Detailed description of impacts of the proposed works are included within this document as described in [Figure 1](#).

Table 4-1 Description of construction activities

Works category	Description of activities
All sites (as applicable)	
Mobilisation, site set-up	<ul style="list-style-type: none"> Site compound setup for site offices, amenities and material storage Site compound setup for materials, spoil and waste management and handling – segregation of waste management bays Environmental controls setup – chemical storage container, sediment controls Site security measures Deliveries of permanent material – i.e. conduits, cover strip, spacers Progressive removal of spoil material and importing of quarry materials.
Service locating, potholing, investigations, site preparation works	<ul style="list-style-type: none"> Existing service locating and space / design proving of the alignment in pinch point locations Locating of “challenging” excavation spots – i.e. large/ major utility crossings Waste material sampling and classifications Open excavations rock hammering for rock strength and level testing Survey works Tree branch trimming and removal where required. Tree protection where required.
Traffic control, pedestrian/ cyclists management	<ul style="list-style-type: none"> Traffic management – partial, full road closures, detours Parking removal Pedestrians and cyclists management Concurrent trenching crews operating at once. Out of hours work required on state, regional roads due to traffic flows and road occupancy licences.
Trench excavation, conduit installation, backfilling, temporary restorations	<ul style="list-style-type: none"> Trenching installations and works will consist of open excavations, conduit installation, backfilling and temporary restorations and will progressively move along the trench alignment. There will be about seven kilometres of trenching collectively for the project, however, the trenching will occur in various locations across each of the six portions. Trenching is not required to cross creek beds or water bodies, including farm dams. Trench depths ranging from 600mm to approximately 3200mm and widths ranging from 400mm out to 2800mm wide in some areas. Trenching works will occur within footpaths, the road carriageway or road shoulder lanes, or Endeavour Energy electrical easements Open excavations when deeper than 1500mm or in poor ground conditions trenches will be shored with either vertishores or shoring boxes. 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/rock (VENM) will be loaded into truck separately to ensure maximisation suitable material for re-use. Some excavations may encounter rock. This will require rock hammering methods. Once excavation has achieved the required depth, conduits will be installed and jointed with PVC glues. Pipe embedment will vary across the project depending on the composition of the trench & its location. Bedding materials to be utilised include compaction sand & cement stabilised sand. Polymeric (HDPE) cable cover strips are laid on-top of the pipe embedment. Trench backfill material will be placed, compacted and vibrated in approximately 150mm layers above the cover strip with trench compaction equipment. This

Works category	Description of activities
	<p>process will be repeated for multiple layers until the underside of subgrade is met (approximately 350mm below surface level). Compacting testing will occur progressively during backfilling and layers.</p> <ul style="list-style-type: none"> • Compaction sand or stabilised sand would be placed for backfill immediately around existing utilities crossed. Stabilised sand may require water conditioning during placement, however does not required vibration compaction from 2ton trench roller, instead isolated handheld jumping jack leveling. • Soft electrical warning marker tape is rolled out and installed on the top of the trench backfill and below the road subgrade level. • 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. • Temporary road and footpath restorations will be made with the placement of approximately 50-75mm of AC10 or AC14 hot mix. Hotmix will be placed from excavator bucket, spread and rolled with 2ton smooth drum roller. • Any open excavations at the end of each shift within 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. • Any open excavations within the secured site will be covered between shifts to ensure public safety of any unauthorised entry in the site. • Trenching works will progress approximately 10-30 metres per dayshift, and approximately 4-12 metres per nightshift pending ground conditions.
HDD bores	<ul style="list-style-type: none"> • Survey set out of bore. Utility investigation to validate locations and depths before trenchless drilling. • 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. There will be approximately 800 metres of HDD boring in a number of different locations. • '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. • "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. • Concurrently to HDD boring works, high density polyethylene (HDPE) pipes are plastic butt welded together and internally debanded. HDPE pipes are welded into a string to match the length of the HDD bore. • Pipe will be dragged from its welding location along the alignment. It is then connected to the drilling rods before being pulled into the bore hole • 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. • 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. • Once pipe is installed, grout will be installed via gravity pour at the entry and exit pits and pumping through a tremie line installed.

Works category	Description of activities
	<ul style="list-style-type: none"> During the HDD bore, and for a set schedule after completion, road monitoring targets are monitored to ensure no road surface movement
Bed bores	<ul style="list-style-type: none"> Excavate, shore of launch & receive pit shafts approximately 3m long, 2m wide, dug to the depth of the bore. Lift bed bore rig into send hole. Load auger bores as the bore progresses Remove bed boring rig once augers retracted. Install pre-staged carrier conduit pipes and spacers.
Cable installation, jointing works	<ul style="list-style-type: none"> Roping, and mandrelling (proving) of conduits. Re-opening of joint bay excavations. Cable winch pulling. Various open points along the alignment for cable pushing bays Cable jointing hut/ covers installed over joint bays for jointing works. Cable testing Joint bay backfill and restorations
Supply and install pad mounted high voltage customer kiosks (HVCs)	<ul style="list-style-type: none"> Construction of reinforced concrete footing with exiting conduits Cranage, installation securing of HVCs. Cable terminations into HVCs, testing and commissioning works
Permanent restorations and handover	<ul style="list-style-type: none"> Return once all conduit installation works and cable pulling, testing works are completed. Mill and re-sheet impacted lane with permanent road pavement material. Restore any footpath materials to pre-existing materials -i.e. concrete or pavers where appropriate

The proposed construction program, weather and site conditions pending, is detailed in Table 4-2.

Table 4-2 Proposed Construction Duration

Project Location	Commencement	Completion
Portion 1 – Patons Lane Undergrounding [PLU]	06/01/22	08/04/22
Portion 2 – Claremont Meadows Services Facility Power [CMP]	07/01/22	30/06/22
Portion 3 – Orchard Hills Power [OHP]	04/03/22	30/09/22
Portion 4 – Airport Business Park Power [ABP]	28/03/22	30/09/22
Portion 5 – Precast Facilities Power [PFP]	07/03/22	30/06/22
Portion 6 – Aerotropolis Power [AEP]	06/01/22	30/06/22

123 LOT 40
D.P. 738126

43A
LOT 42
D.P. 738126

117-119
LOT 5
D.P. 521268

4
LOT 4
D.P. 242968

114
LOT 1
D.P. 242968

221 - 227
LOT 2

PROPOSED DRIVEWAY

PROPOSED DRIVEWAY

STOCKDALE ROAD

PATONS LANE

PROPERTY BOUNDARY

REMOVE UGOH FROM POLE 1
AND TURN TOWARDS POLE 2
TO INSTALL STJ ON NEW UG
CABLE.

INSTALL UNDERBORE & NEW HV
CABLE BETWEEN "A" AND "B".
ALLOW SUFFICIENT LENGTH OF
CABLE FOR JOINTING AT "A"
AND FOR UGOH ST POLE 6.

EE is not the determining authority for any removal or
associated with the works under this project. L1 ASP or
the relevant authority for any associated permits or a

INSTALL NEW HV UGOH ON POLE 6.
TERMINATE EXISTING HV ABC & BOND
TO NEW UGOH.

NOTE:
THE UNDERBORE BETWEEN "A" AND "B" WILL BE INSTALLED
BEFORE TREE REMOVAL IN THE VICINITY OF THE DRIVEWAY.
THE CONTRACTOR REMOVING THE TREES SHOULD ENSURE
THAT THE CONDUITS & CABLES ARE NOT DAMAGED DURING
THESE WORKS.

SITE PLAN A

Figure 3 Patons Lane - Access to western portion of works area

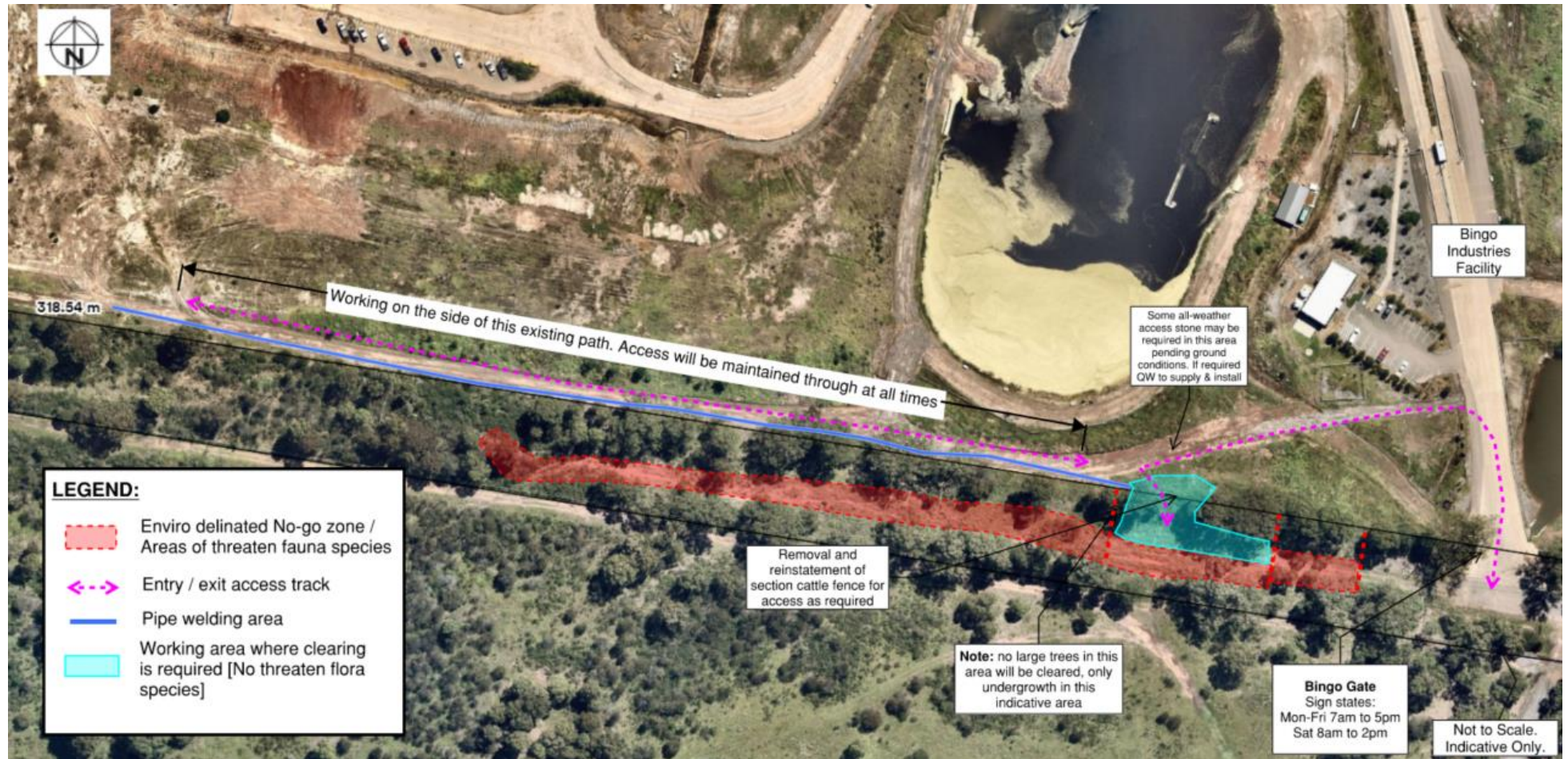


Figure 4 Overview of Portion 2 – Claremont Meadows Services Facility Power [CMP] Power Supply Route

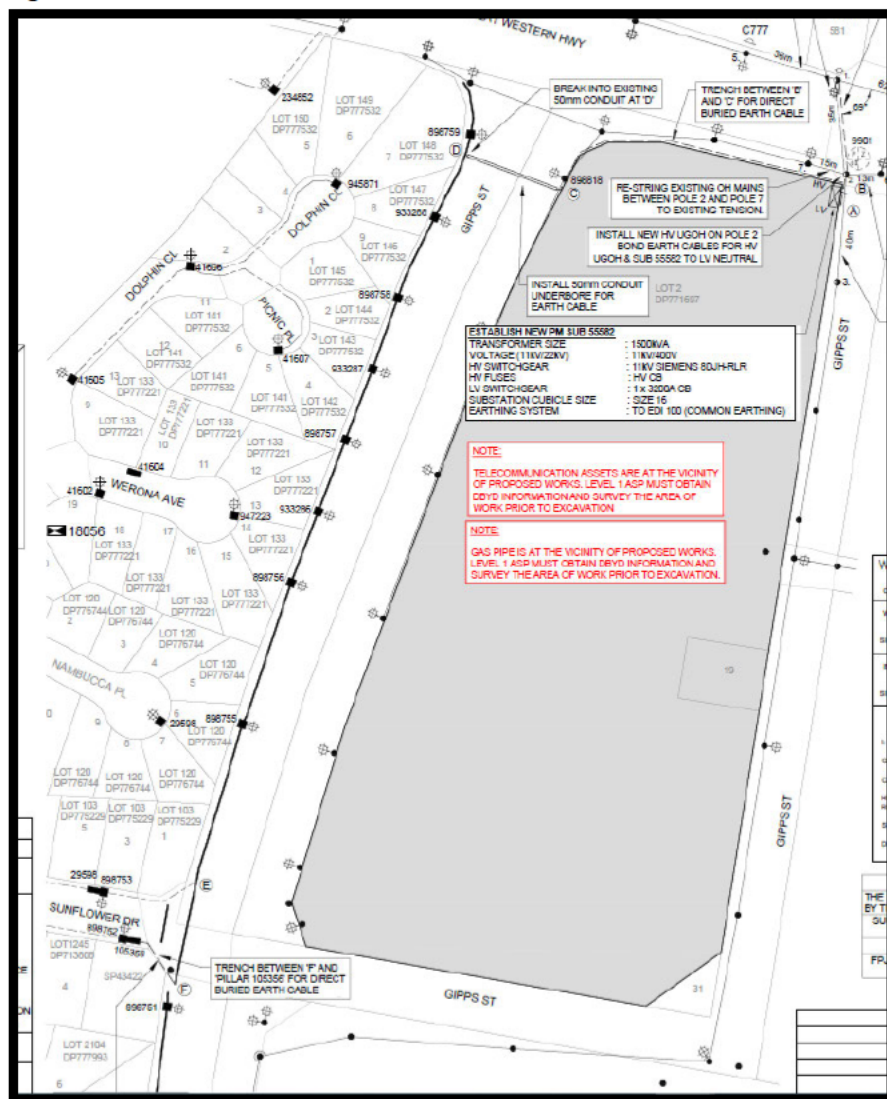
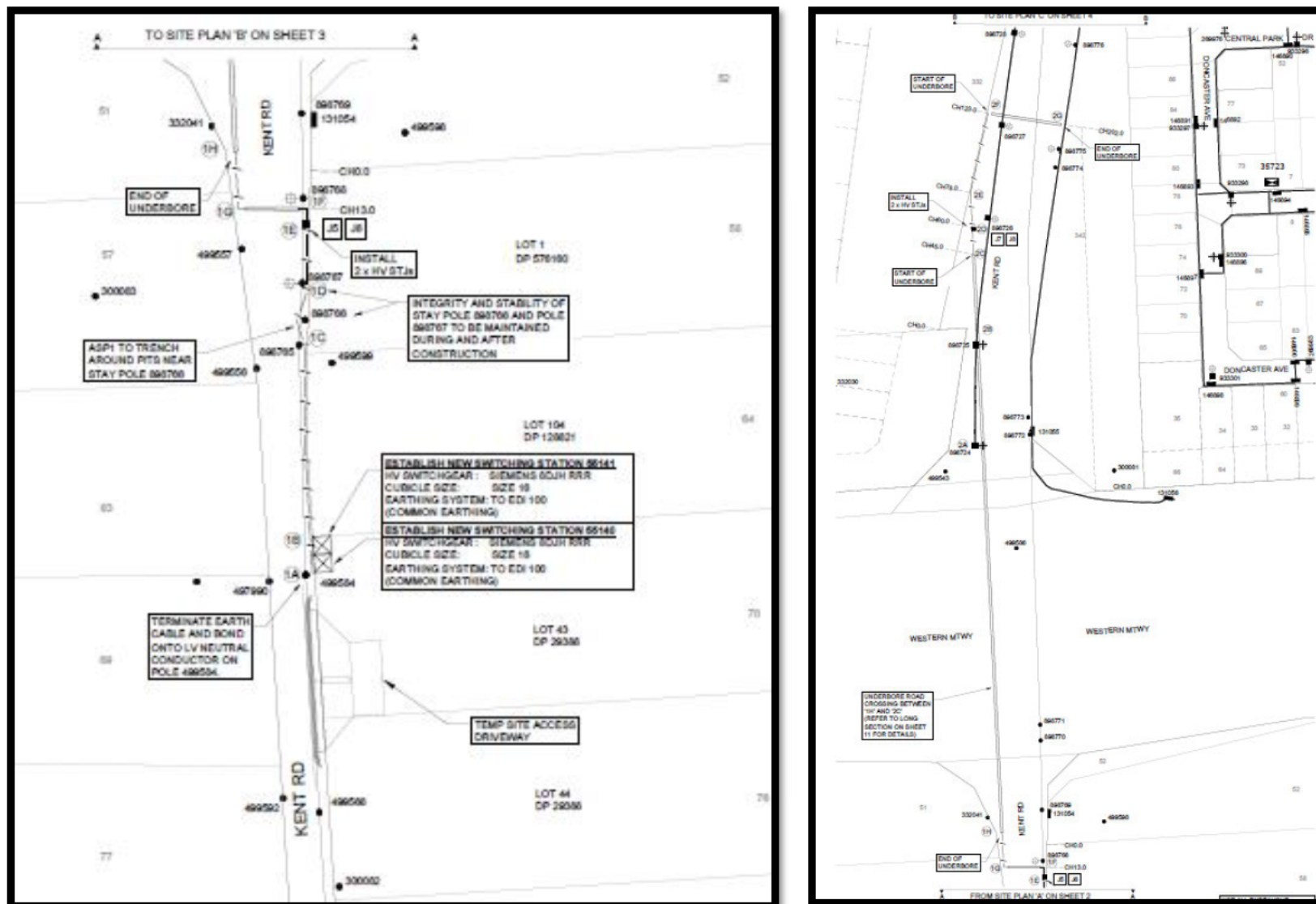
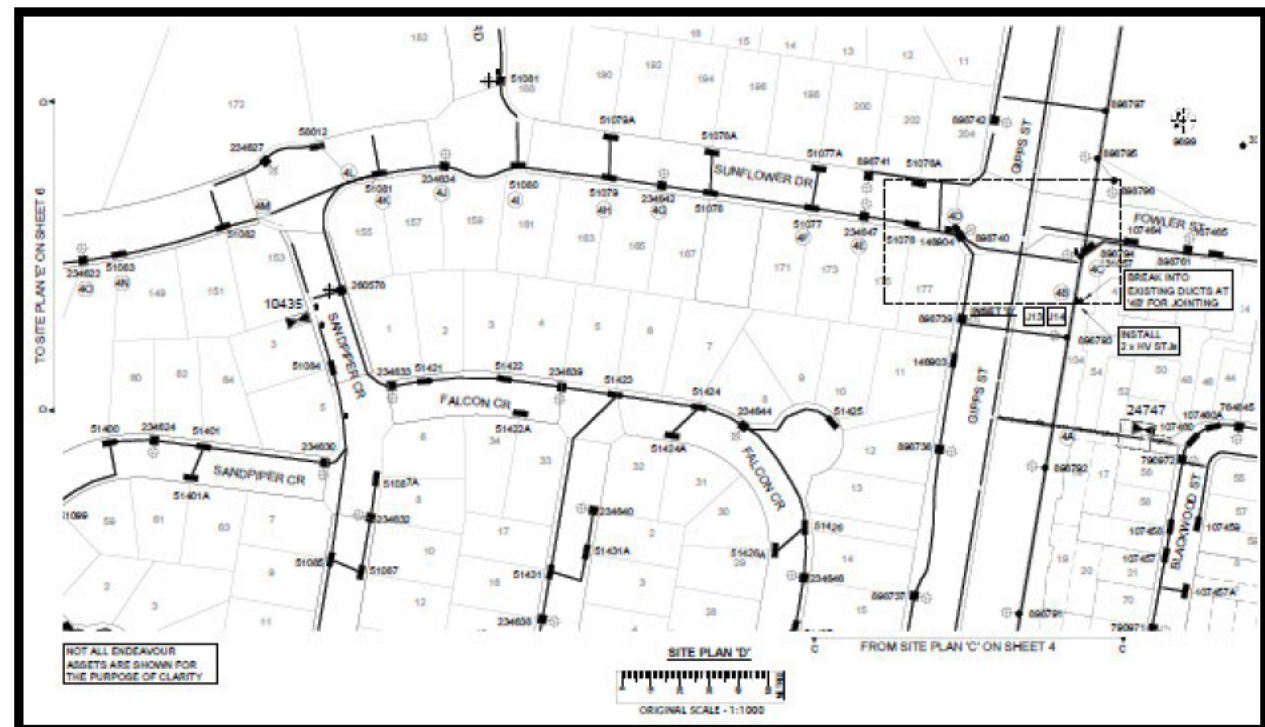
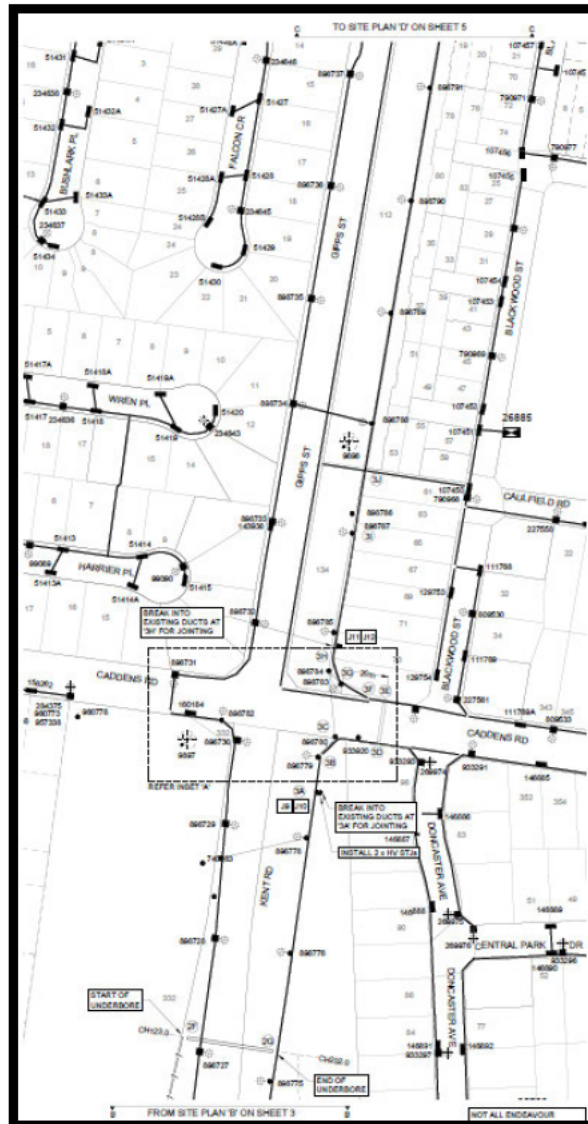
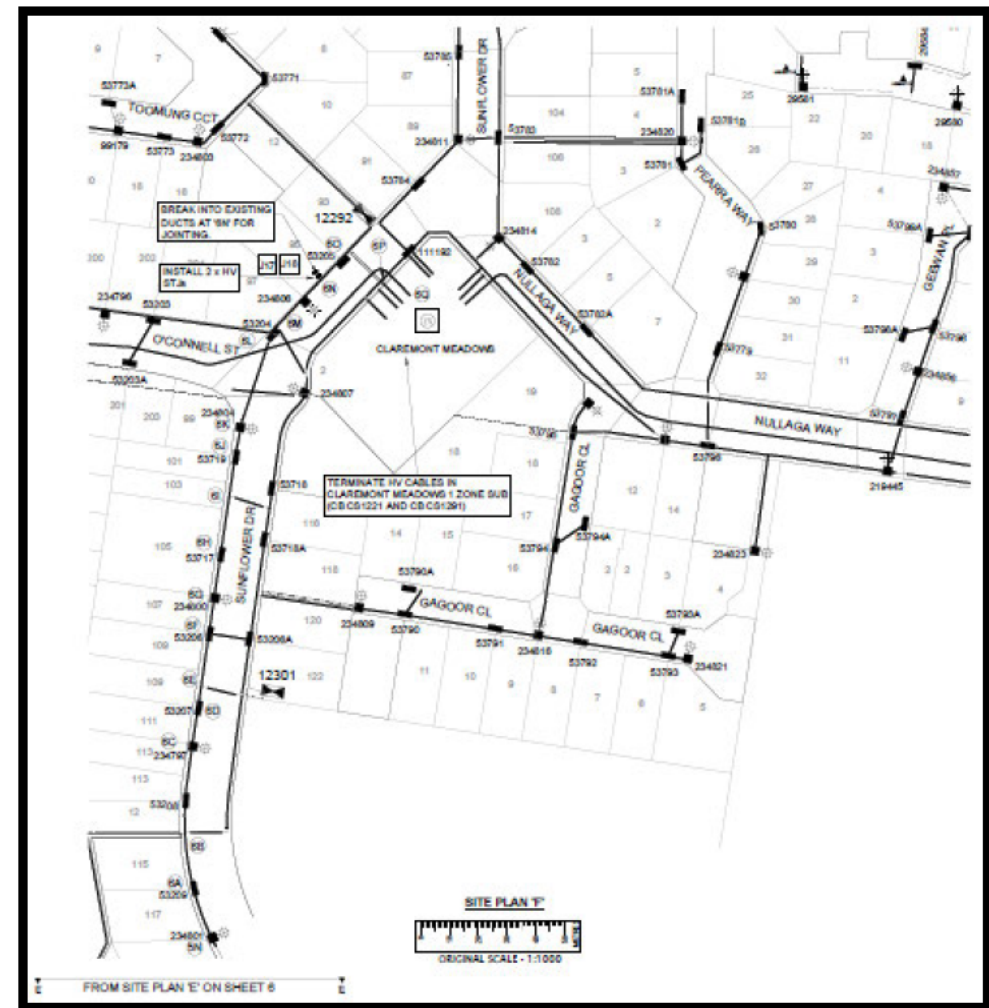
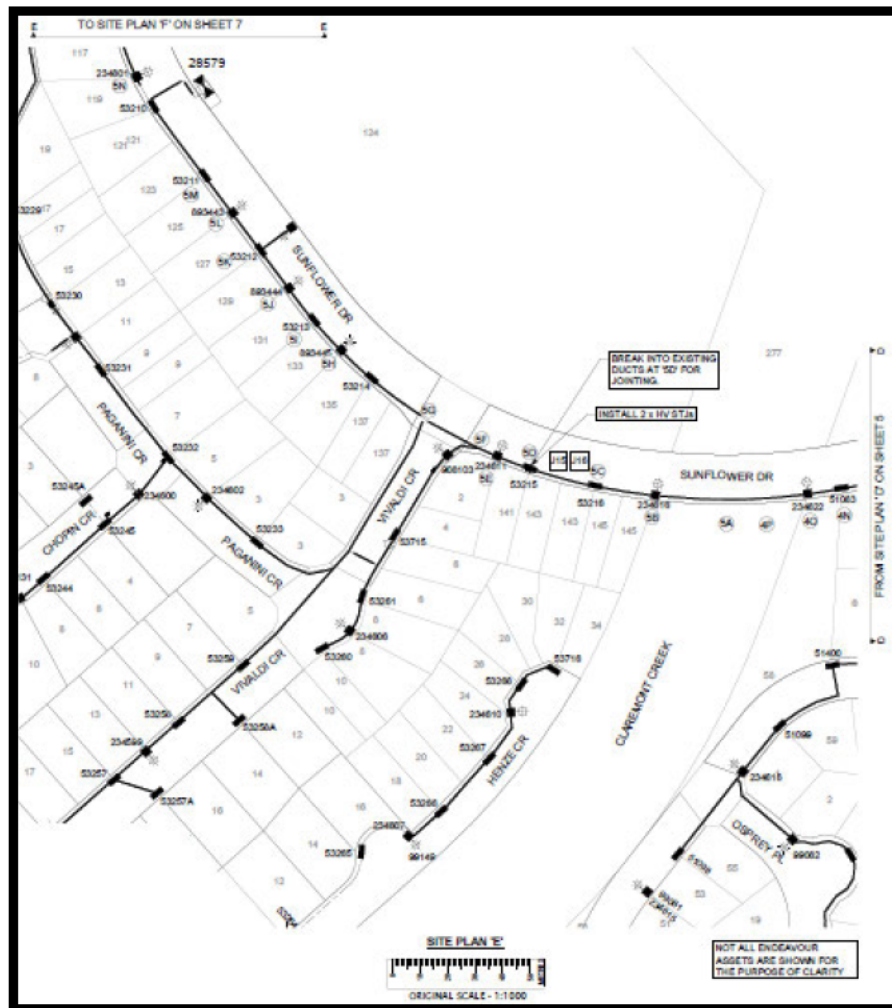





Figure 5 Overview of Portion 3 – Orchard Hills Power [OHP] Power Supply Route

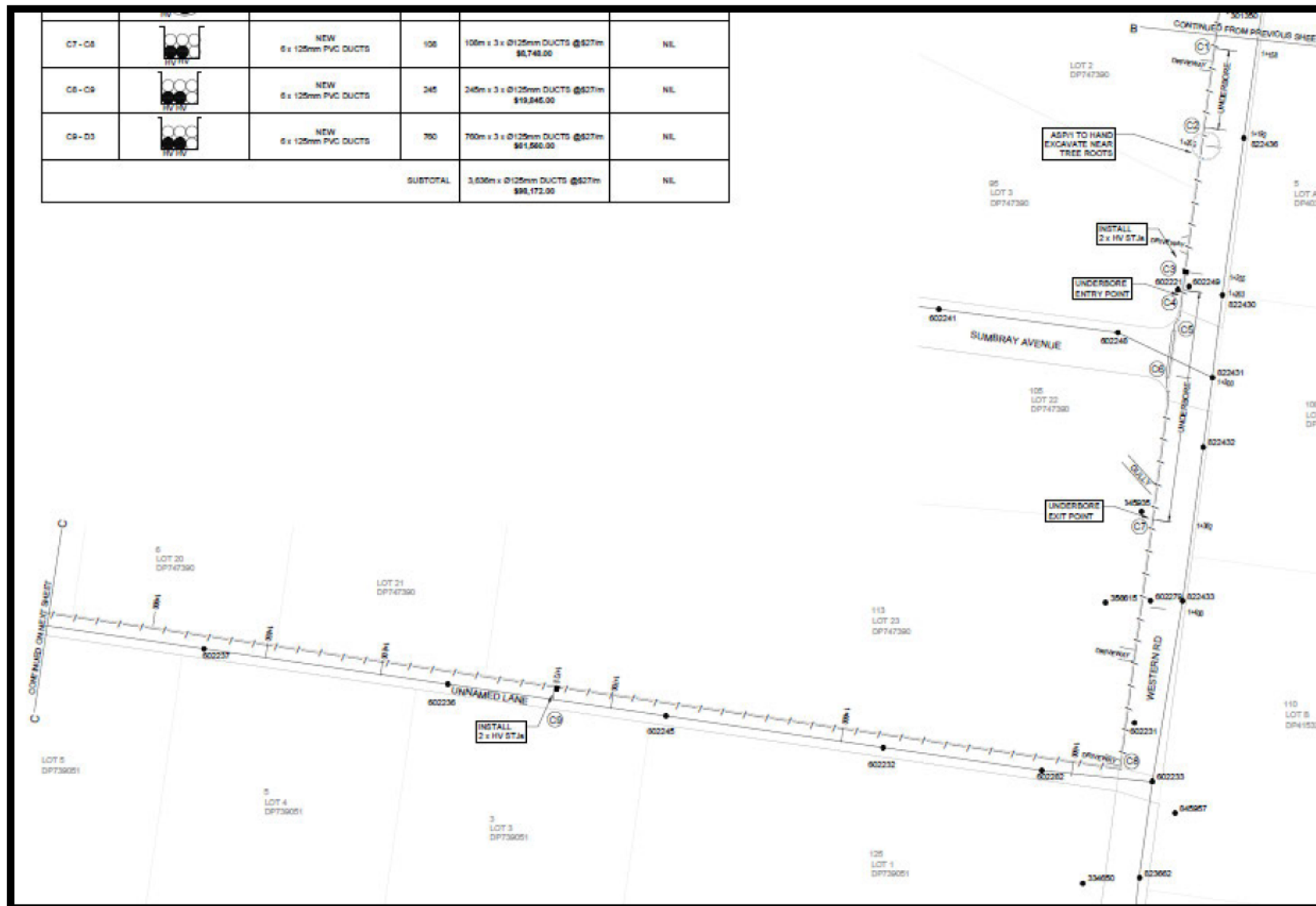


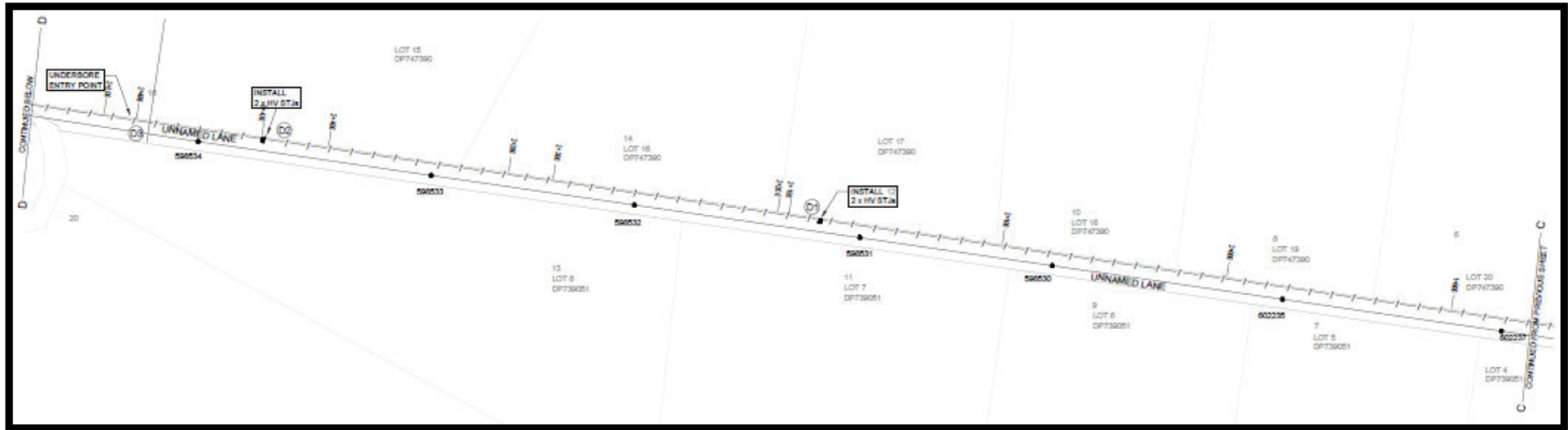


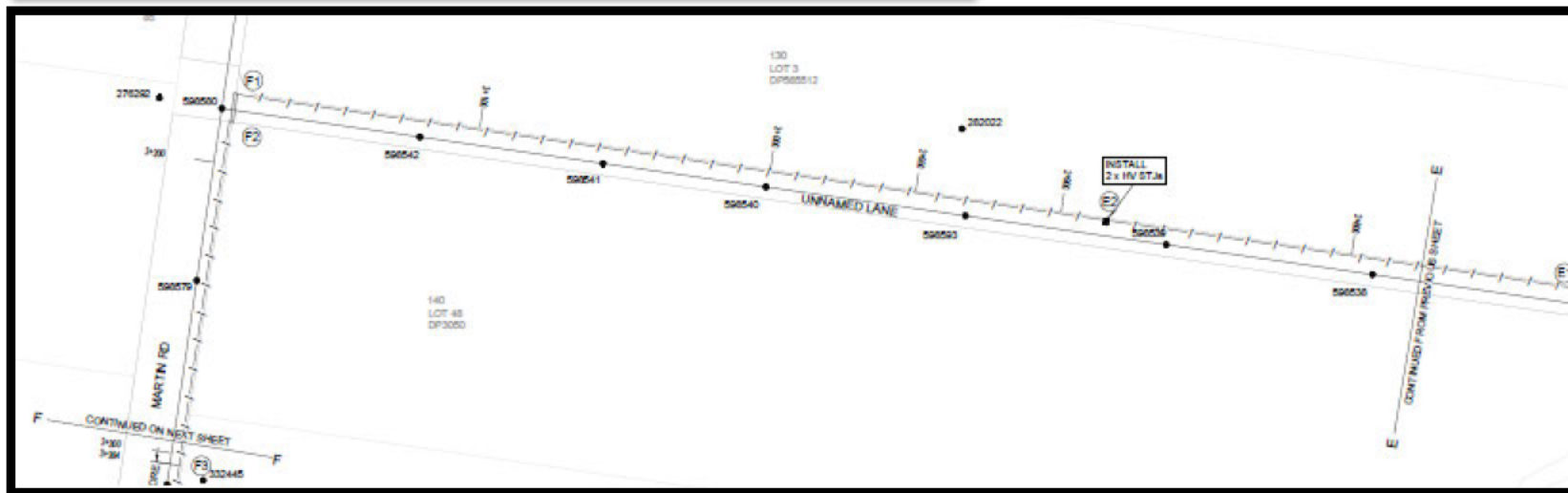
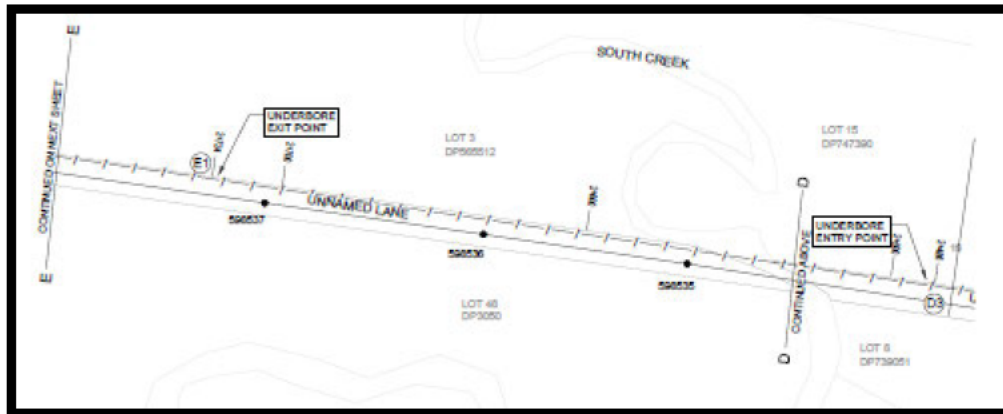


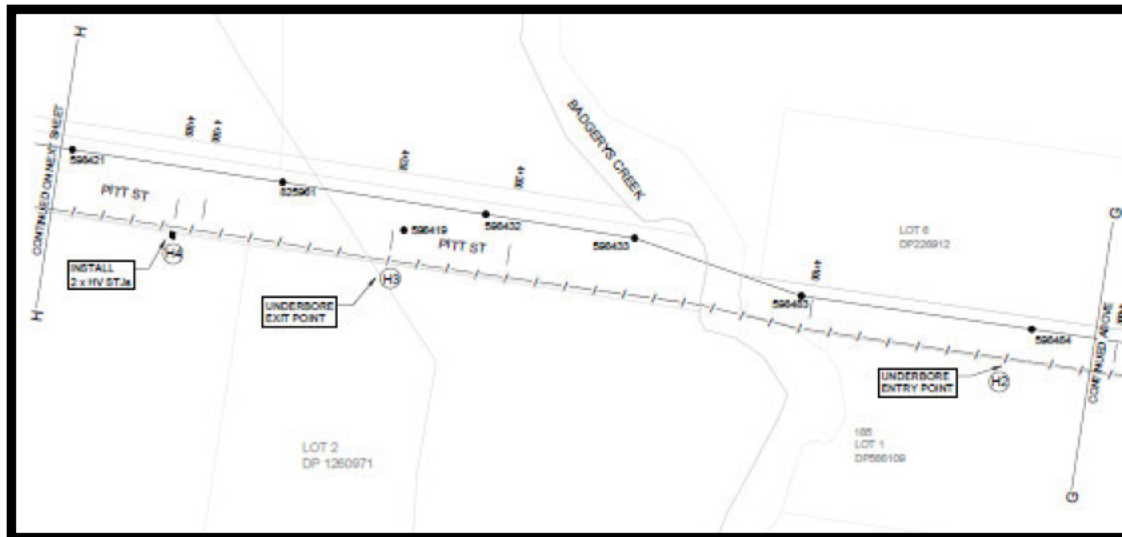
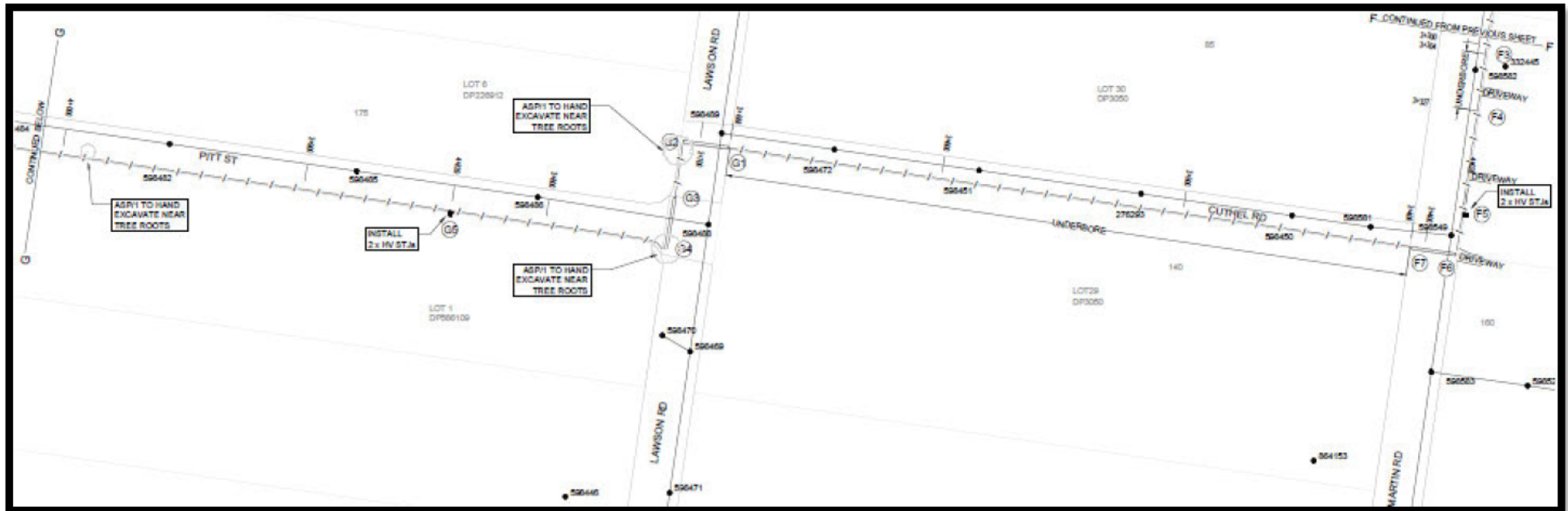
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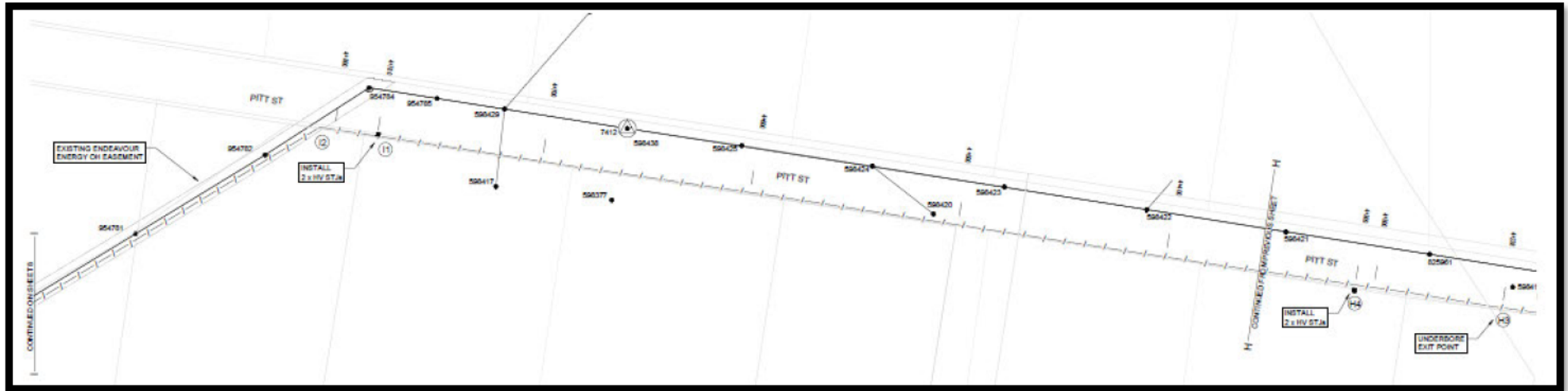
C7 - C8		NEW 6 x 125mm PVC DUCTS	100	100m x 3 x Ø125mm DUCTS @ \$27/m \$2,700.00	NIL
C8 - C9		NEW 6 x 125mm PVC DUCTS	240	240m x 3 x Ø125mm DUCTS @ \$27/m \$6,480.00	NIL
C9 - D3		NEW 6 x 125mm PVC DUCTS	700	700m x 3 x Ø125mm DUCTS @ \$27/m \$18,900.00	NIL
SUBTOTAL				3,036m x Ø125mm DUCTS @ \$27/m \$81,972.00	NIL

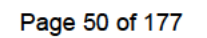


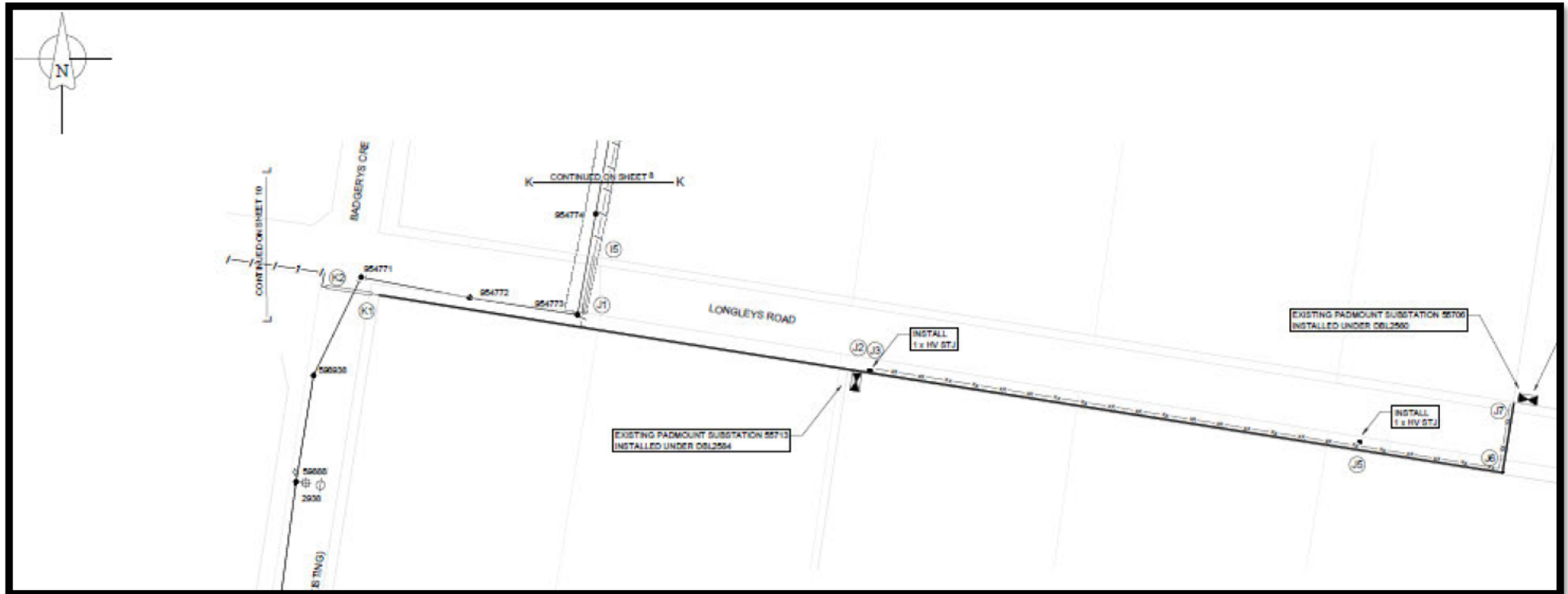


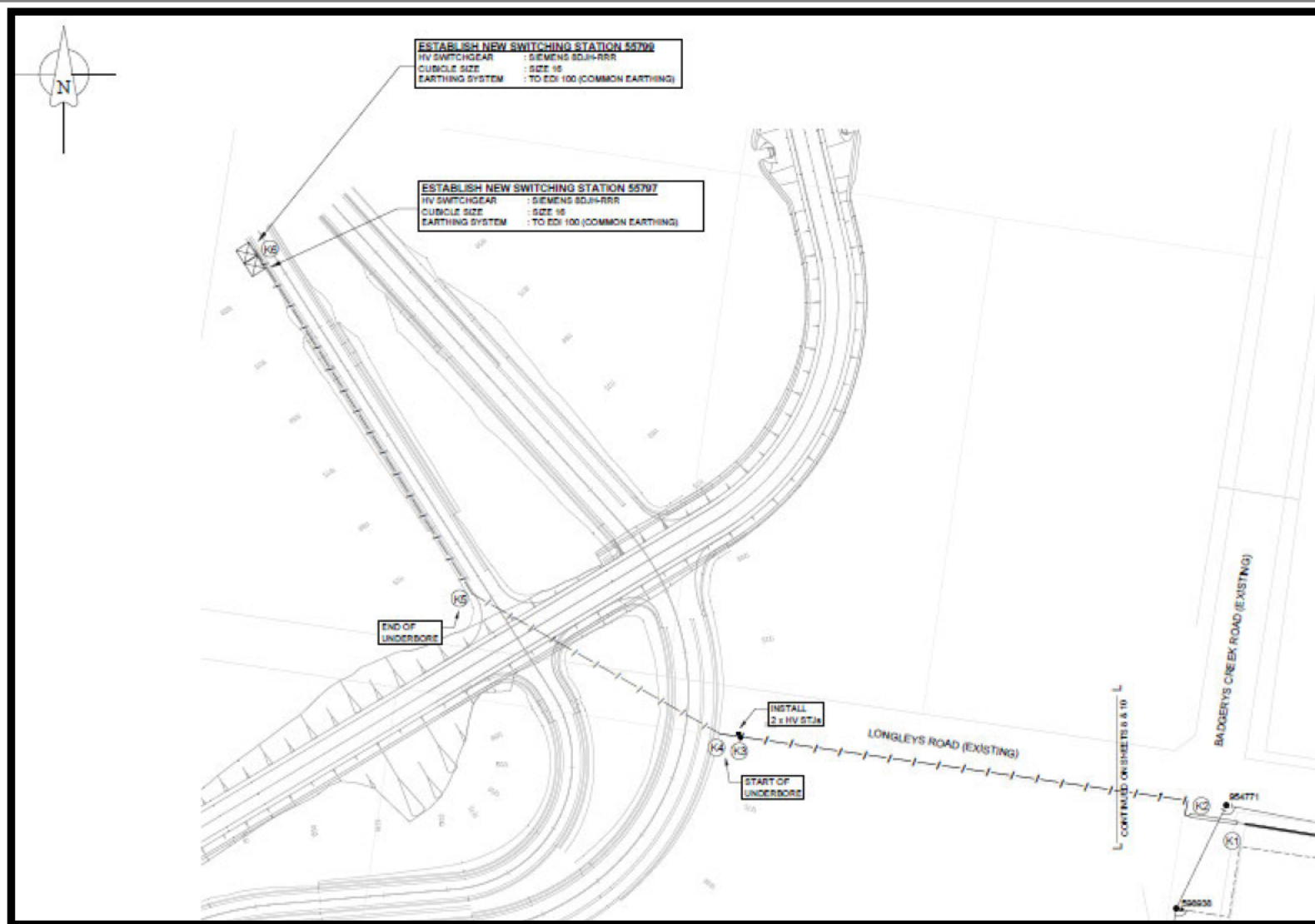






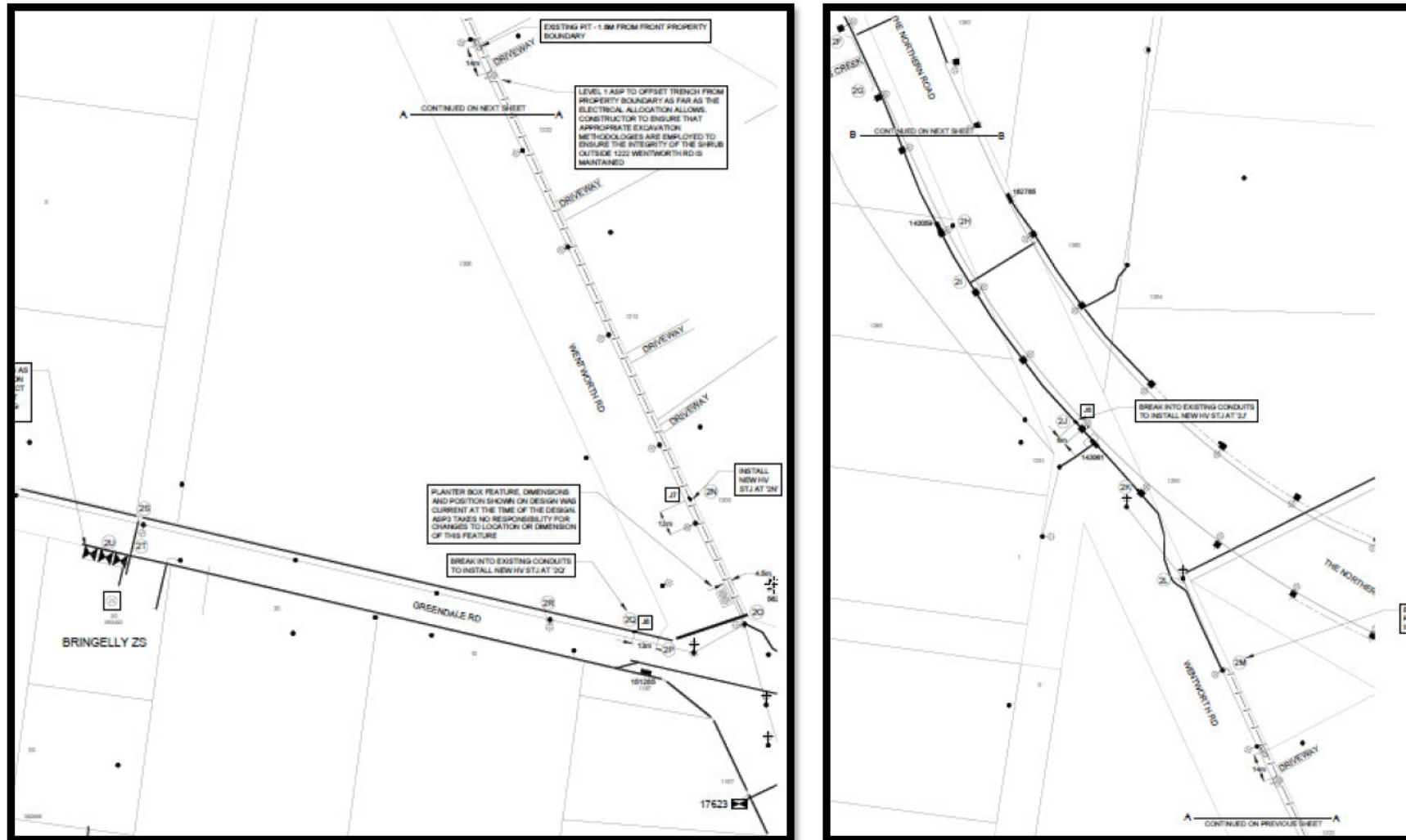


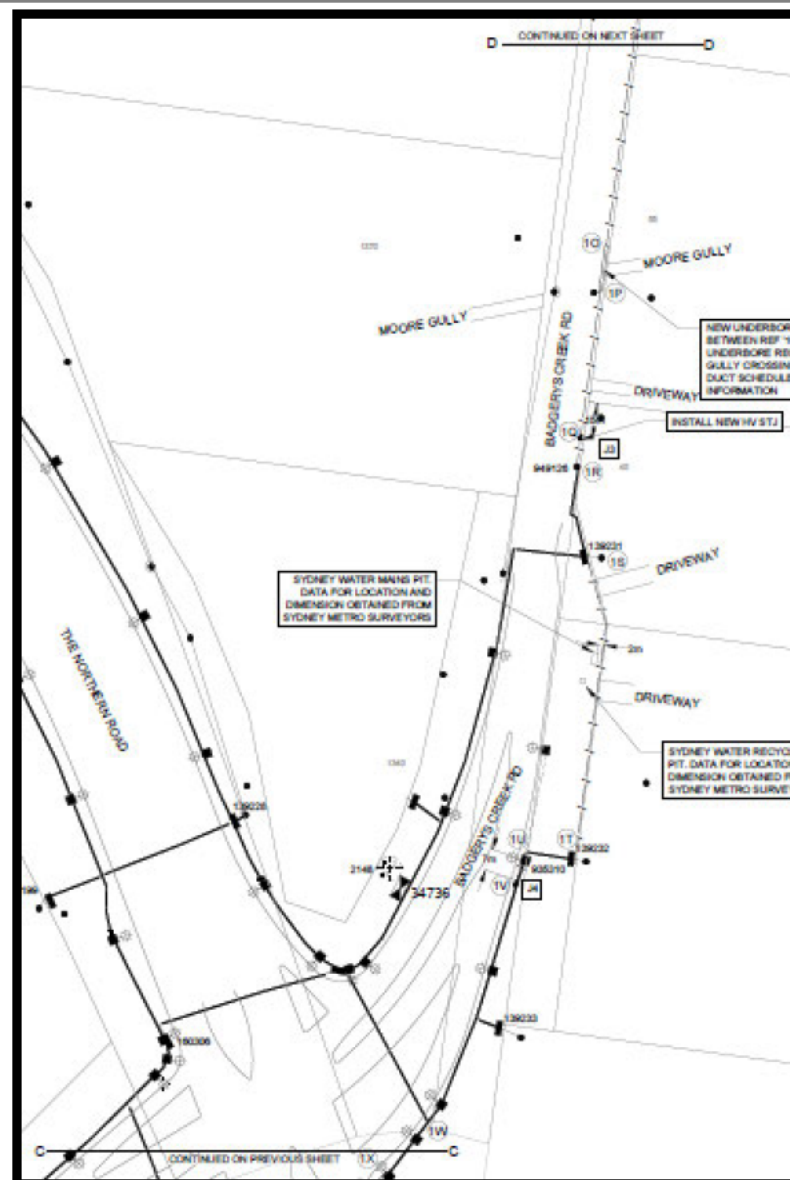
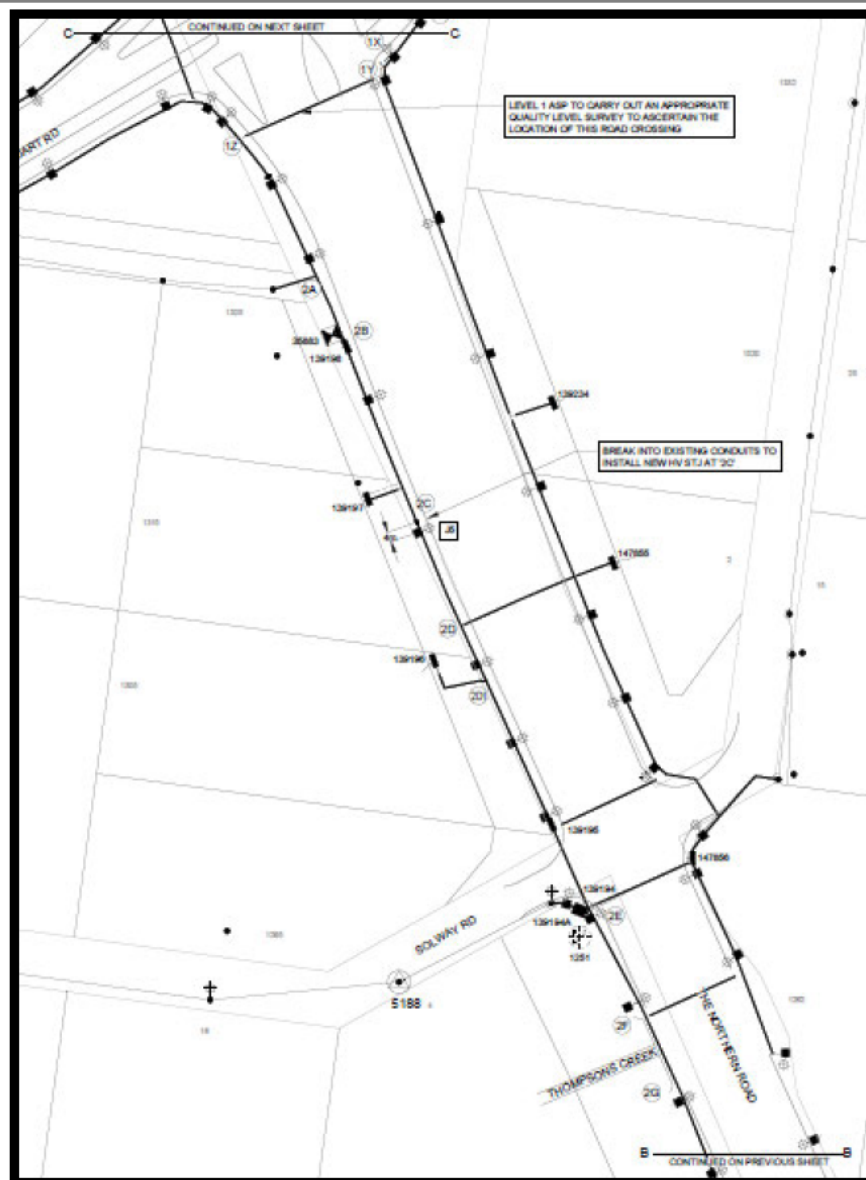


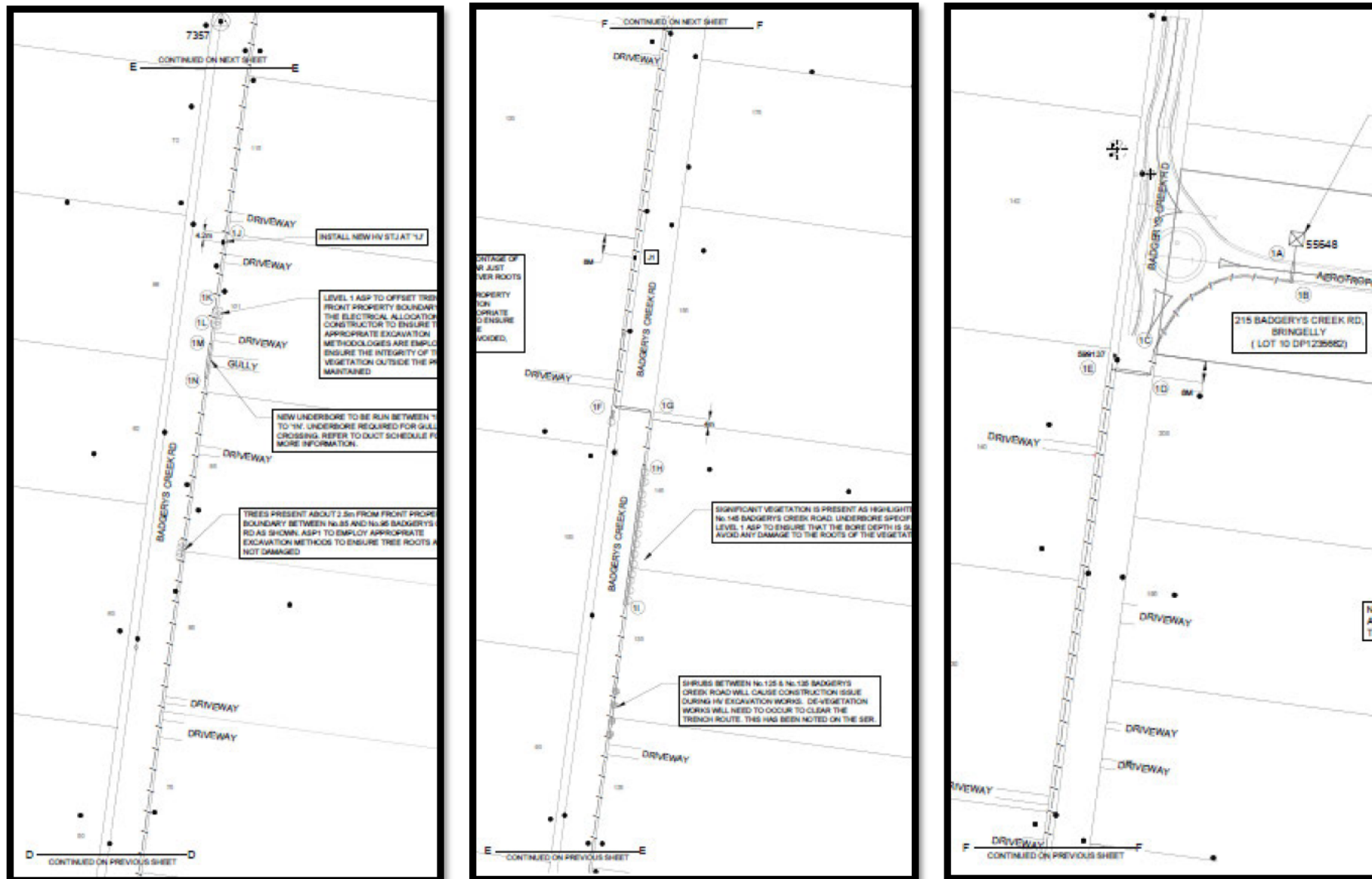


[illegible]

Figure 8 Overview of Portion 6 – Aerotropolis Power [AEP] Power Supply Route







4.2 Ancillary facilities

Temporary construction ancillary facilities are needed to facilitate construction of the project. The following sites have been selected for use by Quickway during the construction phase of the power enabling works package.

Claremont Meadows services facility

- Quickway ID: Area SA-02 (refer to [Figure 9](#) and [Figure 10](#))

EIS Chapter 8 describes the uses proposed for the Claremont Meadows Services Facility which is located to the southeast of the intersection of the Great Western Highway and Gipps Street during construction. As this ancillary facility was described in Chapter 8 of the EIS, no further assessment is required in accordance with MCoA A17. Chapter 8 describes proposed uses for this site including:

- Spoil handling, storage and transport
- Material laydown and handling
- Office and amenities
- Parking facilities

Lawson Street Ancillary Site

The Lawson Street ancillary site will be established in accordance with MCoA A17, as the site is immediately adjacent to the construction boundary of the CSSI; the landowner has given permission to utilise the land for the purpose of the ancillary facility; there are no impacts on heritage items, threatened species, populations or ecological communities; and the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval. Assessment of this criteria is shown in Table 4-3. Up to 10 truck movements per day might be required to access the Lawson Street Ancillary Site, however, these truck movements are not expected to cause queuing on Lawson Street, nor impact the performance of the local road. Further details are included in Section 7.9.

The Lawson Street site as shown in Figure 11 will be required to service Portions 4, 5 and 6. The ancillary site will include a small satellite office and amenities for the workforce. Temporary water supply will be from an existing water supply hydrant, while the site will be powered by overhead mains power via a temporary underground trench. The ancillary site will be used for the following purposes:

- Spoil handling, storage and transport
- Material laydown and handling
- Office and amenities
- Parking facilities

Table 4-3 - Lawson Rd Ancillary Facility assessment criteria as described in MCoA A17.

Assessment Criteria	Outcome
Located immediately adjacent to construction boundary	<input checked="" type="checkbox"/> Yes
Landowner written acceptance	<input checked="" type="checkbox"/> Yes
No impacts to Heritage	<input checked="" type="checkbox"/> Yes
No impacts to Threatened species	<input checked="" type="checkbox"/> Yes
No impacts to Threatened populations	<input checked="" type="checkbox"/> Yes
No impacts to Threatened ecological communities	<input checked="" type="checkbox"/> Yes
Establishment and use of the facility can be carried out and managed within the outcomes set in terms of approval including in relation to environmental, social and economic impacts	<input checked="" type="checkbox"/> Yes

The Claremont Meadows Ancillary Site described above is not located adjacent to sensitive land uses and therefore, no boundary screen is proposed around the ancillary sites as a visual mitigation measure. Lawson Street compound may require some screening on the side of the ancillary site that faces the residence, however, this will be agreed with the property owner as part of the lease negotiations. Boundary screening may be installed around the ancillary sites to assist in security, as deemed appropriate during construction.

4.2.1 Additional ancillary facilities

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 MCoA A17 or 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.

Although unlikely, if lunch sheds, portable toilets and the like are required to be established and used at any of the Portion sites, they can be established in accordance with MCoA A 22 if they meet the following conditions:

- a) are located within or adjacent to the Construction Boundary; and
- b) have been assessed by the ER to have –
 - i. minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the ICNG, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and
 - ii. minimal environmental impact with respect to waste management and flooding, and
 - iii. no impacts on biodiversity, soil and water, and Heritage items beyond those already approved under other terms of this approval.



Figure 9 Indicative location of Ancillary Facility Area SA-02

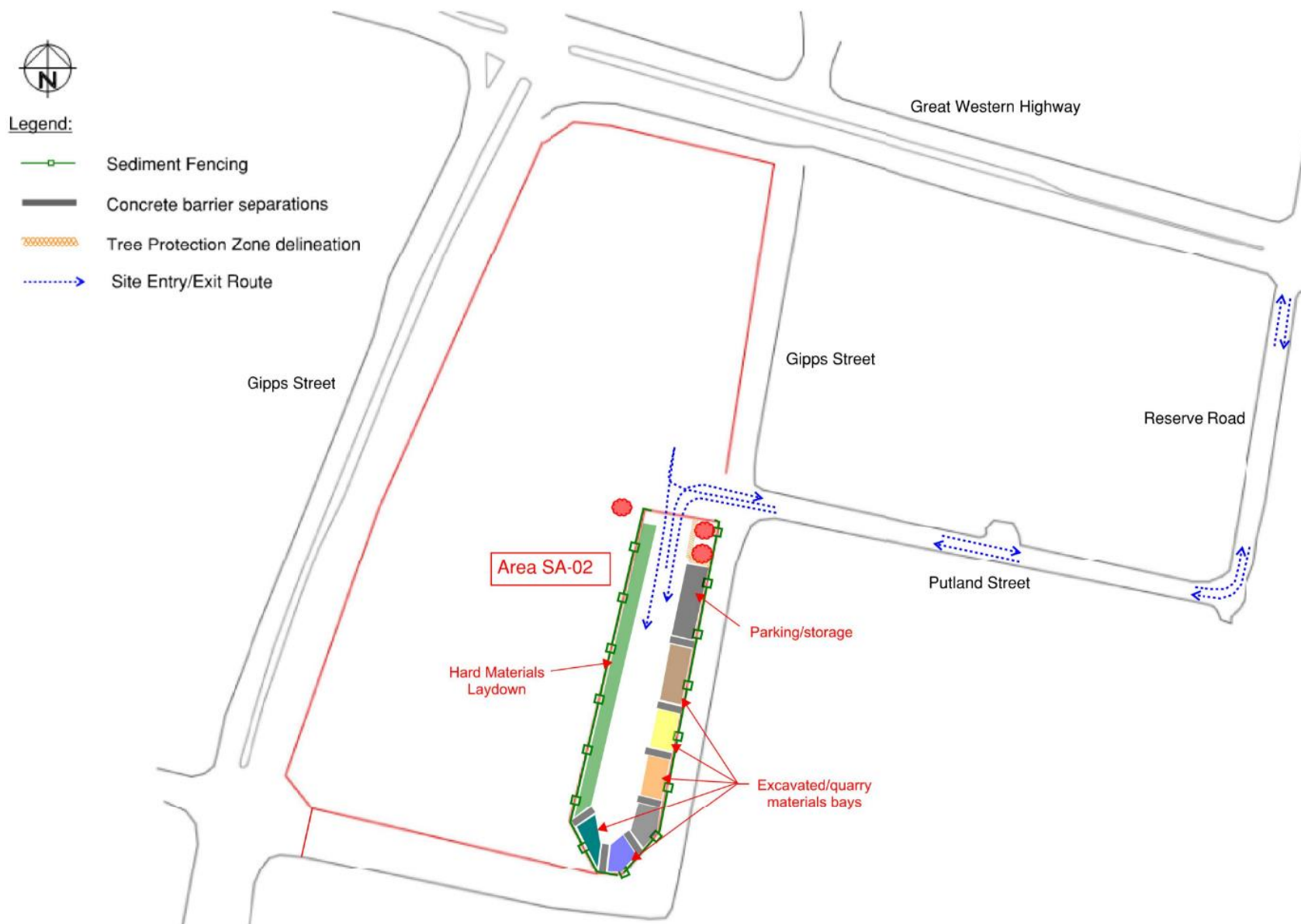


Figure 10 Indicative Ancillary Facility Area SA-02 site layout

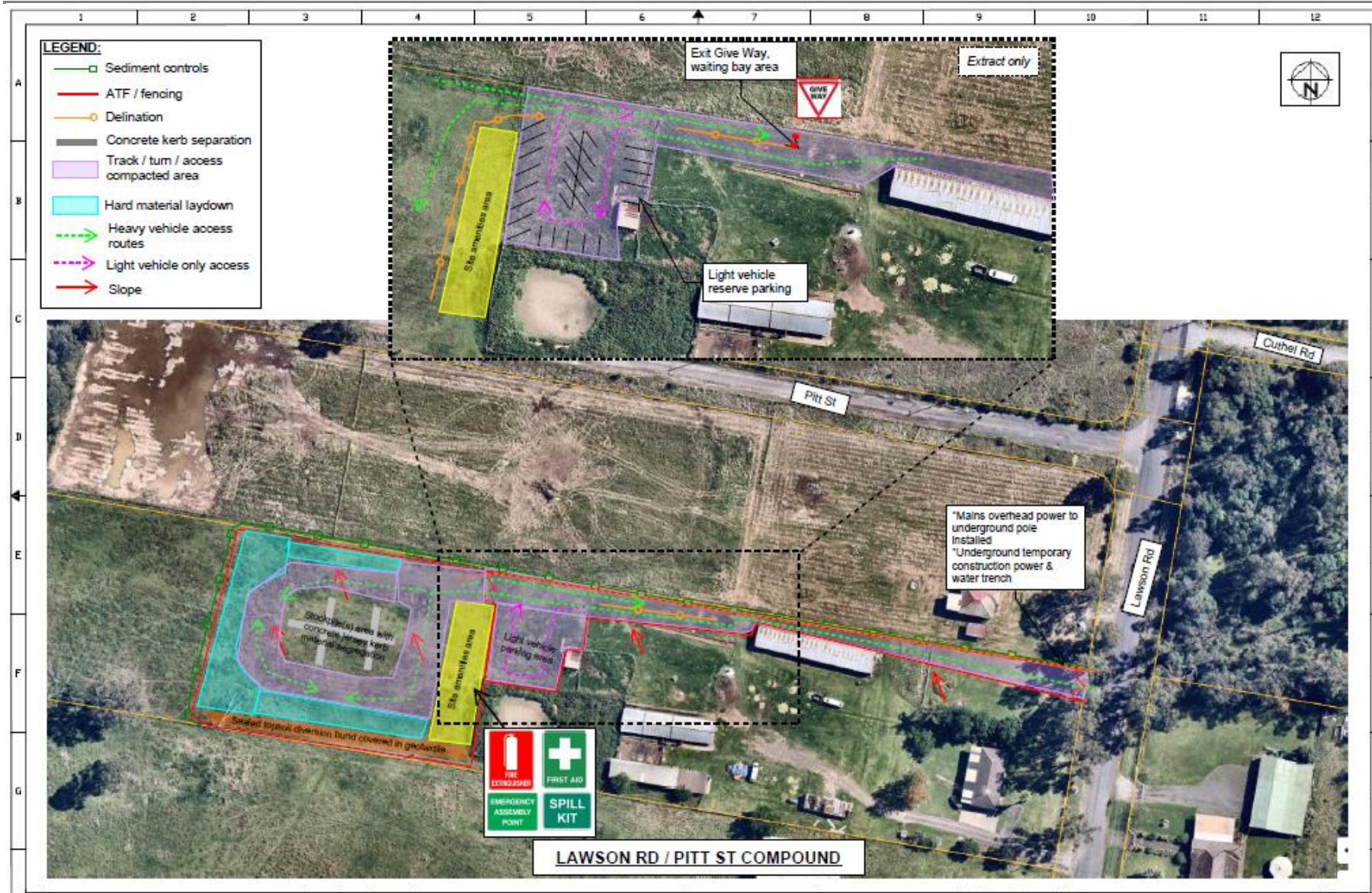


Figure 11 Indicative location and arrangement of the Lawson Road Ancillary Facility

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
 - Grubbing of pasture grass and the stripping and stockpiling of topsoil, 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 Sub-Plan (CNVMP). Refer to [Section 6.6](#) for more information on Project working hours.

5. Review and Approval

5.1 Internal consultation

The development of the CEMP, Procedures and Monitoring Programs involve a detailed internal review of the documentation by the Quickway Environment Manager, Project Manager and Project Engineer(s)

Following Quickway satisfaction of the documents, a review process will be completed with Sydney Metro, and documents will be submitted to the Environmental Representative (ER) for review and endorsement as described in Section 4.3.4 of the Project Staging report.

5.2 External consultation

Prior to submission for endorsement external consultation for the CEMP, Procedures and Monitoring Programs (as required) will be undertaken with relevant stakeholders, agencies, and other relevant regulatory authorities as identified in the Section 4.3.4 of the Project Staging Report. The process for consultation, endorsement and subsequent approval is detailed in [Table 5-1](#).

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, where appropriate based on the Staging report.

Table 5-1 CEMP consultation and approval requirements as identified in the Project Staging Report

Stakeholders			
Document	MCoA	ER	Government Agency / Stakeholders
CEMP	C2 C3 C4 C10	E	C*

(A = Approval required, C = consultation required, E = endorsement required, * = Discretion of Sydney Metro)

5.3 Approval

In accordance with MCoA 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 staged no later than one (1) month before the commencement of that stage. 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.

Construction of the relevant phase must not commence until the CEMP have been endorsed by the ER. The CEMP as endorsed by the ER including any minor amendments approved by the ER, must be implemented for the duration of construction.

As described in Section 4.3.4 of the Project Staging 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 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 J](#) for outcomes of the risk assessment workshop.

6.2 Regulatory requirements and compliance

6.2.1.1 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 [6.4](#) of this CEMP.

6.2.1.2 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 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 6-1](#) are required for the Project.

Table 6-1 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	Prior to commencement of works	EIS Approved 26/07/2021
Section 143 notice of POEO Act	EPA	Prior to transportation of waste to receiving facility	Ongoing
Road Occupancy Licences (RoLs)	TfNSW Councils WSA	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).

6.2.1.3 Guidelines

Additional guidelines and standards relating to the environmental management of the Power Enabling Works include the following:

- Managing Urban Stormwater: Soils and Construction. Landcom, (4th Edition) March 2004 (reprinted 2006) Volume 1, and NSW Department of Environment, Climate Change and Water, 2008. Volume 2D, (commonly referred to as the "Blue Book").
- Acid Sulfate Soil Manual: Acid Sulphate Soil Management Advisory Committee of NSW; (ASSMAC 1998),
- National Acid Sulfate Soils Guidance (DAWE 2018)
- ANZG (2018). Australian and New Zealand Guidelines for Fresh and Marine Water Quality (known as 'ANZG Guidelines'),
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ 2000),
- Department of Environment and Conservation (DEC): Bunding & Spill Management. Insert to the Environment Protection Manual for Authorised Officers - Technical section November 1997,
- Waste Classification Guidelines – Part 1: Classifying Wastes, NSW EPA (2014).
- Waste Classification Guidelines, Part 4: Acid Sulfate Soils
- Addendum to the Waste Classification Guidelines –Part 1: classifying waste
- NSW Waste Avoidance and Resource Recovery Strategy 2014-2021

- NSW Government's Waste Reduction and Purchasing Policy (WRAPP)
- Guidelines on the duty to report contamination under the Contaminated Land Management Act 1997 (NSW EPA 2015)
- Guidelines for the Assessment and Management of Groundwater Contamination (NSW DECC, 2007)
- Managing Asbestos in or on Soil (SafeWork NSW, 2014)
- NSW Interim Construction Noise Guideline (ICNG) (DECC, 2009)
- Construction Noise and Vibration Standard (CNVS) (Sydney Metro)
- Noise Policy for Industry (NPfI) (NSW EPA, 2017)
- NSW Road Noise Policy (RNP) (DECCW 2011)

6.2.2 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 chapters within the CEMP 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 activities have been identified as High Risk and will be the subject of an activity specific EWMS:

- Horizontal Directional Drilling / Underboring

6.2.3 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:

- A current representation of the site, including the work areas and boundaries
- 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
- Native vegetation and Endangered Ecological Communities (EECs).
- Contamination, including potential or actual acid sulphate soil areas and contaminated sites

Prior to use, the ECM's must be endorsed by the Quickway Environmental Manager or delegate.

ECMs, which have been developed in accordance with Section 3.6 of the CEMF, will be used in conjunction with EWMS to help identify key risk areas and to promote ongoing communication to construction personnel during the Project. The EWMS and associated ECM's will include a sign-off sheet for all workers to agree to the requirements of the EWMS and ECMs prior to the commencement of work on a specific site, or a specific activity.

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.

6.2.4 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.

6.3 Resources, responsibility, and authority

6.3.1 External

Environmental Representative (ER)

A suitably qualified and experienced ER has been approved by the Secretary in accordance with MCoA A28. The ER will fulfil the requirements of MCoA A32 and any other MCoA that require the ER’s involvement.

6.3.2 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 A33) 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).
- Respond to and undertake incident reporting in accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure (refer to Section [6.8.2](#)).
- Provide incident and non-conformance notifications as required under the Planning Approval (refer to Section [6.8.2](#)).

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.

6.3.3 Quickway

The internal roles with environmental responsibilities are detailed below, and summarised in Table 6-2 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.
- Authority to stop work immediately if an unacceptable impact on the environment is likely to occur.

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.
- Authority to 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 this CEMP, Sub-plans and 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.

- Authority to 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 A33) 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).
- Undertake incident reporting in accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure (refer to Section [6.8.2](#)).
- Provide incident and non-conformance notifications as required under the Planning Approval (refer to Section [6.8.2](#))

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.
- Authority to 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 procure 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 CEMP, 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 (i.e. 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 6-2 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: <ul style="list-style-type: none"> Sydney Metro through monthly progress meetings, the Monthly Report and ad hoc meetings when required. the ER when required. 	>5 years managing major civil infrastructure projects
Project Manager	Reports to Senior Project Manager	Will interface with: <ul style="list-style-type: none"> Sydney Metro through monthly progress meetings and ad hoc meetings when required. the ER 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: <ul style="list-style-type: none"> 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. the ER in the preparation of 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: <ul style="list-style-type: none"> Sydney Metro, the ER during site inspections and in ad hoc meetings when required. 	Experience managing major civil infrastructure projects
Project/Site Engineers	Reports to Project Manager	Will interface with: <ul style="list-style-type: none"> Sydney Metro, the ER 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: <ul style="list-style-type: none"> Sydney Metro, the ER when required. 	Various

6.3.4 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

Ecologist

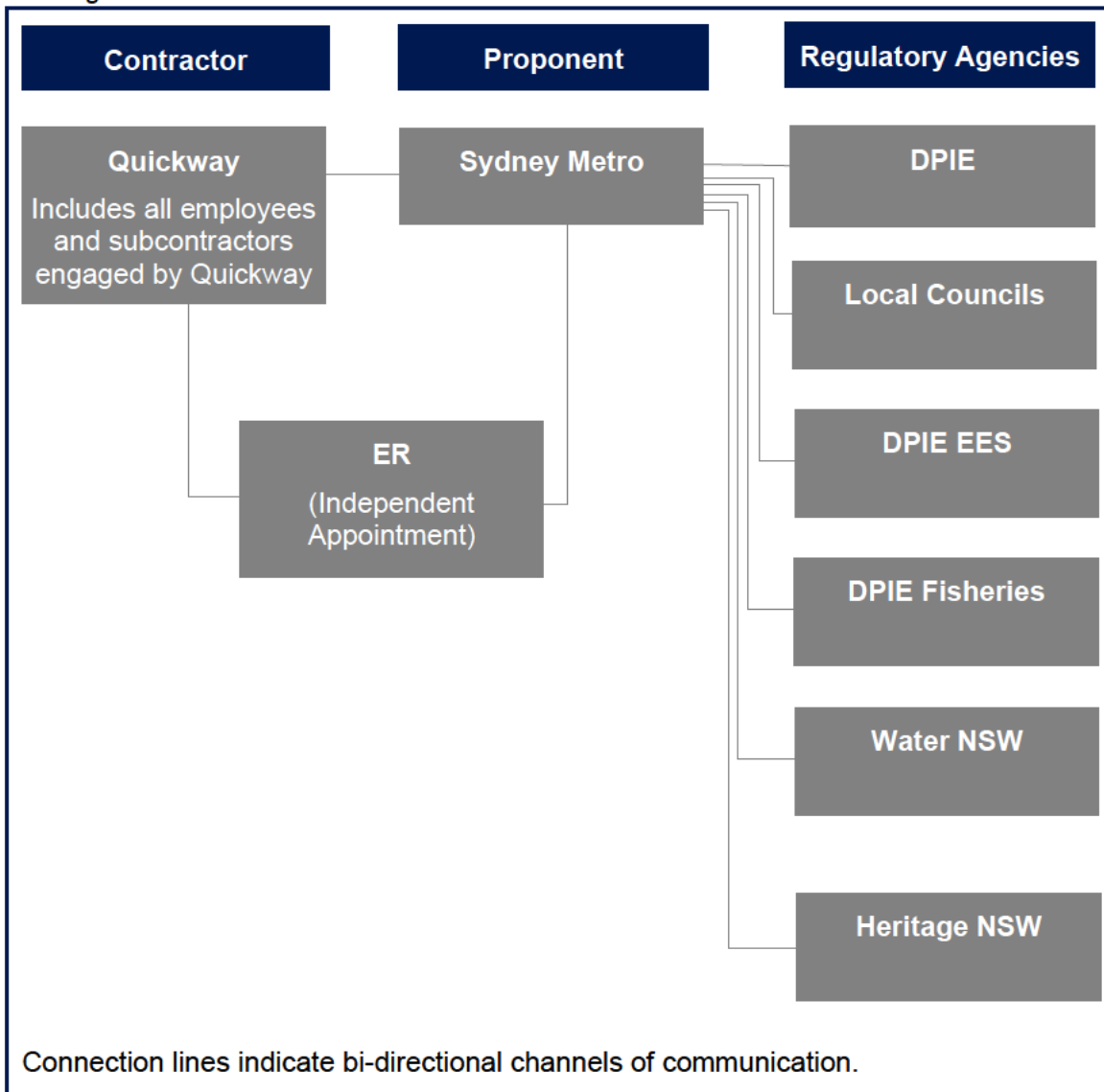
- Provide technical advice where required
- Undertake pre-clearing inspections
- Prepare pre-clearing and post-clearing reports

Be available during clearing and throughout the works for fauna capture and release as required.

6.4 Stakeholder relationships

The relationship between the Quickway, Sydney Metro, key regulatory agencies, the independent ER are represented in Figure 12. All sub-contractors engaged by the Principal Contractor will be required to operate in accordance with the Quickway EMS and all environmental documentation.

Figure 12 Stakeholder Relationships and communication channels for environmental documentation and management.



6.5 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). This section has been developed in accordance with Section 3.11 of the CEMP.

6.5.1 Environmental induction

All personnel (including subcontractors) are required to attend a compulsory site induction that includes an environmental component before commencing work on site. This is 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.
- Topic specific issues around environmental aspects that are critical to each of the Portions of work, including those issues identified in the CEMP Sub-plans. Additional training for some aspects may be required in addition to the induction.
- 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 (i.e. sensitive area plans/ECMs).
- 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.

6.5.2 Targeted Environmental Training

Targeted environmental training will be provided to individuals or groups with a specific authority or responsibility for environmental management, those undertaking an activity with a high risk of environmental impact or to ensure the competency of the relevant project team members is appropriate for their responsibilities. Where practicable environmental training will be accredited training. Training may be delivered by external providers where appropriate or be provided by the Quickway Environmental Manager. Environmental training may include topics as summarised in Table 6-3.

6.5.3 Training Needs Matrix

The initial training needs matrix has identified the required knowledge and competence in relation to environmental management for the project as well as project specific environmental knowledge and awareness. The training identified in Table 6-3 is not exhaustive and will be reviewed as part of CEMP review process. The Power Enabling Works is expected to be completed between six - nine months and therefore refresher training to maintain competency is not considered necessary. Refresher training may be required to be carried out in response to incidents or non-conformances.

Table 6-3. Initial Training Needs Matrix.

Topic / Course	Senior Project Manager	Project Manager	Supervisors	Engineers	Environmental	Foreman / Supervisor	Leading Hands	Labourers	Subcontractors
Project induction	x	x	x	x	x	x	x	x	x
CEMP on-boarding	x	x	x	x	x	x			
Project approvals, licences, obligations and requirements	x	x		x	x				
Out of hours works approvals and permit processes and requirements		x	x	x	x	x			x
Dewatering of sediment control basins / water treatment plants			x	x	x	x	x	x	x
Environmental incident identification, response and management		x	x	x	x	x	x	x	x
Erosion and sediment control techniques and practices				x	x	x	x	x	x
Environmental noise and vibration monitoring				x	x				

Environmental management obligations and due diligence	x	x	x		x				
Erosion and Sediment Control – Blue Book					x				
Practical erosion and sediment control for the workforce				x	x	x	x		
Selecting and installing erosion and sediment control measures				x	x	x	x	x	
Asbestos awareness			x	x	x	x	x	x	x

6.5.4 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.

6.5.5 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.

6.6 Working Hours

Working hours are set by MCoA E38. Standard construction hours as approved in MCoA E38 are as follows:

- Monday to Friday: 7:00 am to 6:00 pm
- Saturday: 8:00 am to 1:00 pm
- At no times on Sundays and Public Holidays.

The *Environmental Planning and Assessment (COVID-19 Development – Infrastructure Construction Work Days No. 2) Order 2020* allows work to be carried out during the following hours on Saturdays, Sundays and Public Holidays:

- Saturday: 1:00 pm – 6:00 pm
- Sunday and Public Holidays: 7:00 am to 6:00 pm

During these hours no highly noise intensive work is permitted and all reasonable and feasible measures will be undertaken to minimise noise. The Order is in-force until the 31 March 2022. After that date, the approved hours must be adhered to.

In accordance with MCoA E39, 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 E41, or if they are undertaken as per the Out-of-Hours Work (OOHW) Protocol required under MCoA E42.

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

6.7 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 OCCS and manage all relevant responsibilities on behalf of Quickway.

6.7.1 Internal Communication

Clear lines of communication throughout all levels and functions (e.g. 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, 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 [6.4](#).

6.7.2 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 and the ER. 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 following consultation, updates will be recorded in the relevant version control section(s) and reapproval will sought as per Section [6.12](#).

6.7.3 Community liaison and/or notification

An Overarching Community Consultation Strategy (OCCS) has been prepared by Sydney Metro in accordance with Section 4.2 of the CEMF 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 OCCS 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(a), (b), (c) and (d).

6.7.4 Complaints management

The OCCS 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 weekly basis or as requested, in accordance with MCoA A33.

As per MCoA B7-B10, Sydney Metro has appointed a Community Complaints Mediator to provide independent mediation services for any reasonable and unresolved complaint referred by the ER where a member of the public is not satisfied by the Proponent's response.

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

6.8 Emergency and incident response

6.8.1 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 in accordance with Section 3.12 of the CEMF. 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.

It should be noted that the MCoA define an incident as:

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

Where an incident triggers this definition, the process described in Section 6.8.2.3 must be followed.

Material harm is defined in the MCoA as:

Is harm that:

(a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or

(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred

in taking all reasonable and practicable measures to prevent, mitigate or make good the harm to the environment)

6.8.2 Reporting

6.8.2.1 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.

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.

6.8.2.2 EPA

The Quickway 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.

6.8.2.3 DPIE

The Department must be notified by phone or in writing to compliance@planning.nsw.gov.au immediately after the Proponent becomes aware of an incident in accordance with MCoA A41. An incident is defined in the MCoA as "An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance with the terms of this approval". 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 I](#)) of the SSI Project Approval.

In accordance with MCoA A44, 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.

6.8.2.4 Non-compliances, non-conformances

An environmental non-compliance is a breach of an environmental requirements identified in the MCoAs, other project requirements documented in the CEMP, sub-plans and other management plans. Non-compliances can be identified during incident investigation, audits or through a complaint investigation. They can also be identified by the ER during audits and surveillance activities.

Non-compliance and Corrective Action report will be issued in accordance with Sydney Metro – Western Sydney Airport Environmental Incident and Non-Compliance Reporting Procedure (SM-17-00000096). A record of non-compliances identified by any means, including the immediate and ongoing actions to minimise impact and prevent recurrence, will be managed within an Environmental Incident and Non-compliance Register, which would include all non-compliances, corrective action and preventative actions.

In the case of a non-compliance, the Environment Manager would notify Sydney Metro and the ER within 48 hours of the non-compliance being confirmed. The non-compliance notification would address the information requirements of MCoA A44. From here, notification of the non-compliance will be made to the Planning Secretary by Sydney Metro in accordance with MCoA A45. However, it is noted that a non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

All non-compliances will be assessed with the purpose to minimise recurrence and if necessary implementing preventative measures. Any changes to Plans and Procedures recommended as a result of an investigation will be recorded and updated during the planned review processes.

6.9 Monitoring, inspections and auditing

6.9.1 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 A36, 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 Western Sydney Airport Project, and will be undertaken in compliance with the following requirements:

- MCoA A38: Proposed independent auditors must be approved by the Planning Secretary before the commencement of an Independent Audit.
- MCoA A39: 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 A40: 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 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 three-monthly basis following the commencement of construction.

A summary of proposed audits and compliance reviews is provided in [Table 6-4](#).

Table 6-4 Audits and Compliance Review summary

Action	Frequency	Content	Reporting
Internal Audit	Annually (or once during the project if duration of the Project is less than once a year).	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 A37)	Within 12 weeks of the commencement of construction. 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 <i>Independent Audit Post Approval Requirements</i> (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 A32	ER 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 A26	As determined by DPIE
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 three-monthly basis following the commencement of construction.

6.9.2 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 Foreman.

6.9.3 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 visual amenity 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 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.

6.9.4 External inspections

The ER 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.

6.9.5 Environmental Review Group Inspections

Environmental Review Group (ERG) inspections will be offered during construction and may 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.

6.9.6 Noise and Vibration Monitoring

Although the requirement for a specific Noise and Vibration Monitoring Program has been specifically excluded from Quickway's scope in allocated MCoAs, Quickway will complete noise and vibration monitoring as required to assess compliance with predicted noise and vibration levels stated in the DNVIS, during OOHV and in response to complaints.

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.

In general, vibration monitoring will be conducted during vibration generating activities that have the potential to impact adjacent buildings, 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.

6.9.7 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 minimise dust generation and reduce air quality and 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.

6.10 Records of environmental activities

6.10.1 Environmental records

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

In accordance with the CEMP 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 (e.g. CEMP 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 and Air Quality

- Copies of current ESCPs for all active construction sites
- Records of soil and water inspections undertaken
- Records of testing of any water prior to reuse
- Records of any meteorological condition monitoring;
- Records of any management measures implemented as a result of adverse, windy weather conditions; and
- Records of air quality and dust inspections undertaken.

Visual Amenity

- Records of any inspection including checking the health of retained vegetation around site boundaries, checking the condition of any site hoarding, and checking the position and direction of any sight lighting.

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.

Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits will be produced by Quickway. These reports will be submitted to Sydney Metro on a three-monthly basis as outlined in Table 6-4.

6.10.2 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.

Audit reports that are required as part of the Infrastructure Approval, will be provided to Sydney Metro to make available on the Sydney Metro Website in accordance with MCoA B11.

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.

6.11 Management review

The Quickway Environmental Manager will review the CEMP and its operation and implementation approximately bi-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 [6.12](#).

6.12 Document updates

This CEMP 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.

Any changes to CEMP will be endorsed by the ER.

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

7. Environmental Management

The relevant Sub-Plans, Procedures, Strategies, 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.

As described in Section 4.3.3 of the Project Staging Report (Rev 4.0), the stage of work associated with the Power Enabling Works has been categorised as having a low residual risk. Therefore, category risks are only required to be addressed in the main CEMP document only ('CEMP') rather than within separate Sub Plans. Although this is the case, Quickway have developed a Noise and Vibration Sub-plan and a Waste and Recycling Sub-plan to assess and describe the management of these aspects.

The following chapters describe the applicable Environmental Aspects or risks, and describe their respective management requirements.

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 Staging Report required under MCoA A13.

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 7-1](#)
- CEMF requirements are listed in [Table 7-2](#)
- Project mitigation measures (including the relevant REMMs) are identified in Table 7-5

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](#).

Table 7-1 Ministers CoAs relevant to biodiversity management

MCoA	Requirement	Document Reference
C11	In addition to the relevant requirements of the CEMF, the Flora and fauna CEMP Sub-plan must include, but not be limited to:	
	(a) details of how the requirements of Condition E11 will be met;	Section 7.1.4
	(c) protocols for incidental finds of threatened species and ecological communities within the construction boundary. Note: MCoA C11 sub-clauses (a) and (c) were identified as the only sub-clauses that Quickway are responsible for, as identified in the Staging Report.	Section 7.1.4
E2	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 7.1.3
E3	Impacts to plant community types must not exceed those identified in the documents listed in Condition A1 of this Exhibit, 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 E4 below, if required, must be provided.	Section 7.1.4
E11	Nest Boxes must be installed one (1) month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna.	Section 7.1.4
E12	Prior to vegetation clearing, the Proponent must identify where it is practicable for the CSSI to reuse native trees and vegetation that are to be removed. If it is not possible for the CSSI to reuse removed native trees and vegetation, the Proponent must consult with the relevant council(s), NSW National Parks & Wildlife Service, Western Sydney Parklands Trust, Greater Sydney Local Land Services, Landcare groups, DPI Fisheries and any additional relevant government agencies to determine if:	Section 7.1.4
	(a) hollows, tree trunks (greater than 25-30 centimetres in diameter and 2-3 metres in length), mulch, bush rock and root balls salvaged from native vegetation impacted by the CSSI; and	Section 7.1.4
	(b) collected plant material, seeds and/or propagated plants from native vegetation impacted by the CSSI, could be used by others in habitat enhancement and rehabilitation work, before pursuing other disposal options.	Section 7.1.4

Table 7-2 CEMF requirements relevant to biodiversity management

CEMF Ref.	Requirement	Document Reference
SMW Construction Environmental Management Framework		
10.2b	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 the Contractor's Environmental Manager (or delegate). The pre-clearing inspection will include, as a minimum: <ul style="list-style-type: none"> • Identification of hollow bearing trees or other habitat features; • Identification of any threatened flora and fauna; • A check on the physical demarcation of the limit of clearing; • An approved erosion and sediment control plan for the worksite; and • The completion of any other pre-clearing requirements required by any project approvals, permits or licences. 	Section 7.1.4
	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 7.1.4
	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 7.1.4
10.2c	The Principal Contractor's regular inspections will include a check on the ecological mitigation measures and project boundary fencing.	Section 7.1.4
10.2d	The following compliance records would be kept by the Principal Contractor:	
	i. Records of pre-clearing inspections undertaken;	Section 6.9 Section 7.1.4
	ii. Records of the release of the pre-clearing hold point; and	Section 6.9 Section 7.1.4
	iii. Records of ecological inspections undertaken.	Section 6.9 Section 7.1.4
10.3a	i. Areas to be retained and adjacent habitat areas will be fenced off prior to works to prevent damage or accidental over clearing;	Section 7.1.4

CEMF Ref.	Requirement	Document Reference
	ii. Clearing will follow a two-stage process as follows:	Section 7.1.4
	<ul style="list-style-type: none"> Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and 	Section 7.1.4
	<ul style="list-style-type: none"> Habitat trees will be cleared no sooner than 48 hours after non-habitat trees have been cleared. A suitably qualified ecologist will be present on site during the clearing of habitat trees. Felled habitat trees will be left on the ground for 24 hours or inspected by the ecologist prior to further processing. 	Section 7.1.4
	iii. Weed management is to be undertaken in areas affected by construction prior to any clearing works. Off-airport weed management will be undertaken in accordance with the NSW Noxious Weeds Act 1993.	Section 7.1.4

7.1.1 Management Objectives and performance outcomes

The CEMF flora and fauna management objectives include:

- i. Minimise impacts on flora and fauna;
- ii. Design waterway modifications and crossings to incorporate best practice principles;
- iii. Retain and enhance existing flora and fauna habitat wherever possible;
- iv. Appropriately manage the spread of weeds and plant pathogens

The Submissions Report identified specific construction performance outcomes for the Project; those relevant to the management of flora and fauna for the Power Enabling Works are included in Table 7-3.

Table 7-3 Relevant performance outcomes

Performance Outcome Requirement	Construction Performance Outcomes	Key Performance Indicators
The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity	<ul style="list-style-type: none"> Minimise or where possible avoid impacts on threatened flora and fauna species, and ecological communities listed under the Biodiversity Conservation Act 2016 (NSW) and Environment Protection and Biodiversity Conservation Act 1999 (Cth) Manage groundwater drawdown at Orchard Hills to avoid or minimise impacts on groundwater dependent ecosystems No removal of any vegetation within the Thompsons Creek riparian zone or any adjacent areas that are non-certified under the South West Growth Area 	<p>Vegetation removal would only occur after a pre-clearance survey undertaken by an ecologist has occurred and would only occur within the bounds outline by the ecologist.</p> <p>Only the minimum amount of vegetation would be removed as required and would be delayed until necessary.</p> <p>Note: No intrusive work is proposed in the Thompsons Creek riparian zone or any adjacent non-certified areas.</p>

7.1.2 Existing Environment

The biodiversity assessment of the Project EIS primarily investigated the areas off-airport that are to the north of the Western Sydney Airport land. The area to the south of the Western Sydney Airport was excluded from the assessment as it is covered by the South-West Growth Centre Strategic Assessment.

Landscape Context

Blaxland Creek, Cosgroves Creek and a number of other un-named tributaries and waterways are identified in the EIS. However, Badgerys Creek and South Creek will also be a part of the existing environment that will be potentially impacted by the Power Enabling Works as a result of the proposed underbores of these creeks as part of the scope.

The off-airport study area contains highly fragmented landscapes with connectivity that is limited to riparian corridors, and road verges, which have been subject to varying levels of clearing and disturbance. A large patch of woodland is located along Cross Street, bordered by Elizabeth Drive and Western Road, which was not identified in the EIS, which the Power Enabling Work will be carried out immediately adjacent.

The construction footprint for the Power Enabling Works is not located within the Western Sydney Airport biodiversity offset area, which is located primarily within the Defence Estate Orchard Hills, and would have no direct or indirect impacts to this area.

Native Vegetation and Threatened Ecological Communities

Four plant community types (PCT) were recorded in the off-airport study area in the EIS:

- PCT 724 – Broad-leaved Ironbark – Grey Box – *Melaleuca decora* grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin Bioregion
- PCT 835 – Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion
- PCT 849 – Grey Box – Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion
- PCT 1800 – Swamp Oak open forest on river flats of the Cumberland Plain and Hunter Valley.

As the Power Enabling Works are not located within the study area, additional desktop mapping was carried out to determine the plant community types that may be impacted by the proposed work.

Publicly available mapping shows that some additional PCT's are located within the study area of the Power Enabling Work, which include:

- PCT 833 - Hard-leaved Scribbly Gum - Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin Bioregion
- PCT 725 - Broad-leaved Ironbark - *Melaleuca decora* shrubby open forest on clay soils of the Cumberland Plain, Sydney Basin Bioregion

Both of these PCT's are located in the block bordered by Cross Street to the South, Elizabeth Drive to the North, Western Road to the West and Devonshire Road to the East. Trenching for the Power Enabling Work is proposed on the southern side of Cross Street, and is therefore not expected to impact these PCT's. It should also be noted that these PCT's are located in the area identified to be part of the South-West Growth Centre Strategic Assessment.

Threatened Fauna

Threatened fauna identified in the EIS as potentially occurring within the off-airport Project study area include: Little Eagle (*Hieraaetus morphnoides*), Cumberland Plain Land Snail (*Meridolum corneovirens*), Southern Myotis (*Myotis Macropus*).

Twenty-four species listed as threatened under the EPBC Act were predicted to occur in the Predicted Matters Search Tool. Of these, one fauna species, the Grey-headed Flying-fox, was recorded foraging in the off-airport study area. As there are no roosting camps within the off-airport study area it has not been considered further as a species credit species; however, it has been included as an ecosystem credit species in the EIS.

Groundwater Dependent Ecosystems

Groundwater dependent ecosystems (GDEs) were identified in the EIS within 10 kilometres of the off-airport study area comprise:

- Cumberland Plain Woodland in the Sydney Basin Bioregion listed as Critically Endangered under the BC Act (PCT 849)
- 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 (PCT 835)

- Shale Gravel Transition Forest in the Sydney Basin Bioregion listed as Endangered under the BC Act (PCT 724)
- Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions listed as Endangered under the BC Act (PCT 1800).

As the Power Enabling Works are not expected to impact regional groundwater levels, GDE's have not been considered further in this CEMP.

Aquatic Ecology

The off-airport study area is located entirely within the South Creek catchment within the larger Hawkesbury catchment. South Creek, a major tributary of the Hawkesbury-Nepean catchment, flows in a generally northerly direction from its headwaters near Narellan through to Windsor where it joins the Hawkesbury River.

The catchment is highly impacted due to a mix of rural and urban land uses and major infrastructure including roads and rail and has been altered from its natural state (refer to Chapter 19 (Land use and property)). The catchment of South, Badgerys Cosgroves and Blaxland creeks consists of gently sloping rural residential land that is largely cleared.

A summary of fish habitat and waterway classifications within the off-airport study area that are potentially impacted by the Power Enabling Works is provided in Table 7-4. The desktop searches returned three threatened fish listed under the EPBC Act as having the potential to occur within the locality: Australian Grayling, Macquarie Perch and Murray Cod. The Australian Grayling and Macquarie Perch are also listed as threatened species under the FM Act. A further two threatened invertebrate species listed under the FM Act, Adam's Emerald Dragonfly or the Sydney Hawk Dragonfly may also occur in the locality as identified in the Western Sydney Airport Environmental Impact Statement - Biodiversity Assessment (Department of Infrastructure and Regional Development, 2016e).

No wetlands of international importance occur within the study area or broader locality.

Table 7-4 Summary of fish habitat and waterway classifications within the off-airport study area

Rivers and Streams	Strahler Order	Mapped Key Fish Habitat	Habitat Sensitivity (NSW Department of Primary Industries 2013)	Waterway Classification (fish passage)
South Creek	5 th	Yes	Type 1 – Highly sensitive key fish habitat	Class 2 (moderate fish habitat)
Badgerys Creek	5 th	Yes	Type 2 – Moderately sensitive key fish habitat	Class 2 (moderate fish habitat)

7.1.3 Potential Impacts

The main potential impacts on biodiversity during the construction of the Power Enabling Works would be:

- clearing of a minor amount of native vegetation as a result of trenching along the alignment to install the conduits for the cables
- clearing of unexpected threatened ecological communities, threatened species and/or their habitat

- unforeseen impacts to South Creek or Badgerys Creek as a result of an issue with the underbore works under these waterways.

No threatened fish species listed under the FM Act or EPBC Act were recorded or considered likely to occur within the study area (both off-airport and on-airport) and as such the project is unlikely to significantly impact any threatened aquatic species or their habitats.

The design for the Power Enabling Work has been developed to minimise any impacts on native vegetation and biodiversity in the following ways:

- Badgerys Creek and South Creek crossings have been designed to be underbores to minimise the impacts on the waterways, the riparian vegetation and the riparian zone in general.
- Additional road crossings along Badgerys Creek Road have been designed to avoid large habitat and hollow bearing trees.
- Portion 1 has been re-designed to be an underbore to minimise the impact on the native vegetation along Patons Road that would have otherwise been caused by trenching this section.
- Trenching is proposed on the southern side of Cross Street which will avoid impacting the mapped PCT's 725 and 833.

7.1.4 Mitigation Measures

The specific measures and requirements to address flora and fauna impacts are outlined in Table 7-5. Note that the Revised Environmental Mitigation Measures (REMMs) are from the SM WSA Submissions Report.

Table 7-5 Biodiversity mitigation measures

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
Proposed ancillary sites	FF1	Site offices, site compounds and ancillary facilities will be located in areas where there are limited biodiversity values (e.g. cleared land)	REMM FF1	Ancillary site plan/layout	Prior to establishment of ancillary sites	Project Manager Environment Manager
All	FF2	Removal of vegetation would be delayed until it is necessary.	REMM FF1	Site inspections Project planning and programs.	Construction	Project Manager Environment Manager
All	FF3	The removal of hollow-bearing trees, will be avoided, where possible	REMM FF1	Design Site inspections	Pre-construction Construction	TfNSW Project Manager Environment Manager
All	FF4	A qualified surveyor and suitably qualified ecologist will mark out exclusion zones and clearing/project boundaries prior to construction.	REMM FF1 CEMF 10.3(i)	Survey records Pre-construction report	Pre-clearing	Project Manager Environment Manager
All	FF5	Opportunities for salvage and storage of felled native trees for potential use in landscape design will be investigated.	MCoA E12 REMM FF11	Meeting minutes with TfNSW	Pre-clearing	TfNSW Project Manager Environment Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	FF6	Where re-use of native vegetation cannot be reused in the landscaping plan, relevant council(s), NSW National Parks & Wildlife Service, Western Sydney Parklands Trust, Greater Sydney Local Land Services, Landcare groups, DPI Fisheries and any additional relevant government agencies will be consulted to determine whether any hollows, tree trunks (greater than 25-30 centimetres in diameter and 2-3 metres in length), mulch, bush rock and root balls can be reused by these stakeholders.	MCoA E12(a) REMM FF11	Consultation records	Pre-clearing	TfNSW Project Manager Environment Manager
All	FF7	<p>If hollow-bearing trees are required to be removed as part of the Power Enabling Works, a Nest Box Strategy will be prepared. The next box strategy will include:</p> <ul style="list-style-type: none"> • A process to mark/tag and map prior to removal. • The size, type, number and location of nest boxes would be based on the results of the pre-clearing assessment. • Nest boxes will be installed one month prior to the removal of hollow-bearing trees, unless otherwise agreed with TfNSW. 	MCoA E11 REMM FF2	Pre-clearing report Nest Box Strategy (if required)	<p>Pre-clearing.</p> <p>Nest boxes to be installed one month prior to removing hollow bearing trees (if required).</p>	Project Manager Environment Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	FF8	<p>If hollow-bearing trees are required to be removed as part of the Power Enabling Works, clearing will follow a two-staged process:</p> <ul style="list-style-type: none"> Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and Habitat trees will be cleared no sooner than 48 hours after non-habitat trees have been cleared. A suitably qualified ecologist will be present on site during the clearing of habitat trees. Felled habitat trees will be left on the ground for 24 hours or inspected by the ecologist prior to further processing. 	CEMF Section 10.3(ii)	<p>Site inspections</p> <p>Post-clearing report</p>	During clearing of habitat/hollow bearing trees.	Project Manager Environment Manager
All	FF9	If demolition of any structures or dwellings is required, a targeted microbat survey (including Eastern Coastal Free-tailed Bat, Large Bent-winged bat and Eastern False Pipistrelle) will be undertaken in accordance with the 'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method (OEH, 2018)	REMM FF4	Micro-bat survey (if required)	Prior to demolishing a structure or dwelling	Project Manager Environment Manager
All	FF11	During construction, shading and artificial light impacts would be minimised in areas adjoining remnant bushland that is in intact condition.	REMM FF6	Site inspections	During construction	Project Manager Environment Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	FF12	Weed management measures will be implemented in accordance with the Weed Management Procedure (Appendix E) to prevent the introduction and spread of weeds including exotic vines and scramblers, <i>Olea europaea</i> (African Olive), <i>Chrysanthemoides monilifera</i> , <i>Lantana camara</i> , and exotic perennial grasses.	REMM FF10 CEMF 10.3(iii)	Plant Inspections. Pre-start inspections. Site diaries. Site inspections.	Pre-construction. During construction.	Project Manager. Environment Manager. Site supervisor. Operators.

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	FF13	<p>Pathogen management measures to prevent the introduction and spread of pathogens including amphibian chytrid, <i>Phytophthora implementa</i>, and Exotic Rust Fungi of the order Pucciniales. Measures will include:</p> <ul style="list-style-type: none"> Identify high-risk areas as part of the pre-clearing assessment. Vehicle and plant inspections prior to commencing work on the project to ensure they are clean of any dirt, mud or vegetation material. Plant and equipment will be cleaned prior to being floated to a new work-site. Avoid wet and water-logged areas during construction, wherever possible. Use established access tracks wherever possible. When working in identified high-risk areas, hygiene protocols will be implemented, such as equipment and boot-wash facilities. <p>Where possible, exclude access to high-risk areas that are identified as part of the pre-clearing assessment.</p>	REMM FF10	<p>Pre-clearing Report</p> <p>Pathogen Management Protocols (as required).</p> <p>Plant Inspections.</p> <p>Pre-start inspections.</p> <p>Site diaries.</p> <p>Site inspections.</p>	<p>Pre-construction.</p> <p>During construction.</p>	<p>Project Manager.</p> <p>Environment Manager.</p> <p>Site supervisor.</p> <p>Operators.</p>
All	FF14	Quickway will assist Sydney Metro, as required, in a native vegetation seed collection and salvage program.	FF11 MCoA E12(a)	Meeting minutes.	Prior to clearing (if required)	Project Manager. Environment Manager.

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	FF15	If an unexpected threatened species, or threatened ecological community is discovered during construction, work will cease in the vicinity of the unexpected find, and the Project Ecologist called to attend the site to advise the next course of action.	MCoA C11	Unexpected find records	Construction	All

7.2 Waste and Recycling

Owing to the limited scope of the Project, a Waste and Recycling Management Sub-Plan was not identified as required in the Staging Report required under MCoA A13. Although this is the case, a Waste and Recycling Management Plan (WRMP) has been developed to describe the waste management and potential waste and resource consumption impacts resulting from construction of the Project. The WRMP is located in [Appendix F](#) of this CEMP and has been developed in accordance with MCoA C5-C10.

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

7.3 Soil and Water Quality

Owing to the limited scope of the Project, a Soil and Water Management Sub-Plan was not identified as required in the Staging Report required under MCoA A13.

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 7-6](#)
- Allocated CEMF management requirements are listed in [Table 7-7](#)
- Mitigation measures (including the relevant REMMs) are identified in [Table 7-11](#)

Table 7-6 Minister's MCoA relevant to soil and water management

MCoA	Requirement	Document Reference
E92	Before commencement of any construction that would result in the disturbance of moderate to high risk contaminated sites as identified in the documents identified in Condition A1, Detailed Site Investigations (for contamination) must be conducted to determine the full nature and extent of the contamination. The Detailed Site Investigation Report(s) and the subsequent report(s), must be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. The Detailed Site Investigations must be undertaken in accordance with guidelines made or approved under section 105 of Contaminated Land Management Act 1997 (NSW).	N/A Due to the scope and scale of the works, DSI's are not proposed. In-situ sampling and waste classification will occur prior to ground disturbance within any AEC to determine extent of contamination. Results will guide management during construction in consultation with Contaminated Land Consultant.

MCoA	Requirement	Document Reference
E98	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared before the commencement of construction and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	7.3.4 Appendix M
E99	The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.	7.3.4
E126	The CSSI must be designed and constructed so as to maintain the NSW Water Quality Objectives (NSW WQO) where they are being achieved as at the date of this approval, and contribute towards achievement of the NSW WQO over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the CSSI contains different requirements in relation to the NSW WQO, in which case those requirements must be complied with.	7.3.4
E127	The Proponent must consider the <i>Guidelines for controlled activities on waterfront land riparian corridors</i> (Department of Industry 2018) when carrying out work within 40 metres of a watercourse, including its bed.	7.3.2
E128	Before undertaking any works and during maintenance or construction activities, erosion and sediment controls must be implemented and maintained to prevent water pollution consistent with Managing Urban Stormwater: Soils and Construction Vol 1 4th ed. by Landcom, 2004 (The Blue Book).	7.3.4
129	<p>Unless an EPL is in force in respect to the CSSI and that licence specifies alternative criteria, discharges from construction wastewater treatment plants to surface waters must not exceed:</p> <ul style="list-style-type: none"> (a) the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018</i> (ANZG (2018)) default guideline values for toxicants at the 95 per cent species protection level; (b) for physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000</i> (ANZECC/ARMCANZ); and (c) for <i>bioaccumulative</i> and persistent toxicants, the ANZG (2018) guidelines values at a minimum of 99 per cent species protection level. <p>Where the ANZG (2018) does not provide a default guideline value for a particular pollutant, the approaches set out in the ANZG (2018) for deriving guideline values, using interim guideline values and/or using other lines of evidence such as international scientific literature or water quality guidelines from other countries, must be used.</p>	N/A. No water discharges are proposed from the work sites.

MCoA	Requirement	Document Reference
E130	If construction stage stormwater discharges are proposed, a Water Pollution Impact Assessment will be required to inform licensing consistent with section 45 of the POEO Act. Any such assessment must be prepared in consultation with the EPA and be consistent with the National Water Quality Guidelines, with a level of detail commensurate with the potential water pollution risk.	N/A and EPL is not required for this scope of work. No water discharges are proposed from the work sites. If large amounts of water are required to be discharged from site a Water Pollution Impact Assessment will be carried out at the time.
131	Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be carried out in accordance with relevant guidelines and designed by a suitably qualified and experienced person.	7.3.4

Table 7-7 CEMF requirements relevant to soil and water management

CEMF	Requirement	Document Reference
12.2(b)	Principal Contractors will develop and implement Progressive Erosion and Sediment Control Plans (ESCPs) 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 the Contractor'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 Contractor personnel including the Engineer and the Site Foreman.	6.2.4
12.2(c)	ESCPs will detail all required erosion and sediment control measures for the particular site at the particular point in time and be progressively updated to reflect the current site conditions. Any amendments to the ESCP will be approved by the Contractor's Environmental Manager (or delegate).	6.2.4

CEMF	Requirement	Document Reference
12(d)	Principal Contractors will develop and implement Stormwater and Flooding Management Plans for the relevant construction sites. These plans will identify the appropriate design standard for flood mitigation based on the duration of construction, proposed activities and flood risks. The plan will develop procedures to ensure that threats to human safety and damage to infrastructure are not exacerbated during the construction period.	7.3.4 Note: Due to the scale and nature of the Power Enabling Works Stormwater and Flooding Management Plans would not be developed for the construction sites, rather stormwater and flooding mitigation measures would be included in Progressive ESCPs.
12.2(e)	Principal Contractors will undertake the following soil and water monitoring as a minimum: <ul style="list-style-type: none"> i. Weekly inspections of the erosion and sediment control measures. Issues identified would be rectified as soon as practicable; ii. Additional inspections will be undertaken following significant rainfall events (greater than 20 mm in 24 hours); and iii. All water will be tested (and treated if required) prior to discharge from the site in order to determine compliance with the appropriate approvals and licencing. No water will be discharged from the site without written approval of the Contractor's Environmental Manager (or delegate). This is to form a HOLD POINT. 	6.9.3
12.2(f)	The following compliance records will be kept by the Principal Contractors: <ul style="list-style-type: none"> i. Copies of current ESCPs for all active construction sites; ii. Records of soil and water inspections undertaken; iii. Records of testing of any water prior to discharge; and iv. Records of the release of the hold point to discharge water from the construction site to the receiving environment. 	6.10.1
12.2(g)	The following water resources management objectives will apply to the construction of the project: <ul style="list-style-type: none"> i. Minimise demand for, and use of potable water; ii. Maximise opportunities for water re-use from captured stormwater, wastewater and groundwater; iii. Examples of measures to minimise potable water consumption include: <ul style="list-style-type: none"> • Water efficient controls, fixtures and fittings in temporary facilities; • Using recycled water or treated water from onsite sources in the formulation of concrete; • Harvesting and reusing rainwater from roofs of temporary facilities; • Using water from recycled water networks; • Collecting, treating and reusing groundwater and stormwater; • Using water efficient construction methods and equipment; and • Providing designated sealed areas for equipment wash down. 	7.3.4

7.3.1 Management objectives and performance outcomes

The following soil and water management objectives will apply to construction:

- Minimise pollution of surface water through appropriate erosion and sediment control;
- Minimise leaks and spills from construction activities;
- Maintain existing water quality of surrounding surface watercourses;
- Source construction water from non-potable sources, where feasible and reasonable;
- Minimise demand for, and use of potable water;
- Maximise opportunities for water re-use from captured stormwater, wastewater and groundwater;

The Submissions Report identified specific construction performance outcomes for the Project; those relevant to the management of soils and water quality for the Power Enabling Works are included in Table 7-8.

Table 7-8 Relevant performance outcomes

Performance Outcome Requirement	Construction Performance Outcomes	Key Performance Indicators
<p>The environmental values of land, including soils, subsoils and landforms, are protected</p> <p>Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination</p>	<ul style="list-style-type: none"> • Contamination risks to human health and ecological receivers are minimised through effective management of existing contaminated land 	<p>If contaminated land is discovered on site the unexpected finds procedure will be implemented for all unexpected finds.</p> <p>Testing would be carried out prior to the disturbance of potential Acid Sulfate Soils.</p>
<p>The project minimises adverse impacts on flooding characteristics</p> <p>Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure.</p> <p>Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised. The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including</p>	<ul style="list-style-type: none"> • Land and property beyond the construction footprint would not be impacted by construction for the 0.5 Exceedances per Year (EY) storm event • No aspect of construction to materially adversely affect existing water quality in receiving waters to a minimum 0.5 EY storm event, or in line with the 'Blue Book' (Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom, 2004)) • No material change to channel shape within the construction footprint for the 0.5 EY storm event for streams classified first order and higher • Water discharged from the project, including runoff from hardstand areas, surface and ground water storages would: <ul style="list-style-type: none"> ○ contribute towards 	<p>Progressive Erosion and Sediment Control Plans (ESCPs) will be developed for all active worksites in accordance with Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom, 2004) (known as the "Blue Book").</p> <p>ESCPs will detail all required erosion and sediment control measures for the particular site at the particular point in time and be progressively updated to reflect the current site conditions. Any amendments to the ESCP will be approved by the Environmental Manager (or delegate).</p> <p>No water will be discharged from the site. All water will be re-used for construction water, dust suppression or irrigation; or removed from site and disposed in accordance with the Waste and Recycling Management Sub-plan.</p>

Performance Outcome Requirement	Construction Performance Outcomes	Key Performance Indicators
<p>estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved).</p> <p>Sustainable use of water resources</p> <p>The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the Project to the extent of the project impact including estuarine and marine waters (if applicable)</p>	<p>achieving ANZECC guideline water quality trigger values for physical and chemical stressors for slightly disturbed ecosystems in lowland rivers in southeast NSW, or</p> <ul style="list-style-type: none"> ○ meet any water quality criteria determined in consultation with the NSW Environment Protection Authority (off-airport) where an EPL is required or in consultation with Western Sydney Airport in accordance with the Airports (Environmental Protection) Regulations 1997 (on airport) 	

7.3.2 Existing Environment

The following section summarises Section 16 and Chapter 14 of the EIS regarding to soil, water and contamination.

Soil landscapes

Soils within the off-airport environment consist primarily of the Blacktown and South Creek soil landscapes. The Blacktown soil landscape consists of shallow to moderately deep (greater than one metre) sandy soils typical of eucalypt forests. The soils are characterised by seasonal waterlogging, moderately reactive subsoils and localised surface movement potential.

The South Creek soil landscape comprises the present active floodplain of many drainage networks of the Cumberland Plain and consists of deep layered sediments over bedrock including clays and loams. The soils are characterised by seasonal waterlogging, localised permanently high-water tables, localised water erosion hazard and localised surface movement potential.

Groundwater

Groundwater depth at each of the sites is unknown and therefore, cannot be identified in this document. However, groundwater interaction is anticipated to be unlikely or limited. If groundwater is encountered, it will be managed as part of the ongoing risk assessment process and using progressive management documents such as the Progressive ESCP's and Work Method Statements.

Salinity

Salinity is caused by the accumulation of salts within soil, surface water and groundwater from natural conditions that has been accelerated in areas by anthropogenic activities. In Western Sydney, salinity issues are mostly associated with dryland salinity.

Power supply routes that have potential to intercept areas identified as having high salinity potential are:

Portion 4 - Airport Business Park Power [ABP] - The area of known salinity is within close proximity of Badgerys Creek along Pitt Street. The power supply will be routed underneath Badgerys Creek using a HDD under bore.

Power supply routes that have potential to intercept areas identified as having known salinity are:

Portion 6 - Aerotropolis Power [AEP] - The area of known salinity is within close proximity of Moore Gully, a small drainage line approximately 350m north of The Northern Road along Badgerys Creek Road. The power supply will be routed within the constructed roadside shoulder or underneath Moore Gully using a HDD under bore.

Acid Sulfate Soils

Acid sulfate soils (ASS) is the common name given to a range of soil types that react when exposed to air to form sulfuric acid, which can damage built structures and harm animals and plants. The off-airport environment is considered to have a low probability of ASS. The likelihood of ASS from coastal processes is low given elevation is >10 metres AHD and the project is not within a coastal area. Inland ASS can form within saline waterlogged soils with high quantities of organic matter. These may occur in large dams, drainage channels, riparian zones and wetlands within the study area.

The areas identified above as high potential or known salinity risk have the potential to form ASS.

Contamination

Throughout areas within and adjacent to the SMWSA alignment, there are a number areas which have been identified as either potential or actual contamination present. These areas of Areas of Environmental Concern

The following power supply routes are within close proximity of Areas of Environmental Concern (AEC) which have been identified in the EIS as potentially or actually contaminated. Locations of relevant AEC in relation to power supply works are shown in Figure 13, Figure 14, Figure 15, Figure 16. As a result of the close proximity of these works, work crews will be on high awareness to identify any unexpected finds that are encountered.

Due to the scope and scale of the works, DSI's are not proposed. In-situ sampling and waste classification will occur prior to ground disturbance within any moderate to high-risk AEC to determine extent of contamination. Results will guide management during construction in consultation with Contaminated Land Consultant.

Table 7-9 Contamination Areas of Environmental Concern (AEC)

Construction site	Areas of Environmental Concern (AEC)	Potential contamination sources	Overall risk rating
Portion 2 - Claremont Meadows	AEC 5	<ul style="list-style-type: none"> stockpiling of spoil from road construction and former use as laydown area potential asbestos containing materials in soils 	Medium

Services Facility Power [CMP]	AEC 6	<ul style="list-style-type: none"> off-site source of potential groundwater contamination (closed Gipps Street Landfill and upgradient industrial sources along Great Western Highway) 	High
Portion 3 - Orchard Hills Power [OHP]	AEC 10	<ul style="list-style-type: none"> past use of hazardous building materials in formerly demolished buildings (impacts on soil) 	Medium
Portion 4 - Airport Business Park Power [ABP] Portion 5 - Precast Facilities Power [PFP] Portion 6 - Aerotropolis Power [AEP]	Not specifically categorised as AECs in EIS. Assessment associated with On-airport contamination assessments.	Preliminary site investigations of the broader WSA footprint (Department of Infrastructure and Regional Development, 2016c) identified extensive waste dumping and stockpiling as the main source of potential contamination. A number of specific types and sources of potential contaminants were identified during the PSI including: <ul style="list-style-type: none"> asbestos from demolished buildings, dumped, buried and stockpiled asbestos containing materials fuels and lubricants from farming, landfill, dumped waste and industry solvents, acids and fuels from chemical storage heavy metals from farming, dumped waste, cemeteries and industry ash from landfill, dumped waste and industry farm chemicals (pesticides and herbicides) from market gardening, poultry farming and grazing pathogens (bacteria and faecal coliforms) from sewage, farming, landfill and cemetery inert waste from rural/residential, farming, dumping, industry and landfill. 	Unknown

Figure 13 Portion 2 - Claremont Meadows Services Facility Power [CMP]



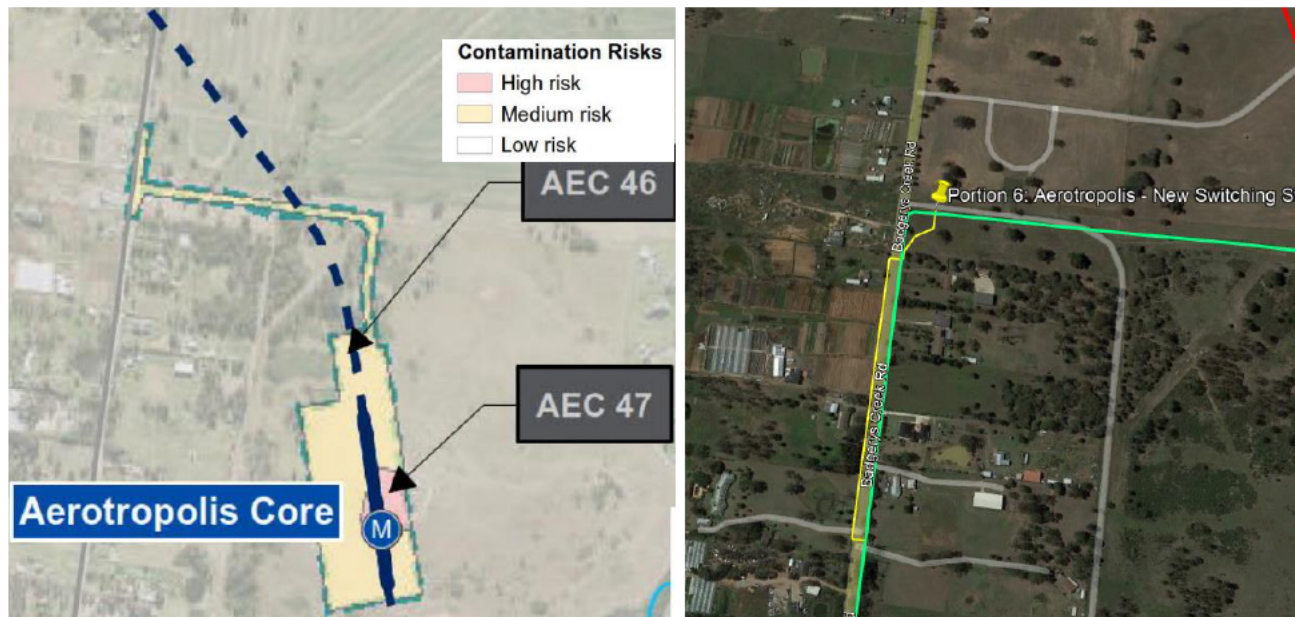
Figure 14 Portion 3 - Orchard Hills Power [OHP]



Figure 15 Portion 4 - Airport Business Park Power [ABP]



Figure 16 Portion 6 - Aerotropolis Power [AEP]



Hydrology

The project footprint lies entirely within the South Creek catchment. South Creek, a major tributary of the Hawkesbury-Nepean catchment, flows in a generally northerly direction from its headwaters near Narellan through to Windsor where it joins the Hawkesbury River. The following waterways are located in the vicinity of the power enabling works alignment:

- South Creek
- Claremont Creek
- Blaxland Creek
- Badgerys Creek

South Creek is the receiving waterway for all creeks within the area. The South Creek catchment is characterised by gently undulating topography and meandering waterways, with well vegetated riparian zones. The study area is dominated by surface runoff from rainfall which flows into the watercourse catchments. Many of the watercourses are interrupted by storages used for grazing and cropping.

The under bores proposed under Badgerys Creek and South Creek have been designed to minimise any impacts on the riparian corridor. No clearing of riparian vegetation is expected to be required to complete this scope of the work. If encroachment of the riparian corridor is required, the *Guidelines for controlled activities on waterfront land riparian corridors* (Department of Industry 2018) will be considered.

Flooding

Flood modelling for the project has determined the existing flood behaviour for the study area. The modelling indicates that 3.6 kilometres of project alignment is located on flood prone land (that is, land inundated during the PMF event). This land includes the main South Creek floodplain and the Badgerys Creek and Cosgroves Creek Floodplains. There are many agricultural dams across the study area within close proximity to the project and as a conservative approach, flood modelling has assumed that these dams are full.

Due to the nature and scale of the Power Enabling Work, impacts from flooding are expected to be negligible.

Water Quality

Historic catchment condition and water quality studies identify that South Creek is one of the most degraded catchments in the wider Hawkesbury-Nepean catchment (Hawkesbury-Nepean Catchment Management Authority, 2007). The hydrological and sediment regimes have been dramatically altered by vegetation clearing and increasing urbanisation in the catchment. South Creek exhibits high nutrient concentrations and subsequent algal and aquatic weed growth.

The existing water quality is considered poor and degraded due to high nutrient concentrations and low dissolved oxygen concentrations.

7.3.3 Potential impacts

The potential for impacts on soil and water will be dependent on the type and extent of the construction activities and their interaction with the surrounding environment. Potential impacts that could result from construction are discussed in detail in Table 7-10.

Table 7-10 Potential impacts to environmental factors

Environmental issue	Action/potential impact
Hydrology and flood risk	
Catchment values	<ul style="list-style-type: none"> Compromised catchment values (including loss of environmental values and resources that contribute to the integration of values) Catchment water quality degradation or pollution Catchment supply change (as a result of blocking supply waterways)
Flooding	<ul style="list-style-type: none"> Temporary blockage of flow paths causing changes to flood levels beyond the construction footprint due to stockpiling, location of construction works or equipment, fencing Inundation and damage to construction sites, machinery, plant and equipment
Soils, sediments and water quality	
Geology (permeability and leaching)	<ul style="list-style-type: none"> Altered permeability (leading to groundwater movement and contaminant migration) Increased risk for leaching and contaminant migration (caused by contaminant release or disturbance of existing contaminants).
Soil landscape (erosion and sedimentation)	<ul style="list-style-type: none"> Soil erosion Nutrient mobilisation and release (leading to water quality degradation or pollution) Contamination (release of contaminants or encountering contaminants leading to soil quality degradation or contamination).

Environmental issue	Action/potential impact
Acid sulfate soils (acid generation)	<ul style="list-style-type: none"> Potential and actual acid sulfate soil disturbance (sulphuric acid generation leading to leaching of contaminants which have terrestrial and aquatic ecological impacts, including fish disease, kills, loss of food resource, reduced fish migration and recruitment potential, disturbance to water plant communities and secondary effects on water quality, and potential human health risks) Land quality degradation Surface water quality degradation and pollution Groundwater quality degradation and pollution Soil structure degradation and loss (including infrastructure instability) Socioeconomic impacts (Government and community perception)
Contamination/pollution (encountering)	<ul style="list-style-type: none"> Contaminant mobilisation leading to soil degradation or contamination Contaminant mobilisation leading to water quality degradation or pollution Contaminant mobilisation leading to aquatic and terrestrial ecology degradation Contaminant mobilisation leading to human health impacts including worker exposure
Contamination/pollution (causing)	<ul style="list-style-type: none"> Contaminant release leading to soil degradation or contamination Water quality degradation or pollution Aquatic and terrestrial ecology degradation Human health impacts (including worker exposure) Potential for creation of preferential pathways for contaminants to travel through
Receiving waters and sensitive environments	<ul style="list-style-type: none"> Dust settlement (smothering) and sedimentation and siltation (loss of ecological function) (via soil erosion and runoff) Fish habitat degradation/loss (as a result of sediment, contaminant and/or pollutant release and migration)
Surface water quality	<ul style="list-style-type: none"> Siltation (leading to loss of ecological function) (via soil exposure, erosion, runoff, dust propagation and (riparian) vegetation removal) Nutrient, metal, organic material and pollutant loading (leading to loss of aquatic values and ecological function) Water quality degradation (as a result of sediment, tannin or pollutant release and migration) (with reduced tolerance due to existing poor water quality) Aquatic ecology degradation (as a result of sediment, contaminant and/or pollutant release and migration)
Groundwater (water table)	<ul style="list-style-type: none"> Groundwater quality degradation or pollution Rapid pollution dispersion and migration (with secondary impacts)

Noting the minor nature of the scope of works, impacts on soil and water attributed to the Project are anticipated to be limited. [Table 7-11](#) provides mitigation measures that will be implemented to prevent or minimise these impacts.

7.3.4 Mitigation Measures

The specific measures and requirements to address soil and water quality impacts are outlined in [Table 7-11](#)

Table 7-11 Soil and water mitigation measures

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	SW1	Training will be provided to all Project personnel, including relevant sub-contractors on sound erosion and sediment control practices and the requirements from this plan through inductions, toolboxes and targeted training.	Best Practice	Training records	Pre-construction/ Construction	Environment Manager
All	SW2	Progressive Erosion and Sediment Control Plans (ESCPs) will be developed 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 the 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 Contractor personnel including the Engineer and the Site Supervisor.	CEMF 12.2(b)	ESCPs	Construction	Environmental Manager Supervisor
All	SW3	ESCPs will detail all required erosion and sediment control measures for the particular site at the particular point in time and be progressively updated to reflect the current site conditions. Any amendments to the ESCP will be approved by the Environmental Manager (or delegate). Stormwater and flooding mitigation measures will be included in the Progressive ESCP's as required.	CEMF 12.2(c)(d)	ESCPs	Construction	Environmental Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
		Where Groundwater is encountered, management of excavation and the associated groundwater will be included in the Progressive ESCP and any associated Work Method Statement				
All	SW4	<p>The following soil and water monitoring will be undertaken as a minimum:</p> <ul style="list-style-type: none"> i. Weekly inspections of the erosion and sediment control measures. Issues identified would be rectified as soon as practicable; ii. Additional inspections will be undertaken following significant rainfall events (greater than 20 mm in 24 hours); and ii. All water captured in excavations will be re-used for construction water, dust suppression or irrigation; or removed from site and disposed in accordance with the Waste and Recycling Management Sub-plan. 	CEMF 12.2 (e)	<p>Inspection Reports</p> <p>Action Register</p> <p>Dewatering Permits</p>	Construction	Environmental Manager Supervisor
All	SW5	Before undertaking any works and during maintenance or construction activities, erosion and sediment controls must be implemented and maintained to prevent water pollution consistent with Managing Urban Stormwater: Soils and Construction Vol 1 4th ed. by Landcom, 2004 (The Blue Book).	MCoA E129	ESCPs Site Inspections	Construction	Environmental Manager Supervisor
All	SW6	Clean water will be diverted around disturbed site areas, stockpiles and contaminated areas;	CEMF 12.3 a(i)	ESCPs Site Inspections	Construction	Supervisor
All	SW7	Control measures will be installed downstream of works, stockpiles and other disturbed areas;	CEMF 12.3 a(ii)	ESCPs Site Inspections	Construction	Supervisor
All	SW8	Exposed surfaces will be minimised, and stabilised / revegetated as soon feasible and reasonable upon completion of construction;	CEMF 12.3 a(iii)	ESCPs Site Inspections	Construction	Supervisor Engineer

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	SW9	Dangerous good and hazardous materials storage will be within bunded areas with a capacity of 110 per cent of the maximum single stored volume;	CEMF 12.3 a(iv)	Site Inspections	Construction	Supervisor
All	SW10	Chemicals will be stored and handled in accordance with relevant Australian standards such as: <ul style="list-style-type: none"> AS 1940-2004 The storage and handling of flammable and combustible liquids AS/NZS 4452:1997 The storage and handling of toxic substances AS/NZS 5026:2012 The storage and handling of Class 4 dangerous goods AS/NZS 1547:2012 On-site domestic wastewater management 	CEMF 12.3 a(v)	Site Inspections	Construction	Supervisor Safety Manager
All	SW11	Spill kits will be provided at storage areas and main work sites;	CEMF 12.3 a (vi)	Site Inspections	Construction	Supervisor
All	SW12	A protocol will be developed and implemented to respond to and remedy leaks or spills	CEMF 12.3 a (vii)	Spill Response Procedure	Pre-construction Construction	Environmental Manager Supervisor
All	SW13	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared before the commencement of construction and must be implemented throughout construction, should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	MCoA E98-E99 CEMF 12.3 a (viii) REMM SC5 REMM SC1	Appendix M - Unexpected finds protocol	Construction	Environmental Manager
All	SW14	Prior to ground disturbance in areas of potential acid sulfate soil occurrence, testing would be carried out to determine the actual presence of acid sulfate soils. If acid sulfate	REMM SC7	Site inspection reports	Pre-construction / Construction	Environment Manager Project Engineer

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
		soils are encountered, they would be managed in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998)				
All	SW15					
All	SW16	Works will be programmed to minimise the extent and duration of disturbance work areas. i.e. minimise the amount of time the trench is left open before backfilling.	Best Practice	Site inspection reports	Pre-construction / Construction	Environment Manager Project Engineer
All	SW17	Vehicle movements from site will be minimised during wet weather if the tracking of mud may become an issue.	Best Practice	Site inspection reports	Pre-construction / Construction	Engineer Supervisor
All	SW18	Hardstand material, rumble grids or similar will be provided at exit points from the ancillary facilities and construction areas onto public roads to minimise the tracking of soil and particulates onto public roads.	Best Practice	Site inspection reports	Pre-construction / Construction	Engineer Supervisor
All	SW19	Loose rock, soil, debris etc will be removed from road surfaces (including sweeping of the road) at the end of each work shift.	Best Practice	Site inspection reports	Construction	Engineer
All	SW20	Clean and dirty water runoff will be adequately separated to avoid mixing where possible through the use of diversions, clean water drains, and the early installation of permanent drainage infrastructure.	Best Practice	Site inspection reports	Construction	Environmental manager Supervisor
All	SW21	Designated impervious bunded facilities will be provided for washout of concrete trucks and cleaning and/or maintenance of other vehicles, plant or equipment. These facilities will be located at least 50 m away from natural and built drainage lines/drainage pits.	Best Practice	Site inspection reports	Construction	Environmental manager Supervisor

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	SW22	<p>Where refuelling on site is required, the following management practices will be implemented:</p> <ul style="list-style-type: none"> • Refuelling will be undertaken on level ground and at least 20 m from drainage lines, waterways and/or environmentally sensitive areas • Refueling will be undertaken within the designated refueling areas with appropriate bunding and/or absorbent material • Refuelling will not be undertaken on or in the vicinity vegetated areas (even roadside grasses) • Refuelling will be attended at all times • Spill kits will be readily available and personnel trained in their use. A spill kit will be kept on the refueling truck at all times. • Hand tools will be refueled within bunded areas wherever possible. 	Best Practice	Site inspection reports	Construction	Environmental manager Supervisor
All	SW23	<p>Due to the scope and scale of the works, DSI's are not proposed. In-situ sampling and waste classification will occur prior to ground disturbance within any moderate to high risk AEC to determine extent of contamination. Results will guide management during construction in consultation with Contaminated Land Consultant.</p>	Best Practice	Waste Classification reports	Construction	Environmental manager Senior Project Engineer

7.4 Noise and Vibration

Although the requirement for a Noise and Vibration Sub-plan is specifically excluded within the Project Staging Report under MCoA A13, a Noise and Vibration Management Plan (CNVMP) has been developed to assess and manage potential noise and vibration impacts resulting from construction of the Project. The CNVMP is located in [Appendix H](#) of this CEMP and has been developed considering MCoA C6-C10.

7.5 Non-Aboriginal Heritage

Owing to the limited scope of the Project, a Heritage Management Plan was not identified as required in the Staging Report required under MCoA A13.

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 7-12](#)
- CEMF requirements are listed in [Table 7-13](#)
- Mitigation measures (including the relevant REMMs) are identified in [Table 7-15](#)

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 E34 is attached as [Appendix G](#) of this CEMP.
- Archaeological Research Design

Table 7-12 MCoAs relevant to non-Aboriginal heritage management

ID	Measure / Requirement	Document Reference
E19	The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1. Unexpected heritage finds identified by the CSSI must be managed in accordance with the Unexpected Finds Protocol outlined in Conditions E34 to E36. Consideration of avoidance and redesign to protect unexpected finds of state heritage significance must be addressed where this condition applies.	Section 7.5.4
E34	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
E35	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
E36	The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction. Where archaeological investigations have been undertaken as a result of Unexpected Finds notifications then a Final Archaeological Report must be	Appendix G

ID	Measure / Requirement	Document Reference
	provided in accordance with Heritage Council guidance and standard requirements for final reporting under Excavation Permits. 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 conditions prevents separate procedures for the Unexpected Heritage Finds and Human Remains Procedure.	
E54	Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to verify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques.	Section 7.5.4.1
E55	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 7.5.4.1

Table 7-13 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:	-
iii.	The heritage mitigation measures as detailed in the environmental approval documentation;	Section 7.5.4
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 6.9
c)	Compliance records will be retained by the Contractor.	Section 6.10
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

The Submissions Report identified specific construction performance outcomes for the Project; those relevant to the management of Non-Aboriginal Heritage for the Power Enabling Works are included in Table 7-14.

Table 7-14 Relevant performance outcomes

Performance Outcome Requirement	Construction Performance Outcomes	Key Performance Indicators
<p>The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage</p> <p>The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage</p>	<ul style="list-style-type: none"> Impacts on non-Aboriginal heritage items and archaeology are minimised or where possible avoided The design of the project incorporates non-Aboriginal heritage interpretation 	<p>The Proponent will not destroy, modify or otherwise physically affect any Heritage item identified in this CEMP.</p> <p>If an unexpected heritage find is uncovered the unexpected heritage finds procedure would be implemented in every instance.</p>

7.5.2 Existing non-Aboriginal Heritage

The following section summarises Section 12 of the EIS.

A number of local significance heritage items have been identified as existing in close proximity to the power supply alignment. These items are listed in Table 7-15

Table 7-15 Heritage items in proximity to the Power supply route

Heritage item	Register listings	Location description	Significance
Portion 2 - Claremont Meadows Services Facility Power [CMP]			
Great Western Highway milestone marker	[REDACTED]	Southern side of the Great Western Highway 20m from entry to Ancillary Facility / Overhead services works.	Local
Portion 6 - Aerotropolis Power [AEP]			
Two Water Tanks	[REDACTED]	Approximately 60m NE of northern new switching station off Badgerys Ck Rd	Local
Kelvin/Kelvin Park Group	[REDACTED]	Property NE of northern new switching station off Badgerys Ck Rd	State and Local

Figure 17 and Figure 18 indicate the Local and State Heritage items located adjacent to the Project Alignment.

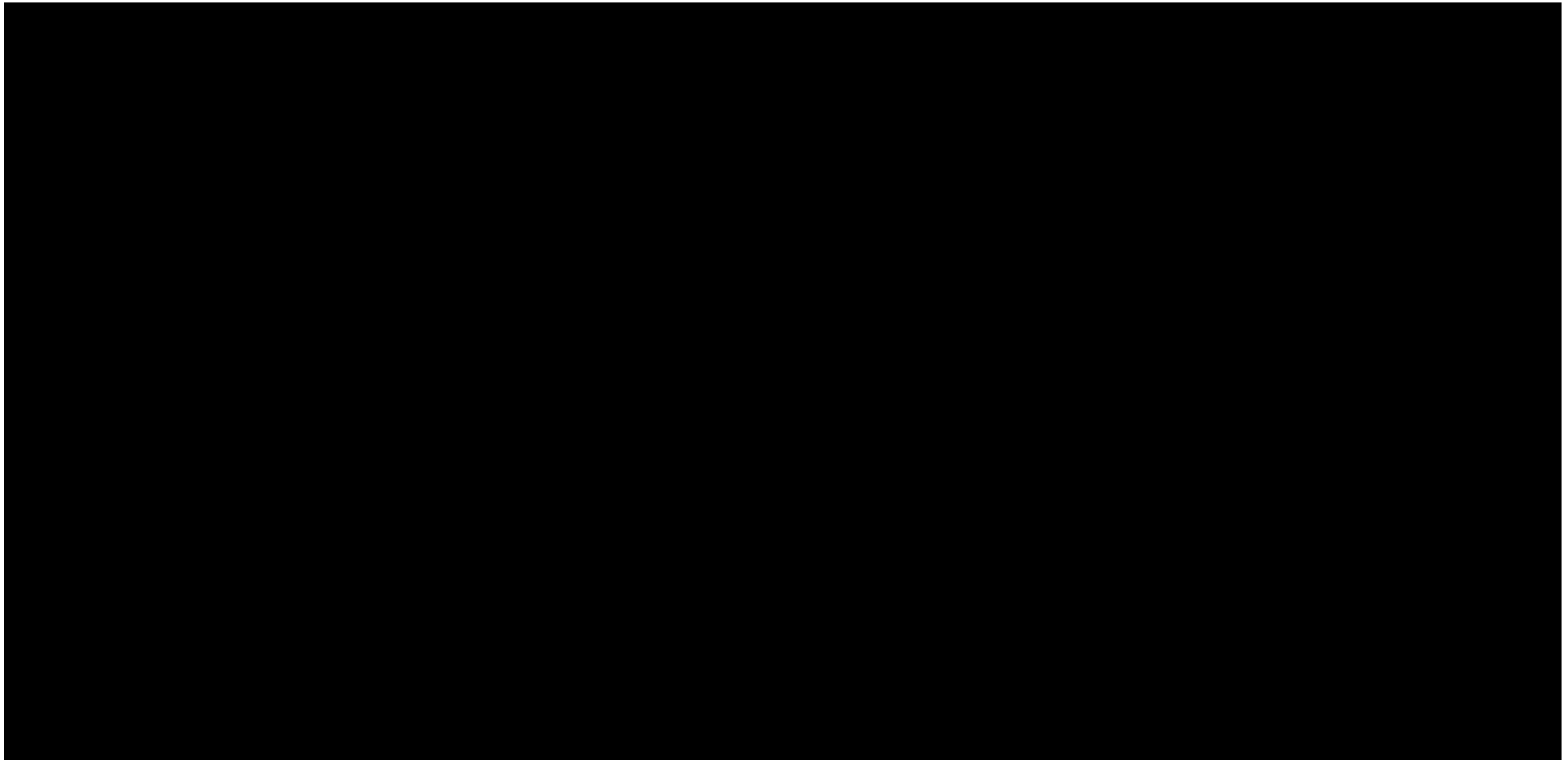


Figure 17 Heritage items in proximity to Portion 2 - Claremont Meadows Services Facility Power [CMP]

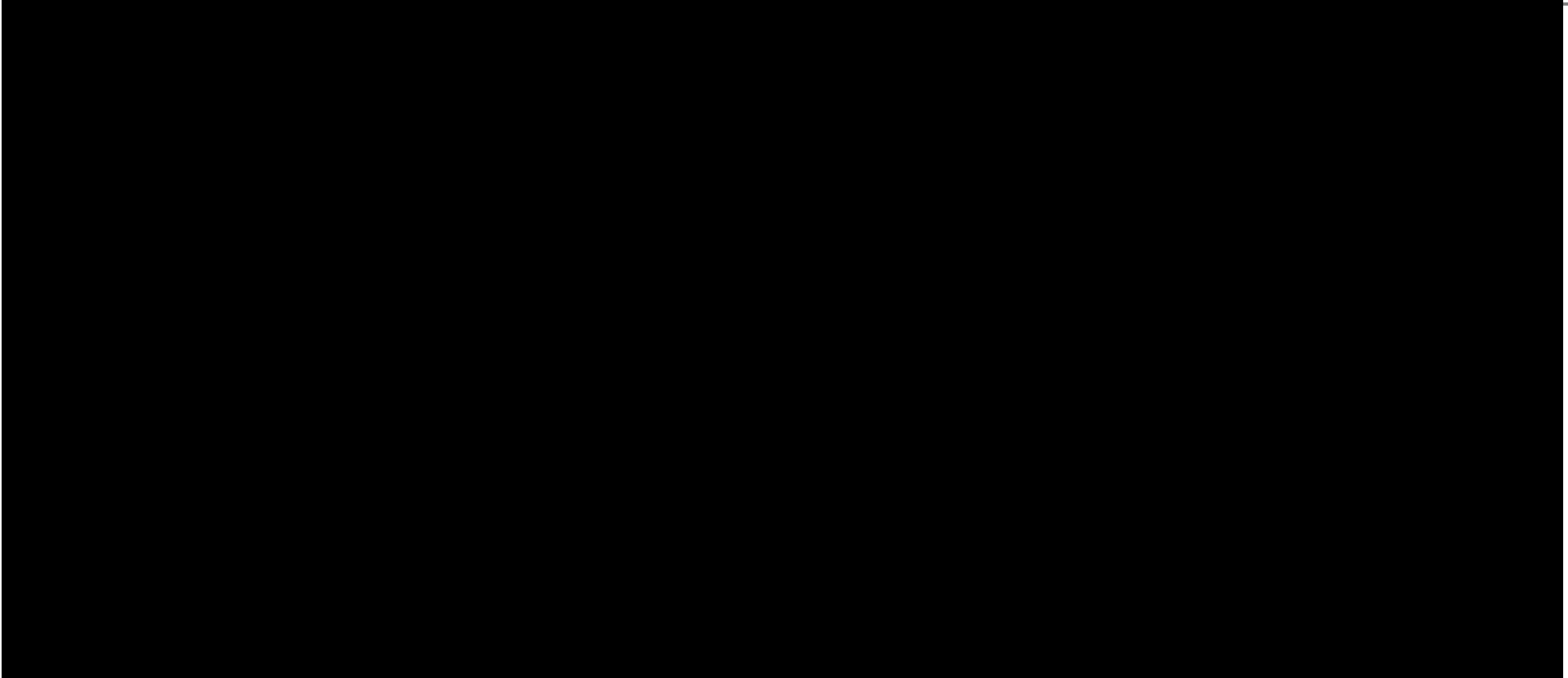


Figure 18 Heritage items in proximity to Portion 6 - Aerotropolis Power [AEP]

7.5.3 Potential Impacts

Table 7-16 identifies the listed heritage items within close proximity to the power enabling works route and discusses the potential impacts of the project on these items. Mitigation measures to manage potential impacts are outlined in

Table 7-16 Potential impacts to heritage items adjacent to works

Heritage item, listing and significance	Potential Impacts	Magnitude of impact
Portion 2 - Claremont Meadows Services Facility Power [CMP]		
Great Western Highway milestone marker	Direct impact This item is located around 20m to the east of the proposed services facility and would not be directly affected.	Nil
Penrith LEP 2010 I859	Temporary indirect impact – alteration of heritage setting (construction phase) Construction works near this item would not affect the setting of the item.	Minor
Local	Vibration impact No potential vibration impacts on this item are anticipated during construction.	Nil
	Overall impact on significance	Nil
Portion 6 - Aerotropolis Power [AEP]		
Two Water Tanks	Direct impact These items are approximately 60m from the extent of works. No direct impacts are anticipated.	Nil
Liverpool LEP 2008 I4	Temporary indirect impact – (construction phase) Power enabling works would not alter the visual setting of this item.	Nil
Local	Vibration impact No vibration impacts are expected.	Nil
	Overall impact on significance	Nil
Kelvin/Kelvin Park Group	Direct impact Power enabling works alignment does not intercept this property. No direct impacts anticipated.	Nil
Liverpool LEP 2008 I8	Temporary indirect impact – (construction phase) Power enabling works would not alter the visual setting of this item.	Nil
SHR 00046	Vibration impact No vibration impacts are expected.	Nil
	Overall impact on significance	Nil

7.5.4 Mitigation Measures

The specific measures and requirements to address impacts of non-Aboriginal heritage are outlined in Table 7-17.

Table 7-17 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.	MCoA E19	Site inspection reports	Construction	Environment Manager
All	NAH2	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.	MCoA E34, E35, E36 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 Site supervisor
All	NAH4	Vibration testing will be conducted during vibration generating activities that have the potential to impact on Heritage items to verify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, Quickway will review the construction methodology and, if necessary, implement additional mitigation measures including, but not be limited to, review or modification of excavation techniques.	MCoA E54	Vibration Monitoring reports	Construction	Environment Manager

7.5.4.1 Vibration Monitoring

In accordance with MCoA E54, 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 E55, 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 Staging Report required under MCoA A13.

Quickway will implement and comply with the requirements of the Approved Aboriginal Cultural Heritage Management Plan (ACHMP) (Rev 6 – August 2021) at all times throughout construction. The ACHMP is provided in [Appendix K](#).

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 Staging Report required under MCoA A13.

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 7-18
- Allocated CEMF management requirements are listed in Table 7-19
- Mitigation measures (including the relevant REMMs) are identified in Table 7-22

Table 7-18 Minister's MCoA relevant to air quality management

MCoA	Requirement	Document Reference
E1	All reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction.	Section 7.7.6

Table 7-19 CEMF requirements relevant to air quality management

CEMF	Requirement	Document Reference
13.2 (b)	Air quality and dust monitoring will involve the following as a minimum: <ul style="list-style-type: none"> i. Meteorological conditions will be monitored and appropriate responses will be organised and undertaken periodically by the Principal Contractor; ii. Regular visual monitoring of dust generation from work zones; and iii. Monitoring emissions from plant and construction vehicles to ensure they have appropriate emission controls and are being maintained correctly. 	Section 6.9.7 and 7.7.6
13.2 (c)	The following compliance records will be kept by the Principal Contractor: <ul style="list-style-type: none"> i. Records of any meteorological condition monitoring; ii. Records of any management measures implemented as a result of adverse, windy weather conditions; and iii. Records of air quality and dust inspections undertaken. 	Section 6.9.7 and 6.10.1
13.3 (a)	The off-airport Air Quality Management Plan will include the following air quality mitigation measures as well as any relevant Conditions: <ul style="list-style-type: none"> i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes; ii. Plant and equipment to be switched off engines when not in use; iii. The avoidance the use of diesel or petrol powered generators and instead using mains electricity or battery powered equipment, where practicable; iv. Appropriate vehicle speeds on sealed and unsealed roads; v. Development and implementation of a construction logistics plan to manage the sustainable delivery of goods and materials; vi. Implementing measures to support and encourage sustainable travel for construction workers to and from the construction sites; vii. Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce windblown dust emissions; viii. Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate; and ix. Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure. 	Section 7.7.6

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.

The Submissions Report did not identify any specific construction performance outcomes related to Air Quality for the Project.

7.7.2 Existing Environment

The following section generally summarises the existing environment for the work areas which correspond to information provided in Chapter 22 of the EIS.

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.

Seasonal wind patterns observed at St Marys (representative of northern work areas) show a predominant north-south directional pattern for all seasons with slightly higher levels of winds from the east during summer compared to the other seasons. Seasonal wind patterns for Bringelly (representative of southern work areas) show predominantly south-southwest winds for autumn and winter, increased levels of wind from the east during spring and predominant stronger easterly winds during summer.

Air quality data presented in the approval documents, sourced from monitoring stations at St Marys and Bringelly is summarised in [Table 7-20](#).

Table 7-20 Background air quality data

Pollutant	Averaging period	Air quality impact assessment criteria	St Marys						Bringelly					
			2014	2015	2016	2017	2018	2019	2014	2015	2016	2017	2018	2019
PM ₁₀ (ug/m ³)	Maximum 24-hour concentration	50	45.0	53.0	100.2	49.8	100.5	159.8	42.6	57.0	61.6	83.7	92.9	134.0
	24-hour exceedance count	-	0	1	3	0	2	26	0	1	3	6	8	24
	Annual Average	25	16.7	15.1	16.0	16.2	19.3	24.7	16.6	15.8	17.0	19.8	21.2	23.6
PM _{2.5} (ug/m ³)	Maximum 24-hour concentration	25	-	-	93.2	38.2	80.5	88.3	-	-	21.6	52.5	55.6	178.0
	24-hour exceedance count	-	-	-	5	3	2	21	-	-	0	2	4	27
	Annual Average	8	-	-	7.8	8	7.8	9.8	-	-	7.6	7.5	8.0	11.3

7.7.3 Air Quality Monitoring

Quickway will carry out ongoing visual monitoring of air quality on a daily basis to verify the effectiveness of controls. If visual monitoring indicates that mitigation measures are not fully effective or if dust complaints are received, Quickway will determine if additional air/dust mitigation controls are needed, amend the mitigation strategies accordingly and promptly implement the additional air/dust mitigation controls.

Plant and equipment will be monitored on an ongoing basis for indications of inefficient plant operation and excessive emissions. Any plant or equipment found to have excess emissions will be stood down until the issue is rectified.

Weather conditions such as wind direction, wind speed, soil moisture and rainfall or dew will substantially influence the day-to-day potential for dust generation and suspension. Accordingly, project personnel involved in the activities above need to consider the factors effecting dust generation in consultation with their environmental representatives to ensure appropriate mitigation measures are adopted.

Meteorological conditions will be monitored and appropriate responses will be organised and undertaken periodically. If strong winds are forecast which are likely to cause excessive dust, works may cease, and/or controls will be put in place to minimise the emission of dust.

7.7.4 Location of potentially sensitive receivers

All surrounding areas and residents are considered in this case to be sensitive receivers. Due to changing prevailing winds, Quickway will minimise impacts to air quality at all times, rather than just when adjacent to potential sensitive receivers. A summary of locations of potential sensitive receivers adjacent to each works portion is described below:

- Portion 1 - Patons Lane Undergrounding [PLU]: Works are located in a sparsely populated rural landscape. The nearest residential property is located approximately 850m NE of the works.
- Portion 2 - Claremont Meadows Services Facility Power [CMP]: Works are located in a low-density suburban landscape with all potential sensitive receivers located immediately SW of the works.
- Portion 3 - Orchard Hills Power [OHP]:
 - North of the M4, works are located in a low-density suburban landscape with all potential sensitive receivers generally located immediately adjacent to the works in all directions.
 - South of the M4, works are located in a large lot semi-rural landscape with potential sensitive receivers generally located within 50m from the works in all directions.
- Portion 4 - Airport Business Park Power [ABP]:
 - East of Badgerys Creek / Off Airport land, works are located in a rural landscape with all potential sensitive receivers located at various distances from the works in all directions.
 - West of Badgerys Creek / On Airport land, works are located within Airport land. No potential sensitive receivers.
- Portion 5 - Precast Facilities Power [PFP]: Works are located within Airport land. No potential sensitive receivers.
- Portion 6 - Aerotropolis Power [AEP]: Works are located in a large lot semi-rural landscape with potential sensitive receivers generally located within 50m from the works in all directions.

7.7.5 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. The site compounds have the potential of having a slightly higher risk of generating dust as a result of material being temporarily stockpiled within these compounds.

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.

Chapter 22 of the EIS assesses potential impacts to air quality summarised in the following. Areas where the power supply routes are located in medium density urban residential areas, there are more than 10 but less than 100 high sensitivity receptors within 50 metres of the construction footprint and therefore the sensitivity to dust soiling and human health effects is considered to be medium.

The results of the assessment are summarised in [Table 7-21](#). There is a low risk of dust soiling and human health impacts associated with unmitigated dust impacts for the power supply routes. These potential impacts would be temporary and are expected to occur for only a limited period during the construction period. The risk would be temporary during the construction period and would be reduced given the application of standard mitigation measures identified in Appendix F (Construction Environmental Management Framework) as well as those measures outlined in Section 22.7.1.

Table 7-21 Summary of dust risk assessment for power supply routes (EIS, Chapter 22).

Activity	Dust emission magnitude	Sensitivity of area		Risk of unmitigated dust impacts		Risk of mitigated impacts	
		Dust soiling	Human health	Dust soiling	Human health	Dust soiling	Human health
Demolition	Small	Medium	Medium	Low	Low	Negligible	Negligible
Earthworks	Small	Medium	Medium	Low	Low	Negligible	Negligible
Construction	Small	Medium	Medium	Low	Low	Negligible	Negligible
Track-out	Small	Medium	Medium	Negligible	Low	Negligible	Negligible

7.7.6 Mitigation Measures

The specific measures and requirements to address air quality impacts are outlined in [Table 7-22](#).

Table 7-22 Air quality mitigation measures

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	AQ1	<ul style="list-style-type: none"> i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes. Monitoring of plant and equipment would be carried out to ensure they have appropriate emission controls and are being maintained correctly; ii. Plant and equipment to be switched off engines when not in use; iii. The avoidance the use of diesel or petrol powered generators and instead using mains electricity or battery powered equipment, where practicable; iv. Appropriate vehicle speeds on sealed and unsealed roads (e.g 10km/h in compounds); v. All loaded trucks must be covered prior to leaving the construction site vi. Development and implementation of a construction logistics plan to manage the sustainable delivery of goods and materials; vii. Implementing measures to support and encourage sustainable travel for construction workers to and from the construction sites. This will include 	CEMF 13.3	Site inspection reports. Plant pre-start checklists	Construction	Environment Manager Site supervisor Project Engineer

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
		<p>mustering at the site compounds prior to each shift before being transferred to site in pool vehicles, where practical. Also, encouraging workers to pool in vehicles to get to the compounds;</p> <p>viii. Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce windblown dust emissions. Stockpiles will be covered if they not being used for longer than seven days, or stabilised with a soil binder or similar;</p> <p>ix. Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate; and</p> <p>x. Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure.</p>				
All	AQ2	<p>The following best-practice odour management measures would be implemented during relevant construction works:</p> <ul style="list-style-type: none"> The extent of opened and disturbed contaminated soil at any given time would be minimised temporary coverings or odour suppressing agents would be applied to excavated areas where appropriate regular odour monitoring would be conducted during excavation to 	EIS REMM AQ1	Site inspection reports	Construction	Environment Manager Site supervisor Project Engineer

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
		verify that no offensive odours are being generated				
All	AQ3	Meteorological conditions will be monitored a minimum of daily, and appropriate actions and responses will be organised and undertaken to ensure dust generation is minimised.	CEMF 13.2(b)	Site inspection reports Meteorological records.	Construction	Environment Manager Site supervisor Project Engineer
All	AQ4	Visual monitoring of dust generation from the work zones would be carried out regularly by the site personnel and dust mitigation measures outlined as required.	CEMF 13.2(b)	Site inspection reports Site diaries	Construction	Environment Manager Site supervisor 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 Staging Report required under MCoA A13.

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 7-23](#)
- CEMF requirements are listed in [Table 7-24](#)
- Mitigation measures (including the relevant REMMs) are identified in [Table 7-26](#).

Table 7-23 MCoA for visual amenity management

MCoA	Requirement	Reference
A23	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
A24	Boundary screening required under Condition A23 of this schedule must minimise visual impacts on adjacent sensitive land user(s).	Section 7.8.4
E62	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, 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
E64	<p>The CSSI must be constructed and operated with the objective of minimising light spill to surrounding properties. All lighting associated with the CSSI must be consistent with the requirements of:</p> <ul style="list-style-type: none"> (a) ASINZS 4282:2019 Control of the obtrusive effects of outdoor lighting, relevant Australian Standards in the series ASINZS 1158 - Lighting for Roads and Public Spaces; (b) NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports; and (c) NASF Guideline C: Managing the risk of wildlife strikes in the vicinity of airports. <p>Mitigation measures must be provided to manage residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.</p>	Section 7.8.4

Table 7-24 CEMF requirements for visual amenity management

CEMF	Requirement	Document Reference
11.1a	iii. Reduce visual impact of construction to surrounding community	Section 7.8.4

CEMF	Requirement	Document Reference
11.2a	<p>iii The maintenance of outward facing elements of site hoarding or noise barriers, including the removal of graffiti and weeds;</p> <p>iv..Apply the principles of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant safety design requirements and detail mitigation measures to minimise lighting impacts on sensitive receivers for all permanent, temporary and mobile light sources;</p> <p>v. Identify the processes and procedures that will be used for the incorporation of the principles of Crime Prevention Through Environmental Design (CPTED) in the design and construction of any temporary site facilities;</p>	Section 7.8.4
11.2 (b)	Visual and landscape measures will be incorporated into the Principal Contractor's regular inspections including checking the health of retained vegetation around site boundaries, checking the condition of any site hoarding and acoustic sheds, and checking the position and direction of any sight lighting.	Section 6.10 and 7.8.4
11.2 I	The Contractor will retain compliance records of any inspections undertaken in relation to visual and landscape measures.	Section 7.8.4
11.3	<p>iv. The on-airport Visual and Landscape CEMP and the off-airport Visual Management Plan will include the following visual amenity mitigation measures as well as relevant Conditionsi. Wherever feasible and reasonable, vegetation around the perimeter of the construction sites will be maintained;</p> <p>v. ii. Existing vegetation not affected by the construction works will be retainedi. Temporary construction works will be designed with consideration of urban design and visual amenity as per Section 4.4; and</p> <p>iv. Temporary site lighting, for security purposes or night works will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting.</p>	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.

The Submissions Report did not identify any specific construction performance outcomes related to Visual Amenity for the Project.

7.8.2 Existing Environment

The following section generally summarises the existing environment for the work areas which correspond to information which correspond to Section 15 of the EIS.

A description of the criteria used in the study to assess landscape and visual amenity impacts is included in Section 20.2.1 of the EIS. The study area comprised of six landscape character areas which were identified based on characteristics such as landform, land use, vegetation cover and development density. The six power supply routes are located with a number of these different landscape character areas. A

description of the relevant landscape character areas and respective power supply routes within is described in Table 30:

Table 7-25 Landscape Character of areas surrounding power supply routes.

Landscape Character Area	Description	Daytime sensitivity	Visual impact
St Marys suburban fringe Portion-2 - Claremont Meadows Services Facility Power [CMP] Portion-3 - Orchard Hills Power [OHP](nth)	This landscape character area forms a suburban fringe and is in transition to an increasingly urban setting. The landscape is fragmented by a mix of uses including major arterial roads, patches of mature bushland and areas of vacant former rural land, reducing the cohesiveness of the overall landscape character.	Local	Minor
Orchard Hills Portion-1 - Patons Lane Undergrounding [PLU] Portion-3 - Orchard Hills Power [OHP](sth)	The landscape character area varies from rolling semirural areas in the north to a flat open rural landscape in the south and has been altered for agricultural practices. Visible infrastructure including a high voltage powerline corridor, water supply pipelines and landfill facility also contributes to a reduced cohesiveness of the rural landscape character.	Local	Minor
Western Sydney Airport (Off-airport only) Portion-4 - Airport Business Park Power [ABP] Portion-5 - Precast Facilities Power [PFP]	The EIS does not clearly describe the landscape character of the areas where east of the Western Sydney Airport where Portion 4 and 5 are situated. The landscape character is relatively consistent with Bringelly described below.	Local	Minor
Bringelly Portion-6 - Aerotropolis Power [AEP]	This landscape character area comprises mainly rural land with patches of mature bushland, detached dwellings and pockets of intensive agriculture.	Local	Minor

7.8.3 Potential Impacts

The views of construction of the power supply route would include small scale construction activities including trenching works within the road corridors, temporary road and footpath closures. Although the power supply route design has been developed to avoid the removal of trees, some vegetation may have to be removed.

In the northern areas around St Marys suburban fringe, the work would be absorbed into views within the suburban areas, but will have some minor temporary visual impacts to adjacent residents. The areas to the south inclusive of Orchard Hills, the Western Sydney Airport and Bringelly would have some minor visual impacts to residents adjacent to the works, but due to the sparsity of residents, the impact is considered minor.

Overall, due to the minor scale of these works, there would be a minimal reduction in the amenity of views from adjacent properties along the power supply route. There may be a minor reduction of visual amenity for the landowner who has agreed to have the Lawson Street compound on their property. These views are of local sensitivity and this would result in a temporary minor visual impact during construction.

7.8.4 Mitigation Measures

The specific measures and requirements to address Visual Impact are outlined in Table 7-26.

Table 7-26 Visual impact mitigation measures.

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All sites	LV1	<p>Opportunities for the retention and protection of existing street trees and trees within the construction sites would be identified during detailed construction planning. Opportunities may include:</p> <ul style="list-style-type: none"> The movement of the HDD entry and exit points to minimise the impact on native vegetation. The underbore of large trees, where practical and possible. The realignment of trenches to avoid trees or roots, where practical and possible. 	EIS REMM LV1	Construction planning	Pre- Construction	<p>Environment Manager Site supervisor Project Engineer</p>
All sites	LV2	<p>Existing trees to be retained would be protected prior to the commencement of construction in the vicinity of these trees in accordance with AS4970-2009 Protection of Trees on Development Sites. Protection of trees should be supervised by a qualified arborist as required.</p>	EIS REMM LV2	Site inspection reports	Pre-Construction, Construction	<p>Environment Manager Site supervisor Project Engineer</p>
All sites	LV3	<p>All structures (including potential site offices, workshop sheds and site hoarding) would be finished in a colour which aims to minimise their visual impact where appropriate. This finish is to be applied to all visible fixtures and fittings (such as</p>	EIS REMM LV3	Site inspection reports	Construction	<p>Environment Manager Site supervisor Project Engineer</p>

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
		exposed downpipes). This will be achieved though the procurement process.				
Ancillary Facilities	LV4	<p>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.</p> <p>The Claremont Meadows Ancillary Site described above is not located adjacent to sensitive land uses and therefore, no boundary screen is proposed around the ancillary sites as a visual mitigation measure. Lawson Street compound may require some screening on the side of the ancillary site that faces the residence, however, this will be agreed with the property owner as part of the lease negotiations. Boundary screening may be installed around the ancillary sites to assist in security, as deemed appropriate during construction.</p>	MCoA A23	Site inspection reports	Pre-Construction, Construction	<p>Environment Manager</p> <p>Site supervisor</p> <p>Project Engineer</p>
Ancillary Facilities	LV5	If boundary screening is required to be installed, as per LV4, it will minimise visual impacts on adjacent sensitive land user(s).	MCoA A24	Site inspection reports	Pre-Construction, Construction	<p>Environment Manager</p> <p>Site supervisor</p> <p>Project Engineer</p>
All sites	LV6	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 by directing	MCoA E62	Site inspection reports	Pre-Construction, Construction	<p>Environment Manager</p> <p>Site supervisor</p> <p>Project Engineer</p>

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
		construction lighting away from sensitive receivers, and incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located, such as those measures described in LV1-LV3, wherever practicable.				
All sites	LV7	Maintenance of outward facing elements of site screening will occur as required, including the removal of graffiti. Weeds management will also be implemented to minimise the visual impact of the work on the community.	CEMF 11.2(a)(iii)	Site inspection reports	Construction	Environment Manager Site supervisor Project Engineer
All sites	LV8	Light spill will be minimised in accordance with <i>Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting</i> , to minimise impacts on sensitive receivers. Measures implemented may include: <ul style="list-style-type: none"> • Use directional lighting towers for construction lighting during OOHW. • Directing construction lighting away from sensitive receivers. • Placing screening or shrouding in front of lighting to minimise the impact on sensitive receivers. 	CEMF 11.2(a)(iv)	Site inspection reports	Construction	Environment Manager Site supervisor Project Engineer
Site compounds	LV9	The Principles of Crime Prevention Through Environmental Design (CPTED) would be used in the design and construction of the temporary site compounds	CEMF 11.2(a)(v)	Design sketches Site Inspection Reports	Pre-Construction, Construction	Environment Manager Site supervisor Project Engineer

7.9 Traffic, Transport and Access Management

A Traffic, Transport and Access Management Sub Plan was not identified as required in the Project Staging Report required under MCoA A13.

This section of the CEMP is not intended to fulfil the requirements of the Construction Traffic Management Framework (CTMF), nor fulfil the requirements of MCoA E103. This section is to highlight the need for these traffic related documents and provide guidance for implementation.

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

- MCoAs are listed in Table 7-27
- CEMF requirements are listed in Table 7-28
- Project mitigation measures are identified in Table 7-31

Table 7-27 Ministers CoAs relevant to traffic, transport and access management

MCoA	Requirement	Document Reference
E103	Construction Traffic Management Plans (CTMPs) must be prepared in accordance with the Construction Traffic Management Framework. A copy of the CTMPs must be submitted to the Planning Secretary for information before the commencement of any construction in the area identified and managed within the relevant CTMP.	<u>Table 7-31</u>
E104	The locations of all Heavy Vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction.	<u>Table 7-31</u>
E105	Local roads proposed to be used by Heavy Vehicles to directly access ancillary facilities/ construction sites that are not identified in the documents listed in Condition A1 must be approved by the Planning Secretary and be included in the CTMP.	<u>Table 7-31</u> Section 1.1.3.1
E106	All requests to the Planning Secretary for approval to use local roads under Condition E105 above must include the following: (a) a swept path analysis; (b) demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two-way traffic flow on two-way roadways; (c) details as to the date of completion of the road dilapidation surveys for the subject local roads; and (d) measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times; and (e) written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items (a) to(d) of this condition.	<u>Table 7-31</u> Section 1.1.3.1
E107	Before any local road is used by a Heavy Vehicle for the purposes of construction of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the Relevant Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of the CSSI.	<u>Table 7-31</u>

MCoA	Requirement	Document Reference
E108	If damage to roads occurs as a result of the construction of the CSSI, the Proponent must either (at the Relevant Road Authority's discretion): (a) compensate the Relevant Road Authority for the damage so caused; or (b) rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report.	<u>Table 7-31</u>
E109	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to: (a) minimise parking on public roads; (b) minimise idling and queueing on state and regional roads; (c) not carry out marshalling of construction vehicles near sensitive user(s); (d) not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided; and (e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMP.	<u>Table 7-31</u>
E110	Access to all utilities and properties must be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier.	<u>Table 7-31</u>
E111	The Proponent must maintain access to properties during the entirety of works unless an alternative access is agreed in writing with the landowner(s) whose access is impacted by the CSSI works.	<u>Table 7-31</u>
E112	Where construction of the CSSI restricts a property's access to a public road, the Proponent must, until their primary access is reinstated, provide the property with temporary alternate access to an agreed road decided through consultation with the landowner, at no cost to the property landowner, unless otherwise agreed with the landowner.	<u>Table 7-31</u>
E113	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access must be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier.	<u>Table 7-31</u>
E114	During construction, all reasonably practicable measures must be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian, cyclist and vehicular access, and parking arrangements must be developed in consultation with affected businesses and landowners and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	<u>Table 7-31</u>
E115	Safe pedestrian and cyclist access must be maintained around the St Marys construction site during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternate route which complies with the relevant standards, must be provided and signposted before the restriction or removal of the impacted access.	<u>Table 7-31</u>

MCoA	Requirement	Document Reference
E116	A Traffic and Transport Liaison Group(s) must be established in accordance with the Construction Traffic Management Framework to inform the development of CTMP.	<u>Table 7-31</u>
E118	<p>Permanent road works included in the CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and, accessibility of the network. Design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken:</p> <ul style="list-style-type: none"> a) in consultation with, and to the reasonable requirements of the relevant Traffic and Transport Liaison Group; b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements; c) to minimise and manage local area traffic impacts; d) to, where possible and appropriate, retain or reinstate parking in St Marys; e) to ensure access is maintained to property and infrastructure f) place and movement outcomes from precinct plans and design guidelines; and g) to meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, Sydney Metro – Western Sydney Airport Submissions Report – Appendix D Design Guidelines and TfNSW requirements. Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation during design development and before completion of construction of the CSSI. 	<u>Table 7-31</u>
E119	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the relevant Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Planning Secretary upon request.	<u>Table 7-31)</u>

Table 7-28 CEMF requirements relevant to traffic, transport and access management

CEMF Ref.	Requirement	Document Reference
SMW Construction Environmental Management Framework		
5.2	<ul style="list-style-type: none"> a) The management of traffic impacts due to construction is addressed in the Construction Traffic Management Framework (CTMF) which sets out system requirements for management plans and other associated documentation. This document applies to Principal Contractors and forms part of the contract documentation. 	<u>Table 7-31</u>

CEMF Ref.	Requirement	Document Reference
	b) The Construction Traffic Management Framework (CTMF) sets out the approach to managing traffic impacts during the construction of the Sydney Metro projects. The CTMF also outlines contractor requirements, with reference to third party agreements. Principal Contractors are required to produce these documents in accordance with the CTMF.	<u>Table 7-31</u>

7.9.1 Management Objectives

The traffic, transport and access management objectives include:

Transport Network

- Minimise disruption to pedestrians, cyclists and motorists;
- Ensure Sydney Metro construction traffic accesses the arterial network as soon as practicable on route to, and immediately after leaving, the construction site;
- Keep Sydney moving;
- Minimise impacts on route bus operations, routes and stops, where possible;
- Minimise changes to traffic operation and kerbside access;
- Minimise construction traffic generation during network peak periods (maximum peak period construction vehicle volumes should not exceed those outlined in the EIS);
- Maintain access to properties and businesses where possible, or arrange alternative;
- Maintain a safe environment for pedestrians and cyclists

The Submissions Report identified specific construction performance outcomes for the Project; those relevant to the management of Traffic, Transport and Access Management for the Power Enabling Works are included in Table 7-29.

Table 7-29 Relevant performance outcomes

Performance Outcome Requirement	Construction Performance Outcomes	Key Performance Indicators
<p>Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts.</p> <p>The safety of transport system customers is maintained Impacts on network capacity and the level of service are effectively managed</p>	<ul style="list-style-type: none"> • Safe and efficient routes are provided for pedestrians, cyclists and road users at/near construction sites • Safe access to properties and businesses is maintained during construction, unless alternatives are agreed with property owners and businesses • Heavy vehicles access the arterial network as soon as practicable on route to, and immediately after leaving, a construction site • The local community and relevant authorities are informed of transport, access and parking changes/impacts to minimise inconvenience to the public 	<p>Access to all utilities and properties would be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier.</p> <p>Alternative property access will be provided where affected by the Project, and primary property access will be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier.</p>

7.9.2 Existing Environment

The assessment of potential transport impacts in EIS associated the off air-port components of the Project, involved the assessment of traffic, transport services, pedestrian and cyclist facilities within a defined study area, which does not cover the areas that are required for the Power Enabling Works.

The key roads off-airport required to be used for each of the portions of the Power Enabling Works include:

Portion 1

- Patons Lane – local road located in Orchard Hills aligned in an east-west direction and connects to Luddenham Road to the east. An underbore is occurring along the verge of Patons Lane to facilitate the power upgrade in this area.
- Patons Lane – access to the western portion of the works area will be via the driveway to Bingo industries recycling centre and landfill as shown in ECM Portion 1. The shared access will be managed to ensure Bingo remains to have clear access to their facility at all times.
- Luddenham Road – regional road located in Orchard Hills and Luddenham that connects Mamre Road to the north and Elizabeth Drive to the south.

Portion 2

- Great Western Highway – arterial State Road linking Penrith to the west and Parramatta to the east
- Kent Road and Gipps Street – State Road linking the Great Western Highway and the M4 Motorway.

Portion 3

- Kent Road and Gipps Street – State Road linking the Great Western Highway and the M4 Motorway. Trenching along the verge and underbores under Kent Road and Gipps Street will occur to facilitate the Power Enabling Work in this area. An underbore will also occur under the M4 Motorway.
- Sunflower Drive – local road providing access from the Claremont Meadows estate to Gipps Street. Cable pulling through existing conduits will be carried out from this road.

Portion 4

- Devonshire Road – regional road linking Bringelly Road in the south to Elizabeth Drive in the north. No work is proposed along Devonshire Road, however, it will be required for access.
- Cross Street – local road linking Devonshire Road to the east and Western Road to the west. Access along Cross Street to facilitate the trenching along the verge of Cross Street.
- Western Road – local road linking Elizabeth Drive in the north and Fifteenth Avenue to the south. Access along Western Road from Elizabeth Drive to approx. 1km south of Elizabeth Drive will be required to access Cross Street and the trenching required on the verge of Western Road.
- Martin Road – local road running in a north-south direction from Elizabeth Drive. Martin Road will be required to access the trenching work proposed on Martin Road.
- Cuthel Road – local road linking Martin Road and Lawson Road, which will be required to access the trenching proposed along the verge of Cuthel Road.
- Lawson Road – local road running in north-south direction from Elizabeth Drive. Lawson Road will be required to access the trenching required along the verge of Lawson Road, Cuthel Road and Pitt Street.

- Pitt Street – local road linking Lawson Road and Badgerys Creek Road. Pitt Street will be required to access the trenching along the verge of Pitt Street.

Portion 5

- Badgerys Creek Road – state road linking Elizabeth Drive in the north to The Northern Road in the south. Badgerys Creek Road is partially on-airport and will be required to access works that are on-airport in some locations.

Portion 6

- Badgerys Creek Road – state road linking Elizabeth Drive in the north to The Northern Road in the south. Badgerys Creek Road is required to access the trenching and underbore work located along Badgerys Creek Road.
- The Northern Road – arterial state road linking Narellan in the South and Penrith to the north. The Northern Road will be used to access much of the proposed work in Portion 6.
- Wentworth Road – local road running north from Bringelly Road (this was the former Northern Road section prior to the Bringelly Northern Road Bypass was completed in 2020).
- Greendale Road – local road linking Bringelly to Greendale. Greendale Road will be used to access the Bringelly Zone Sub-station and for the cable pulling through existing conduits in this area.

It should be noted that heavy vehicles associated with the Power Enabling Works may utilise other State and Regional Roads in Sydney, however, the roads identified above are generally within 1 km of the works.

7.9.2.1 Road Network Performance

The EIS reviewed the road network performance for all major arterial roads within the Project area.

Mid-block performance

The base year mid-block assessment indicated that most intersections within the transport study area operate within their theoretical capacity and at a satisfactory Level of Service (LoS) (generally LoS C or better). The assessment however indicated that:

- the current configuration of Elizabeth Drive (east of Badgerys Creek Road) operates close to its theoretical capacity
- The Northern Road (east of Badgerys Creek) operate above its theoretical capacity during both peak hours in the base year.

Intersection performance

Assessment of the intersections within the transport study area indicated that all intersections analysed currently operate satisfactorily at LoS D or better with spare capacity. Further details of the base year (2019) intersection performance results at each affected intersection are provided in [Table 7-30](#). Note that the information in [Table 7-30](#) has been modified from the EIS to only show the intersections that are likely to be utilised by vehicles working on the Power Enabling Works.

Table 7-30 Base year intersection performance

Intersection	AM Peak 2019 – LoS	PM Peak 2019 - LoS
Great Western Highway/Gipps Street (S)	C	C
Gipps Street/Sunflower Drive (S)	B	A
Kent Road/Caddens Road (S)	B	B
Kent Road/M4 Western Motorway On-ramp (S)	A	A
Kent Road/M4 Western Motorway Off-ramp (S)	B	B
Kent Road/Lansdowne Road (P)	A	A
Luddenham Road/Elizabeth Drive (P)	B	B
Elizabeth Drive/Badgerys Creek Road (P)	C	B
Badgerys Creek Road/The Northern Road (R)	A	A

7.9.2.2 Pedestrian and cycle network

The area surrounding Claremont Meadows is typical of an urban environment with shared (pedestrian and cyclist) footpaths along either side of Kent Road and Gipps Street from Caddens Road all the way to the Great Western Highway. Sunflower Drive is typical of a suburban environment with a footpath located along either one side of both sides of the local roads. The expectation is that cyclists utilise the local streets in these typical suburban environments.

The area surrounding Bringelly is generally typical of a rural environment with footpaths being located along all roads near the centre of the township, stopping soon after. The newly upgraded The Northern Road included a shared path along one side of The Northern Road which now extends the whole distance from Narellan through to Penrith.

All other local and regional roads that need to be utilised for the delivery of the Power Enabling Works do not have formalised pedestrian or cyclist paths.

7.9.3 Potential Impacts

7.9.3.1 Road Network Performance Impacts

The EIS states that the “road network (outside of St Marys) is expected to experience minimal temporary impacts as a result of the construction of the project. The network would generally perform to an acceptable LoS due to the low level of development in the study area south of the M4. Where cumulative temporary transport impacts may be experienced due to haul routes being used concurrently for the project and construction of the future M12 Motorway project and Western Sydney International, Sydney Metro would consult with these projects to manage impacts.” With this in mind, as the Power Enabling Works is a very small component of the overall Project, the road network impacts from the Power Enabling Works is expected to be negligible.

It is expected that an average of six and up to about 10 heavy vehicles will be required each day for each portion of the Power Enabling Works. In addition, an average of about six and up to 10 trucks and dogs will be required to deliver materials and remove waste from the northern ancillary site at Claremont Meadows each day. Due to the very low number of truck movements at each site per day, the impact on the LoS in mid-block performance and intersection performance will be negligible.

7.9.3.2 Pedestrian and cycle network

The introduction of additional heavy vehicles to the network during construction has the potential to result in safety impacts to pedestrians, cyclists and other motorists, especially where there is an increased likelihood for interaction.

Existing pedestrian and cycle infrastructure within the Power Enabling Works areas is primarily limited to areas adjacent to construction sites at Claremont Meadows and Bringelly. In addition, a small section of work is located adjacent to the Christadelphian Heritage College Sydney and Kemps Creek Public School, both located on Cross Street, Kemps Creek.

Temporary local pedestrian diversions may be required within the residential area west of Gipps Street and for the shared pathway and the footpath located to the west and east of Gipps Street and Kent Road respectively as a result of the Claremont Meadows temporary construction power route. It is expected that local pedestrian and cyclist diversions would be accommodated within the existing road environment.

Other existing pedestrian or shared footpaths would be maintained wherever possible during the Power Enabling Works. Where pedestrian or shared paths need to be impacted, alternate pedestrian and cycle routes would either need to be established, or pedestrians and cyclists would need to be managed through or adjacent to the worksites using pedestrian control measures.

Work required to be carried out on Cross Street adjacent to the two schools will take into consideration the school bus zones, parent drop-off and pick-up areas, school start and finish times, and school zone restrictions. Consultation with both schools will occur prior to the commencement of the work to ensure school related pedestrian safety is not compromised during the works.

7.9.3.3 Access

During construction of the project, it is anticipated that access would generally be maintained for local vehicles, pedestrians and cyclists, however, some temporary diversions may be required, and space may be constrained. Some temporary delays may also be experienced due to obstruction by construction vehicles. These potential impacts would be experienced by pedestrians, cyclists and vehicles accessing properties within the local network.

Potential impacts to property access are generally limited given the project would generally be located in rural areas. In the event that access to a property is temporarily impacted as a result of the Power Enabling Works, affected properties would have their access reinstated via diversion in consultation with the property owner (unless otherwise agreed with the property owner).

Access would also be maintained for emergency, delivery and waste collection vehicles during the construction period of the Power Enabling Works albeit that in some locations waste bins may need to be temporarily relocated to areas accessible for collection by the waste collection service.

7.9.4 Mitigation Measures

Table 7-31 Traffic, transport and access mitigation measures

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	TT1	Construction Traffic Management Plans would be prepared in accordance with the Construction Traffic Management Framework. A copy of the CTMPs must be submitted to the Planning Secretary for information before the commencement of any construction in the area identified and managed within the relevant CTMP.	MCoA E103 REMM T1	Approved Construction Traffic Management Plans. Correspondence with DPIE.	Prior to impacting roads subject to the Construction Traffic Management Plans	Project Manager
All	TT2	Coordination with Western Sydney Airport and Transport for NSW would be undertaken through the Traffic and Transport Liaison Group (TTLG) to manage potential cumulative construction traffic impacts with M12 Motorway and Elizabeth Drive.	REMM T3 MCoA E116 MCoA E117	TTLG Meeting Minutes	TTLG Meetings	Sydney Metro Quickway will be a part of the TTLG.
All	TT3	Road Safety Audits would be carried out to address vehicular access and egress, and pedestrian, cyclist and public transport safety. Road Safety Audits would be carried out as per the guidelines outlined in Section 10 of the Construction Traffic Management Framework	REMM T4	Completed Road Safety Audits	Prior to Prior to impacting roads subject to the Road Safety Audits	Project Manager
All	TT4	Maintain access for pedestrians and cyclists around construction sites as per the guidelines outlined in the Construction Traffic Management Framework. Appropriate signage and line marking would be provided to guide pedestrians and cyclists past construction sites and on the surrounding network to allow access to be maintained	REMM T5	Traffic and Pedestrian Controls Plans	Prior to impacting pedestrian and cycle facilities	Project Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	TT5	Access for construction vehicles to be planned as per the guidelines outlined in the Construction Traffic Management Framework. Construction site traffic would be managed to minimise movements during peak periods. Vehicle access to and from construction sites would be managed to maintain pedestrian, cyclist and motorist safety	REMM T6	CTMPs	Construction	Project Manager
All	TT6	The Power Enabling Works will be designed such that access to properties and existing infrastructure neighbouring the proposed work would be maintained.	Best practice	Approved Designs	Pre-construction	Sydney Metro Project Manager responsible for identifying any unforeseen issues that may arise.
All	TT7	The locations of all Heavy Vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction.	MCOA E104	GPS Records	Construction	Project Manager
All	TT8	Local roads proposed to be used by Heavy Vehicles to directly access ancillary facilities/ construction sites that are not identified already identified in the EIS must be approved by the Planning Secretary and be included in the CTMP. Local road approval requests would include the information discussed in Section 1.1.3.1	MCoA E105 MCOA E106	Local Road Approvals CTMPs	Prior to using local roads	Project Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	TT9	<p>Before any local road is used by a Heavy Vehicle for the purposes of construction of the Power Enabling Works, a Road Dilapidation Report will be prepared for the road.</p> <p>A copy of the Road Dilapidation Report will be provided to the Relevant Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of the work.</p>	MCoA E107	Road Dilapidation Reports	No later than one (1) month before the road being used by Heavy Vehicles associated with the construction of the work	Project Manager
All	TT10	<p>If damage to roads occurs as a result of the construction of the CSSI, the Proponent must either (at the Relevant Road Authority's discretion):</p> <p>(a) compensate the Relevant Road Authority for the damage so caused; or</p> <p>(b) rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report.</p>	MCoA E108	<p>Damage rectification records.</p> <p>Correspondence with relevant road authorities.</p>	Post construction	Project Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	TT11	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to: (a) minimise parking on public roads; (b) minimise idling and queueing on state and regional roads; (c) not carry out marshalling of construction vehicles near sensitive user(s); (d) not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided; and (e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMP.	MCoA E109	Training records Toolbox talks Pre-starts CTMPs	Pre-construction During construction	Project Manager Site Supervisor(s) Drivers
All	TT12	Access to all utilities and properties must be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier.	MCoA E110 MCoA E82	Consultation records	Prior to affecting access	Project Manager
All	TT13	The Proponent must maintain access to properties during the entirety of works unless an alternative access is agreed in writing with the landowner(s) whose access is impacted by the Power Enabling Works. Where construction of the Power Enabling Works restricts a property's access to a public road, Quickway will, until their primary access is reinstated, provide the property with temporary alternate access to an agreed road decided through consultation with the landowner, at no cost to the property landowner, unless otherwise agreed with the landowner.	MCoA E111 MCoA E112 MCoA E82	Consultation records	Prior to affecting access	Project Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	TT14	Any property access physically affected by the Power Enabling Works will be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access will be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier.	MCoA E113 MCoA E82	Consultation records	Post construction	Project Manager
All	TT15	During construction, all reasonably practicable measures will be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian, cyclist and vehicular access, and parking arrangements must be developed in consultation with affected businesses and landowners and implemented before the disruption. Adequate signage and directions to businesses will be provided before, and for the duration of, any disruption.	MCoA E114 MCoA E82	CTMPs	Pre-construction	Project Manager

All	TT16	<p>Permanent road works included in the as part of the Power Enabling Works scope will be designed and constructed with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and, accessibility of the network. Design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken:</p> <ul style="list-style-type: none"> a) in consultation with, and to the reasonable requirements of the relevant Traffic and Transport Liaison Group; b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements; c) to minimise and manage local area traffic impacts; d) to, where possible and appropriate, retain or reinstate parking in St Marys; e) to ensure access is maintained to property and infrastructure f) place and movement outcomes from precinct plans and design guidelines; and g) to meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, Sydney Metro – Western Sydney Airport Submissions Report – Appendix D 	MCoA E117	Design documentation	<p>During construction</p> <p>Post Construction</p>	<p>Sydney Metro</p> <p>Project Manager</p>
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Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
		Design Guidelines and TfNSW requirements. Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation during design development and before completion of construction of the CSSI.				
All	TT17	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users will be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the relevant Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Planning Secretary upon request.	MCoA E119	Road Safety Audits Correspondence with TTLG and DPIE.	Post construction	Project Manager
Portion 5 – Cross Street	TT18	Consultation with both Chistadelphia Heritage College Sydney and Kemps Creek Public School will occur prior to the commencement of the work to ensure school related pedestrian safety is not compromised during the works. Consideration of school bus zones, parent drop-off and pick-up areas, school start and finish times, and school zone restrictions will be included in the development of the CTMP for this site.	REMM T5 Best Practice	CTMP Consultation records	Pre-construction	Project Manager

7.9.4.1 Local Road Approval

In accordance with MCoA E105, heavy vehicles associated with the Power Enabling Works cannot access the construction sites or ancillary sites that have not been identified in the documents listed in MCoA A1 without approval from the Planning Secretary.

Once these local roads are approved, they will then need to be referenced and discussed as part of the CTMPs.

Local roads that will need to be used to complete the Power Enabling Works scope that aren't identified in the documents identified in MCoA A1, include the following:

- Patons Lane, Orchard Hills
- Sunflower Drive, Claremont Meadows
- Kent Road (South of M4 Motorway), Claremont Meadows
- Cross Street, Kemps Creek
- Western Road, Kemps Creek
- Martin Road, Kemps Creek
- Cuthal Road, Kemps Creek
- Pitt Street, Kemps Creek
- Longleys Road, Badgerys Creek,
- Wentworth Road, Bringelly,
- Greendale Road, Bringelly.

Local road approval requests would include the following:

- a) swept path analysis;
- b) demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two-way traffic flow on two-way roadways;
- c) details as to the date of completion of the road dilapidation surveys for the subject local roads; and
- d) measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times; and
- e) written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items (a) to(d) of this condition.

Appendix A Quickway Environmental Policy

ENVIRONMENTAL POLICY STATEMENT

With the growing concerns for our environment, Quickway's consideration for our environment is of the utmost importance.

It is our mission to be a responsible business committed to protecting and conserving the resources and preventing pollution in all our business activities through a commitment to the principles of Ecologically Sustainable Development as detailed in the Protection of the Environment Administration Act 1991 (NSW)

Management Commitment

Quickway is committed to conserving and protecting the environment by establishing and meeting the following targets and objectives:

- Compliance with applicable regulations, industry standards, and contractual requirements
- Implement and maintain a documented Environmental Management System compliant to ISO14001
- Promote responsible environmental practices to all employees through project environmental plans and registers that identify as a minimum opportunities to:-
 - Reduce water consumption and improve water efficiency.
 - Minimise pollution emissions or discharges to the environment.
 - Proactively protect, preserve and enhance biodiversity in the work zone and surrounding natural habitats.
- Continual improvement of the Environmental Management System through periodic reviews against defined environmental objectives
- Support of the concept of waste minimization and recycling.
- Support Client initiatives when on sites
- Our Environmental Policy is communicated to employees, clients, contractors and is available to the public

All Quickway workers are required to co-operate with management so that the policy, programmes and legislative requirements ensure that the environment remains in a safe and healthy condition.

Quickway Managers will always be held accountable for detecting conditions detrimental to the environment.

The Directors directly supports the environmental system requirements by integrating environmental deliberation and responsibility into day to day decisions and long term goals across all activities and disciplines.

Signed:



Derek Mullally,
Managing Director

Date: 1st June 2021

Quickway

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Appendix B Environmental Legal Requirements Register

1. Legal Requirements

Act	Activity / aspect	Requirement	Reference	Applicability
General				
<i>Environmental Planning and Assessment Act, 1979 (EP&A Act)</i>	All	The Project has been declared critical State Significant Infrastructure (CSSI) by virtue of Schedule 5, clause 4 of <i>State Environmental Planning Policy (State and Regional Development) 2011</i> . Comply with the terms minister for Planning's approval for the project. Obtain the Minister's approval for any project modifications that are not consistent with the planning approval.	S5.13 S5.14	Yes- provisions are applicable to the EIS Project Area
		Environmental assessment and public consultation, including a preferred infrastructure report that outlines any proposed changes to the SSI	S5.17	
		<ul style="list-style-type: none"> Application of other provisions of the EP&A Act Approvals and legislation that does not apply Approvals and legislation that must be applied consistently 	S5.22 S5.23 S5.24	
		The proponent may request the Minister to modify the Minister's approval for SSI, which should be lodged with the Planning Secretary.	S5.25	
<i>Environmental Planning and Assessment Act, 1979 (EP&A Act)</i>	All	For the purpose of attaining the objects of this Act relating to the protection and enhancement of the environment, a determining authority in its consideration of an activity shall, notwithstanding any other provisions of this Act or the provisions of any other Act or of any instrument made under this or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.	S.5.5	Not currently applicable, however additional Section 5.1 Assessments may be required throughout the Project.
<i>Protection of the Environment Operations Act 1997</i>	Environmental protection	Do not risk harming the environment by wilfully or negligently: <ul style="list-style-type: none"> Disposing of waste unlawfully Causing any substance to leak, spill or otherwise escape (whether or not from a container) or Emitting an ozone depleting substance. 	S115 S116 S117	Yes
	Notification of pollution incidents	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	S148	Yes

Environmental Legal Requirements Register

Integrated Management System (Uncontrolled when printed)

Act	Activity / aspect	Requirement	Reference	Applicability
<i>Crown Lands Act 1989</i>	Crown land	Ministerial approval required to grant a 'relevant interest' over a Crown Reserve. Any works on Crown land are likely to occur pursuant to a relevant interest (ie licence, permit, easement or right of way) to be granted for works on this land.	34A	No area of crown land within the project areas
<i>Roads Act 1993</i>	Road work	Requires the consent of the appropriate road authority for carrying out work on, or disturbing, the surface of a public road. Where the proponent is a public authority, the roads authority must consult with the applicant before making a decision.	S138	Yes- consultation with TfNSW and local councils to occur
Water				
<i>Water Management Act 2000</i> With the exception of controlled activity approvals, the <i>Water Management Act 2000</i> (WM Act) only applies in relation to those water sources covered by operational water sharing plans – these areas cover most of the State's major regulated river systems.	Water access and use.	Access licence required to take water from a water source (a lake, river or estuary or place where water occurs naturally on or below the surface of the ground, and includes coastal waters). This also applies to unregulated river access licences. Do not use of water on land (unless supplied by a water utility, irrigation corporation etc or in accordance with basic landholder rights) without a water use approval.	S56 S60A S89 S90 S91A	No- Public authorities are exempt from the need to obtain a Controlled Activity Approval. Third parties (such as Quickway) undertaking works on behalf of the public authorities are similarly exempt.
	Water management works	Do not construct/use a water supply work, drainage work or flood work without the appropriate approval.	S90 S91B S91C S91D	Not applicable to the project
	Waterfront land	Do not deposit material, excavate, or remove material within a watercourse bank, shore or bed, or on land 40 metres inland, or interfere with the likely flow of water to such a body, without a controlled activity approval.	S91	No Public authorities are exempt from the need to obtain a controlled activity approval. Water Management (General) Regulation 2011 (cl.38)
	Activity approvals	An aquifer interference approval confers a right on its holder to carry out one or more specified aquifer interference activities at a specified location, or in a specified area, in the course of carrying out specified activities.	S91(3)	Not applicable to the project

Environmental Legal Requirements Register

Integrated Management System (Uncontrolled when printed)

Act	Activity / aspect	Requirement	Reference	Applicability
<i>Water Act 1912</i> Note that this Act is being progressively repealed by the WM Act. With the exception of controlled activity approvals, the WM Act only applies in relation to those water sources covered by operational water sharing plans – these areas cover most of the State's major regulated river systems.	Surface water	Obtain a licence or permit for construction or use of 'work' for purposes including the taking and using of water	S21B	No Public authorities are exempt from the need to obtain a controlled activity approval.
<i>Sydney Water Act 1994</i>	Wastewater	Approval to discharge wastewater to sewer and Trade Waste Agreement	S49	Not currently applicable as no discharge into the Sydney Water sewer is proposed.
Sydney Water Regulation 1994	Plumbing and drainage	Permit required to do plumbing or drainage work, which includes connection to a stormwater drain	S18	Not currently applicable as no connection into the Sydney Water stormwater system is proposed.
<i>Protection of the Environment Operations Act 1997</i>	Water pollution	Do not cause water pollution (other than to a sewer), except in accordance with the conditions of an Environment Protection Licence.	S120 S122	Yes

Environmental Legal Requirements Register

Integrated Management System (Uncontrolled when printed)

Act	Activity / aspect	Requirement	Reference	Applicability
Noise				
<i>Protection of the Environment Operations Act 1997</i>	Plant maintenance and operation	Do not operate plant if it emits noise caused by poor maintenance or operation.	S139	Yes
	Materials management	Do not cause noise by failing to properly and efficiently deal with materials.	S140	Yes
Contaminated material				
<i>Protection of the Environment Operations Act 1997</i>	Land pollution	Do not cause or permit land pollution other than under authority of a licence or regulation. (However, it is not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations.)	S142A – S142E	Yes
<i>Contaminated Land Management Act 1997</i>	Reporting contamination	Notify the EPA if; <ul style="list-style-type: none"> Contaminants exceed thresholds contained in guidelines or the regulations where contamination has entered or will foreseeably enter neighbouring land, the atmosphere, groundwater or surface water. Contaminants in soil are equal to or exceed guideline levels with respect to the current or approved use of the land. Contamination meets other criteria that may be prescribed by the regulations. 	S60	Yes
Biodiversity				
<i>Biodiversity Conservation Act 2016</i>	Fauna	Do not harm any animal that is; of a threatened species, that is part of a threatened ecological community or is a protected animal, unless authorised under other legislation (e.g. planning approval).	S2.1 S2.8	Yes
	Habitat	Do not damage habitat of a threatened species or ecological community unless authorised under other legislation (e.g. planning approval).	S2.4 S2.8	Yes
	Biodiversity	Do not damage declared areas of outstanding biodiversity value unless authorised under other legislation (e.g. planning approval).	S2.3 S2.8	Yes
	Flora	Do not pick a plant that is; of a threatened species, that is part of a threatened ecological community or is a protected plant, unless authorised	S2.2 S2.8	Yes

Environmental Legal Requirements Register

Integrated Management System (Uncontrolled when printed)

Act	Activity / aspect	Requirement	Reference	Applicability
		under other legislation (e.g. planning approval).		
Biosecurity Act 2015	Biosecurity matters including pests, disease and weeds	The duty to prevent, eliminate and minimise biosecurity risks posed by biosecurity matters as defined by the Act.	S22	Yes
Biosecurity Regulation 2017	Pests and Diseases	Notify the presence any pest or disease listed in Schedule 1 of the Biosecurity Regulation 2014, within 1 working day after suspecting or becoming aware of the pest or disease.	Regulation cl.7 Schedule 1	Yes
Fisheries Management Act 1994	Dredging or reclamation	Provide the Minister for Primary Industries 28 days notice of planned dredging or reclamation work.	S199	No
	Mangroves, seagrasses and marine vegetation	Do not harm any mangroves, seagrasses or other marine vegetation on public water land protected by the regulations without a permit.	S205	Not applicable to project
	Fish passage	Do not block fish passage without a permit	S219	Not applicable to project
Environment Protection Biodiversity Conservation Act, 1999 (Commonwealth)	Flora and fauna conservation	Do not kill, injure or take a member of a listed threatened species without a permit.	Part 13	Yes
		Comply with the terms of any EPBC Act approval for the project.		N/A
Air Quality				
Protection of the Environment Operations Act 1997	Air quality	Do not operate plant which emits air pollution caused by poor maintenance or operation	S124	Yes
		Do not cause or neglect to prevent air pollution (eg dust exceeding reasonable levels without active management measures in place)	S126	Yes
		Do not cause or permit the emission of an offensive odour	S129	Yes
Protection of the Environment Operations (Clean Air) Regulation 2002	Air quality	Excessive impurities are visible for a continuous period of more than 10 seconds	S15	Yes
		Air emission concentrations for scheduled premises	Schedule 4	Yes

Environmental Legal Requirements Register

Act	Activity / aspect	Requirement	Reference	Applicability
Waste				
<i>Protection of the Environment Operations Act 1997</i>	Littering	Do not litter in a public place or an open private place. Do not litter from a vehicle. Only deposit advertising material in receptacles provided for mail or newspapers or under the door of the premises. Do not deposit advertising material on or in vehicles.	Part 5.6A	Yes
	Waste and transportation	Do not undertake a scheduled waste activity unless in accordance with an environmental protection licence. A licence must be obtained when construction and demolition wastes are applied to land under certain circumstances. This includes the reincorporation of crushed road base material back into roads and the placing of excess fill material onto properties. A licence is not required if the material: <ul style="list-style-type: none"> Is VENM. Does not exceed 200 tonnes in the Sydney, Newcastle and Wollongong areas, or 20,000 tonnes outside these areas. Is covered by a "general exemption". Current exempted materials are ENM, recycled aggregates and raw mulch. These exemptions are conditional and require some chemical testing of materials before they are placed onto land. A licence must be obtained if more than 2,500 tonnes (or cubic metres) is stored on a stockpile site at any one time, or more than 30,000 tonnes of waste is received per year from off site. 	Part 3.2 Schedule 1	Yes
		Only transport waste to a facility that can lawfully accept the waste.	S143	Yes
		Do not dispose of waste in a manner that harms or is likely to harm the environment.	S115	Yes
<i>Protection of the Environment Operations (Waste) Regulation 2005</i>	Waste and transportation	Comply with general requirements for the transport of waste. For example, any vehicle used by the person to transport waste must be kept in a clean condition and be maintained so as to prevent spillage of waste. For some wastes only licensed transporters can be used.	Regulation cl.49	Yes
		Comply with record keeping requirements in relation to the transport of certain types of waste.	Regulation Part 3	Yes
<i>Waste Avoidance and Resource Recovery Act</i>	Waste and resource recovery	Establish the waste hierarchy. Promotes waste avoidance and resources recovery by developing waste avoidance and resource recovery strategies.	-	Yes

Environmental Legal Requirements Register

Act	Activity / aspect	Requirement	Reference	Applicability
Heritage				
Heritage Act 1977	Heritage	Do not undertake an activity that will affect a place, building, work, relic, moveable object or precinct which is subject to an Interim Heritage Order or is listed on the State Heritage Register without approval from the Heritage Council.	S56-57	No
		Do not disturb or excavate land with knowledge or reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed; or Do not disturb or excavate land on where a relic has been discovered or exposed.	S139	No
		Notify the heritage Council on discovery of a relic	S146	Yes
National Parks and Wildlife Act 1974	Aboriginal places and objects	Do not harm or desecrate an Aboriginal object or Aboriginal place without consent.	S86	N/A
		Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	S89A	Yes
		An Aboriginal heritage impact permit may be issued	S90	No
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)	Protection of areas and objects	Report any discovery of Aboriginal remains to the Federal Minister for the Environment and Heritage.	S20	Yes
		Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	S22	Yes
Traffic				
Transport Administration Act 1988	Traffic and transport	Comply with the functions of Transport for NSW relating to traffic management and safety.	S52A	Yes
Roads Act 1993	Road Occupancy	Requires the consent of the appropriate road authority for carrying out work on, or disturbing, the surface of a public road. Where the proponent is a public authority, the roads authority must consult with the applicant before making a decision.	S138	Yes
Road Rules 2014	Traffic and transport	Establish the road rules that are applicable to vehicles and road users on roads in NSW		Yes
	Traffic and transport	Provisions of Road Rules 2014 not applicable to a person at the site of, and engaged in, roadworks	310	Yes
Hazard and Risk				

Environmental Legal Requirements Register

Integrated Management System (Uncontrolled when printed)

Act	Activity / aspect	Requirement	Reference	Applicability
<i>Environmentally Hazardous Chemicals Act 1985</i>	Hazards and risks	Obtain a licence to undertake prescribed activities involving environmentally hazardous chemicals or declared chemical wastes.	S28	Yes
<i>Dangerous Goods (Road and Rail Transport) Act 2008</i>	Hazards and risks	Ensure that dangerous goods are transported in a safe manner.	S9	Yes
<i>Pesticides Act 1999</i>	Hazards and risks	Do not use an unregistered pesticide without a permit. Use pesticides in an environmentally sensitive manner. Read the label or permit for the pesticide. Use registered pesticides in accordance with instructions on the label. Do not use any restricted pesticide unless authorised by a certificate of competency or a pesticide control order under the Act. Compliance with pesticide codes of practice is required.	S12 S13 S14 S15 S17	Yes
Incident Response				
<i>Protection of the Environment Operations Act 1997</i>	Incident response	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	S148	Yes
		Requires the holder of an EPL to prepare a pollution incident response management plan (PIRMP).	S153A-F	N/A. EPL not require for this work.
	Pre-emptive pollution/ incident control	Properly and efficiently maintain and operate any installed pollution control equipment (including monitoring devices)	S167	Yes
<i>Rural Fires Act 1997</i>	Fire related incident	Duty to take practical steps to prevent the occurrence of bush fires and to minimise the danger of the spread of bushfires. In the event of a fire related incident the project will comply with the requirements of the Act.	S63	Yes


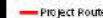

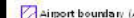

2. Other approvals and licences

Approval / Licence	Requirement	Relevant section of the CEMP
Section 143 notice of POEO Act	Prior to transportation of waste to receiving facility	WRMP (Appendix F)
Road Occupancy Licences	Prior to commencement of traffic related works that require access to roads	Section 7.9

Appendix C Environmental Control Maps (ECMs)

Environmental Control Map- Work Portion 2 & 3

Legend

-  Risk Substation
-  Project Route
-  Approx alignment
-  Airport boundary (Approx)
-  Auxiliary Site SA-02

Receiver Type

-  Commercial/Business
-  Community Use
-  Conservation/National Park
-  Industrial/Utilities
-  Filled Use
-  Recreational/Open Space
-  Residential
-  Rural/Primary Production
-  Special Use
-  Transport Infrastructure
-  Other
-  Education
-  Childcare







Heritage Layers

-  Heritage Conservation Area
-  Item - Landscape
-  Local Heritage - General
-  State Heritage

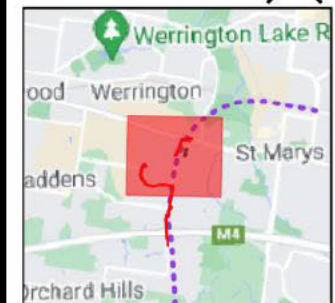
Contamination

-  High Risk
-  Medium Risk
-  Low Risk

Ecological Communities

-  Broad-leaved Ironbark- Grey Box- Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain (EEC)
-  Broad-leaved Ironbark- Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain (EEC)
-  Forest Red Gum- Rough-barked apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
-  Grey Box- Forest Red Gum grassy woodland on flats of the Cumberland Plain (CEEC)
-  Grey Box- Forest Red Gum grassy woodland on shale of the southern Cumberland Plain (CEEC)
-  Hard-leaved Scribbly Gum- Parameatta Red Gum healthy woodland of the Cumberland Plain (M)

0 100 200 m



Environmental Control

Map- Work Portion 3

Legend

- Kiosk/Substation
- Project Route
- Approach alignment
- Airport boundary (Approx)
- Auxiliary Site S01-02

Receiver Type

- Commercial/Industrial
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare

Heritage Layers

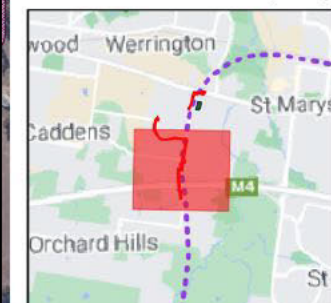
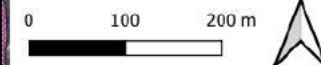
- Heritage conservation areas
- Item - Landscape
- Local Heritage - General
- State Heritage

Contamination

- High Risk
- Medium Risk
- Low Risk

Ecological Communities

- Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain (EEC)
- Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain (EEC)
- Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
- Grey Box - Forest Red Gum grassy woodland on fats of the Cumberland Plain (EEC)
- Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain (CEEC)
- Hard-leaved Scribbly Gum - Parramatta Red Gum heathy woodland of the Cumberland Plain (V)



Environmental Control

Map- Work Portion 1

Legend

- Approx alignment
- ▬ Airport boundary (Approx)
- ▬ Project Route

Receiver Type

- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare

Heritage Layers

- Heritage Conservation Area
- Item - Landscape
- Local Heritage- General
- State Heritage

Contamination

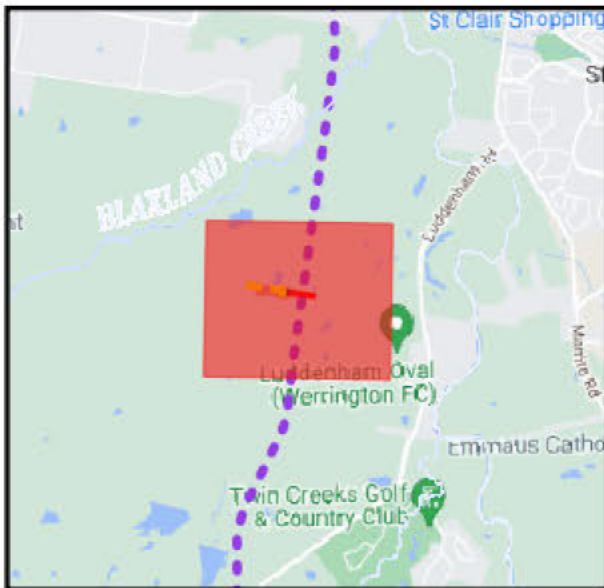
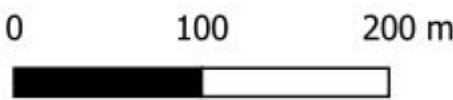
- High Risk
- Medium Risk
- Low Risk

Ecological Communities

- Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain (EEC)
- Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain (EEC)
- Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
- Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain (CEEC)
- Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain (CEEC)
- Hard-leaved Scribbly Gum - Parramatta Red Gum heathy woodland of the Cumberland Plain (V)
- No Go Zone- Identified Vulnerable Flora (Grevillea juniperina)

Access around vulnerable flora

- ▬ Bore pit excavation work area
- ▬ Access along existing path



Environmental Control Map- Work Portion 4 & 5

Legend

-  Hook/Substation
-  Project Route
-  Approx alignment
-  Airport boundary (approx)
-  Ancillary Site SA-02




Receiver Type

-  Commercial/Business
-  Community Use
-  Conservation/National Park
-  Industrial/Utilities
-  Mixed Use
-  Recreation/Open Space
-  Residential
-  Rural/Primary Production
-  Special Use
-  Transport/Infrastructure
-  Other
-  Education
-  Childcare







Heritage Layers

-  Heritage Conservation Areas
-  Item - Landscape
-  Local Heritage - General
-  State Heritage

Contamination

-  High Risk
-  Medium Risk
-  Low Risk




Ecological Communities

-  Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain (EEC)
-  Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain (EEC)
-  Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
-  Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain (CEEC)
-  Grey Box - Forest Red Gum grassy woodland on slope of the southern Cumberland Plain (CEEC)
-  Hard-leaved Slightly Gum - Parameatta Red Gum - leafy woodland of the Cumberland Plain (V)

0 100 200 m



Legend

-  Kiosk/Substation
-  Project Route
-  Approval Alignment
-  Airport boundary (Approx)
-  Ancillary Site SD-02

Receiver Type

-  Commercial/Business
-  Community Use
-  Conservation/National Park
-  Industrial/Utilities
-  Mixed Use
-  Recreational/Open Space
-  Residential
-  Rural/Primary Production
-  Special Use
-  Transport/Infrastructure
-  Other
-  Education
-  Childcare

Heritage Layers

-  Heritage Conservation Area
-  Item - Landscape
-  Local Heritage - General
-  State Heritage

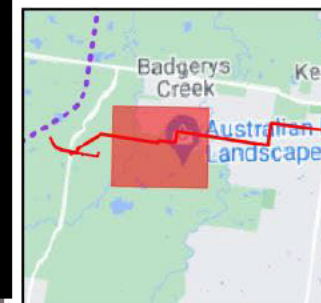
Contamination

-  High Risk
-  Medium Risk
-  Low Risk

Ecological Communities

-  Troed-leaved Ironbark - Grey Box - *Nelusetia decora* grassy open forest on clay/gravel soils of the Cumberland Plain (EEC)
-  Troed-leaved Ironbark - *Nelusetia decora* shrubby open forest on clay soils of the Cumberland Plain (EEC)
-  Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
-  Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain (CEEC)
-  Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain (CEEC)
-  Hard-leaved Scented Gum - Paratanna Red Gum heathy woodland of the Cumberland Plain (V)

0 100 200 m



Legend

- Kiosk/Substation
- Project Route
- Approx alignment
- Airport boundary (Approx)
- Ancillary Site SA-02

Receiver Type

- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare

Heritage Layers

- Heritage Conservation Area
- Item - Landscape
- Local Heritage - General
- State Heritage

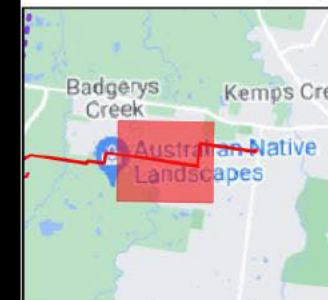
Contamination

- High Risk
- Medium Risk
- Low Risk

Ecological Communities






- Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain (EEC)
- Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain (EEC)
- Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
- Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain (CEC)
- Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain (CEC)
- Hard-leaved Scribbly Gum - Panamatta Red Gum heathy woodland of the Cumberland Plain (V)

0 100 200 m



Environmental Control Map- Work Portion 4

Legend

-  Kiosk/Substation
-  Project Route
-  Approx alignment
-  Airport boundary (Approx)
-  Ancillary Site S4-02




Receiver Type

-  Commercial/Business
-  Community Use
-  Conservation/National Park
-  Industrial/Utilities
-  Mixed Use
-  Recreational/Open Space
-  Residential
-  Rural/Primary Production
-  Special Use
-  Transport/Infrastructure
-  Other
-  Education
-  Childcare







Heritage Layers

-  Heritage Conservation Area
-  Item - Landscape
-  Local Heritage - General
-  State Heritage

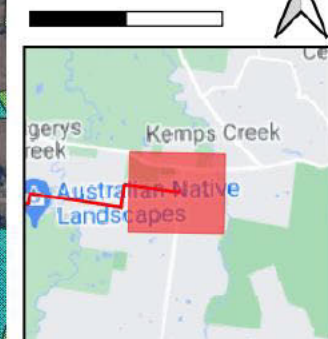
Contamination

-  High Risk
-  Medium Risk
-  Low Risk

Ecological Communities






-  Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain (EEC)
-  Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain (EEC)
-  Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
-  Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain (CEEC)
-  Grey Box - Forest Red Gum grassy woodland on slate of the southern Cumberland Plain (CEEC)
-  Hard-leaved Scribbly Gum - Panamatta Red Gum heathy woodland of the Cumberland Plain (V)

0 100 200 m



Environmental Control Map- Work Portion 6

Legend

-  Road/Substation
-  Project Route
-  Approx. alignment
-  Airport boundary (approx)
-  Ancillary Site SA-02

Receiver Type

-  Commercial/Business
-  Community Use
-  Conservation/National Park
-  Industrial/Uninhabited
-  Fitted Use
-  Recreational/Open Space
-  Residential
-  Rural/Primary Production
-  Special Use
-  Transport/Infrastructure
-  Other
-  Education
-  Childcare







Heritage Layers

-  Heritage Conservation Area
-  Item - Landscape
-  Local Heritage - General
-  State Heritage

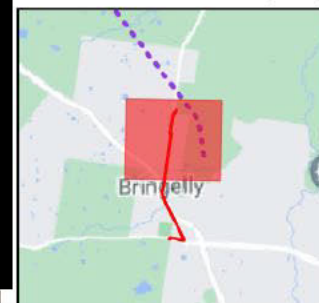
Contamination

-  High Risk
-  Medium Risk
-  Low Risk

Ecological Communities






-  Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain (EEC)
-  Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain (EEC)
-  Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
-  Grey Box - forest Red Gum grassy woodland on flats of the Cumberland Plain (CEEC)
-  Grey Box - forest Red Gum grassy woodland on shale of the southern Cumberland Plain (CEEC)
-  Hard-leaved Scrubby Gum - Parramatta Red Gum heathy woodland of the Cumberland Plain (V)

0 100 200 m



Environmental Control Map- Work Portion 6

Legend

-  Risk/Sulstation
-  Project Route
-  Approachment
-  Airport boundary (approx)
-  Auxiliary Site SAO 2

Receiver Type

-  Commercial/Business
-  Community Use
-  Conservation/National Park
-  Industrial/Utilities
-  Mixed Use
-  Recreational/Open Space
-  Residential
-  Rural/Primary Production
-  Special Use
-  Transport/Infrastructure
-  Other
-  Education
-  Childcare







Heritage Layers

-  Heritage Conservation Area
-  Item - Landscape
-  Local Heritage - General
-  State Heritage

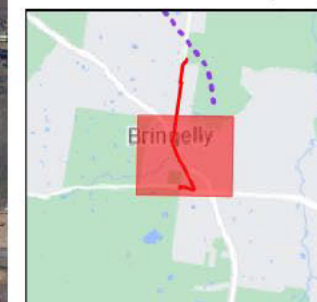
Contamination

-  High Risk
-  Medium Risk
-  Low Risk

Ecological Communities

-  Broad-leaved Ironbark- Grey Box- Melaleuca decora grassy open forest on clay/glaive soils of the Cumberland Plain (EEC)
-  Broad-leaved Ironbark- Melaleuca decora shrubby open forest clay soils of the Cumberland Plain (EEC)
-  Forest Red Gum- Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain (EEC)
-  Grey Box- Forest Red Gum grassy woodland on flats of the Cumberland Plain (CEEC)
-  Grey Box- Forest Red Gum grassy woodland on shalk of the southern Cumberland Plain (CEEC)
-  Hard-leaved Scribbly Gum- Paratanna Red Gum heathy woodland of the Cumberland Plain (V)

0 100 200 m



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



Environmental Incident and Non-compliance Reporting Procedure

SM-17-00000096

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Manager, Environment
System Owner:	Executive Director, Safety, Sustainability & Environment
Status:	FINAL
Version:	5.1
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Table of contents

1.	Purpose and scope	4
2.	Introduction	4
3.	Definitions.....	4
4.	Accountabilities	5
5.	Environmental Events	5
5.1.	Worked Example – Classifying Environmental Events	7
5.1.1.	Soil and Water Issue	7
5.1.2.	Soil and Water Non-compliance	7
5.1.3.	Soil and Water Incident.....	7
5.2.	Notifiable Events	8
5.3.	Event Types	8
6.	Environmental Incident Classification and Management.....	10
6.1.	Incident Classification	11
6.1.1.	Class 3 Incidents.....	11
6.1.2.	Class 2 Incidents.....	11
6.1.3.	Class 1 Incidents.....	12
6.2.	Incident Notification.....	12
6.2.1.	Principal's Representative (PR).....	12
6.2.2.	Environmental Lead (EL)	13
6.3.	Incident Notification Reports	14
6.4.	Incident Investigations.....	14
6.5.	Environmental Incidents with Health and Safety Impacts	14
6.6.	Reporting Pollution Incidents to Relevant Authorities	15
6.6.1.	Maritime Related Incident Notification and Reporting.....	16
6.7.	Environmental Compliance Register	16
7.	Environmental Non-compliance	17
7.1.	Non-compliance Rate.....	17
8.	Corrective and Preventative Actions	18
8.1.	Action Status	18
9.	Related Documents and References.....	19
10.	Superseded Documents	19
11.	Document History	19

Figures

Figure 1: Environmental Event Classification Process	6
Figure 2: Environment Incident notification process for Class 1 and 2 Incidents.....	13

Tables

Table 1: Examples of Notifiable Events	8
Table 2: Environmental Event Types and their descriptions	9
Table 3: Examples of Environmental Incidents	10
Table 4: Classification System for Environmental Incidents	11
Table 5: Contact details for Relevant Authorities	15

1. Purpose and scope

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

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

2. Introduction

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

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

3. Definitions

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

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

Term	Definition
Material Harm to the Environment	<p>harm to the environment is material if:</p> <ul style="list-style-type: none"> a) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or b) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and c) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment. <p>It does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.</p>

Terms and jargon specific to this procedure are defined within the [Sydney Metro Glossary](#).

4. Accountabilities

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

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

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

5. Environmental Events

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

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

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

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

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

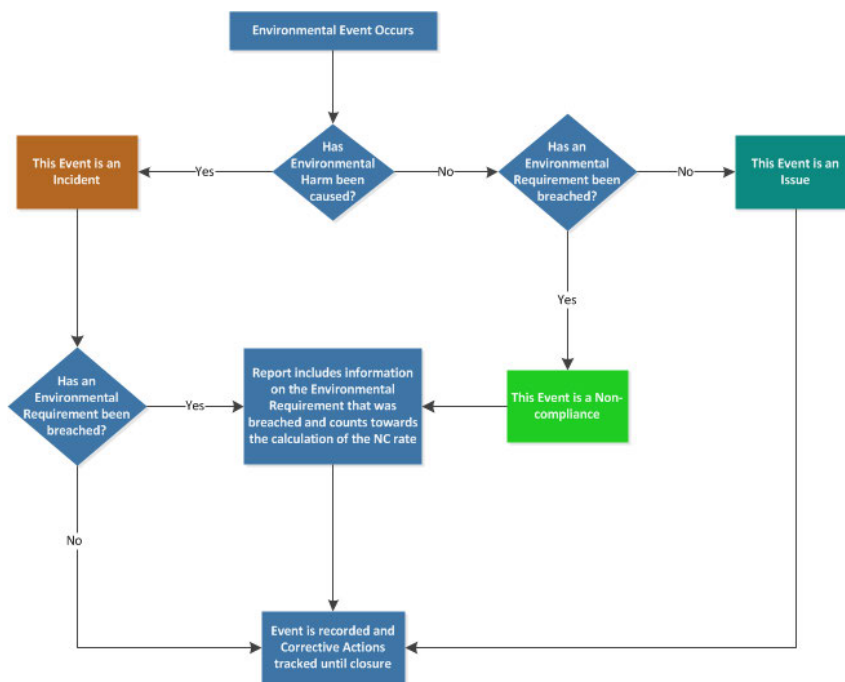


Figure 1: Environmental Event Classification Process

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

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

5.1. Worked Example – Classifying Environmental Events

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

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

5.1.1. Soil and Water Issue

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

5.1.2. Soil and Water Non-compliance

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

5.1.3. Soil and Water Incident

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

5.2. Notifiable Events

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

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

Table 1: Examples of Notifiable Events

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

5.3. Event Types

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

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

Table 2: Environmental Event Types and their descriptions

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

6. Environmental Incident Classification and Management

Sydney Metro has defined an Environmental Incident as:

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

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

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

Table 3: Examples of Environmental Incidents

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

6.1. Incident Classification

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

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

Table 4: Classification System for Environmental Incidents

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

6.1.1. Class 3 Incidents

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

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

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

6.1.2. Class 2 Incidents

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

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

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

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

6.1.3. Class 1 Incidents

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

6.2. Incident Notification

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

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

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

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

6.2.1. Principal's Representative (PR)

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

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

6.2.2. Environmental Lead (EL)

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

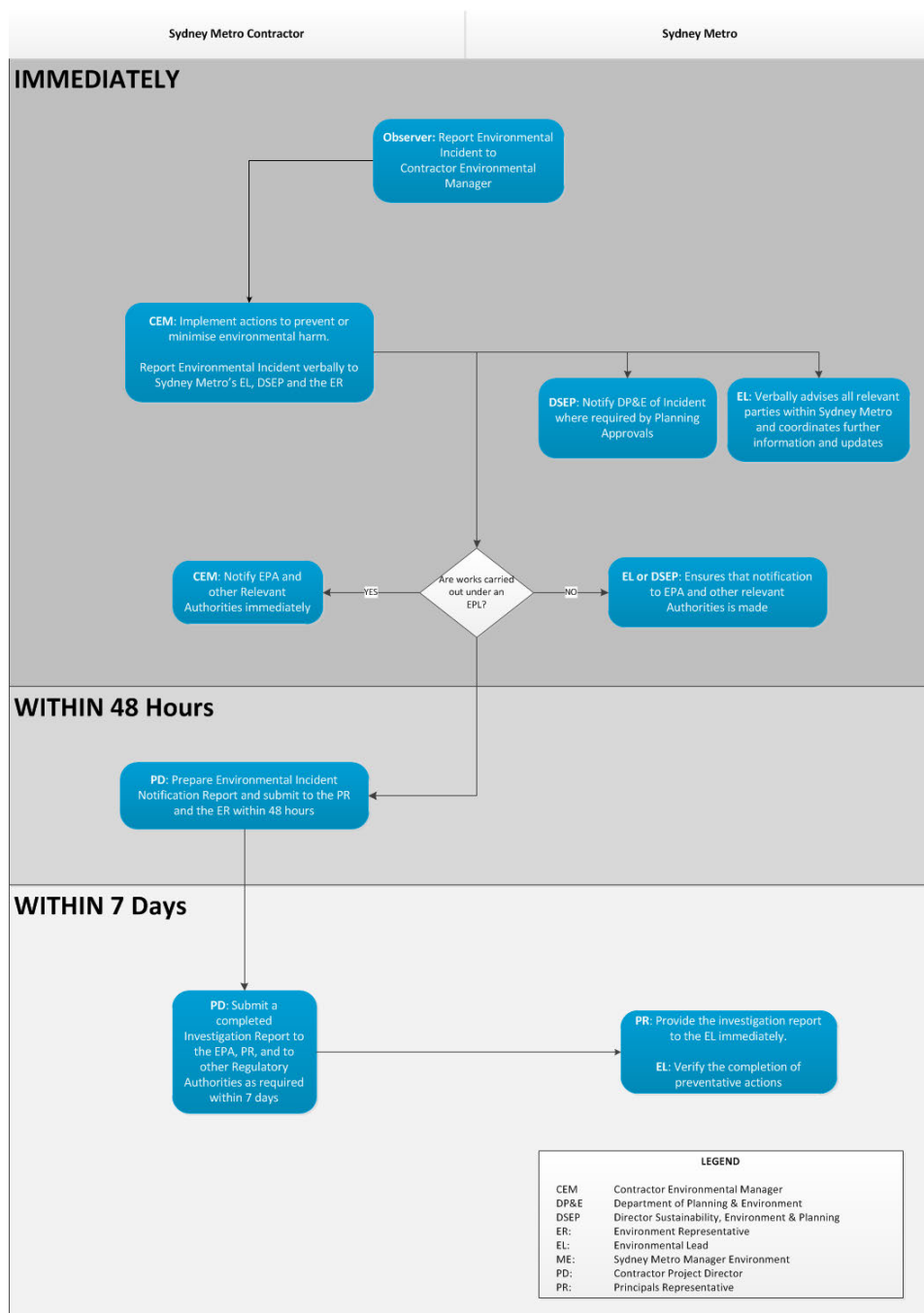


Figure 2: Environment Incident notification process for Class 1 and 2 Incidents

6.3. Incident Notification Reports

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

6.4. Incident Investigations

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

When conducting an Environmental Incident investigation, they must:

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

6.5. Environmental Incidents with Health and Safety Impacts

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

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

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

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

6.6. Reporting Pollution Incidents to Relevant Authorities

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

Table 5: Contact details for Relevant Authorities

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

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

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

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

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

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

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

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

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

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

6.6.1. Maritime Related Incident Notification and Reporting

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

- [Australian Maritime Safety Authority Incident Reporting](#); and
- [Reporting obligations of owners and masters of domestic commercial vessels](#).

6.7. Environmental Compliance Register

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

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

7. Environmental Non-compliance

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

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

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

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

7.1. Non-compliance Rate

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

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

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

8. Corrective and Preventative Actions

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

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

Actions must:

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

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

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

8.1. Action Status

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

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

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

9. Related Documents and References

Related Documents and References

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

10. Superseded Documents

Superseded Documents

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

11. Document History

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

Appendix E Weed Management Procedure

Sydney Metro Western Sydney Airport

Weed Management Procedure

4022-WSA-PRO-007

Revision 0.0

16 June 2021

DOCUMENT CONTROL & APPROVAL			PROJECT NO.		4022
ISSUE	DATE	ISSUE DETAILS / REMARKS	AUTHOR	CHECKED	APPROVED
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Contents

1. Introduction	3
1.1 Purpose.....	3
1.2 Scope	3
2. Workflow	4
3. Responsibilities	5
4. Procedure Process.....	5

Tables

Table 1 Weed management responsibilities	5
--	---

Figures

Figure 1 Weed monitoring workflow	4
---	---

Definitions

Abbreviation / Term	Definition
BC Act	Biodiversity Conservation Act 2016
CEMP	Constructors Environmental Management Plan
TEC	Threatened Ecological Communities
WMP	Weed Management Procedure

1. Introduction

1.1 Purpose

The purpose of this procedure is to provide details on weed management and controls to be implemented during the construction of the Sydney Metro Western Sydney Airport power enabling works project (The Project). Ensuring the clearing of native vegetation is avoided and minimised to the greatest extent practicable, with the objective of reducing impacts to threatened ecological communities and threatened species habitat within and around the project area.

All project personnel will be inducted prior to works commencing and notified of this procedure during site inspections and toolbox talks.

All personnel managing and using herbicides will be appropriately trained prior to commencing work.

Further information on project staff inductions and training are provided in Section 6.3 of the CEMP.

1.2 Scope

The Weed Management Procedure (WMP) outlines the measures required for Weed Management on the Project, focusing on early identification of invasive weeds and effective management controls. Vegetation, including weeds and exotic, would be cleared to facilitate construction of the project. This procedure focuses on weed control prior to vegetation clearance, weed management during clearing, and progressive weed control throughout the construction phase.

Due to the disturbed rural landscape, there are a variety of weed species through all construction sites as part of the Project.

2. Workflow

Sydney Metro Western Sydney Airport, Power Enabling Works

Weed Monitoring Workflow

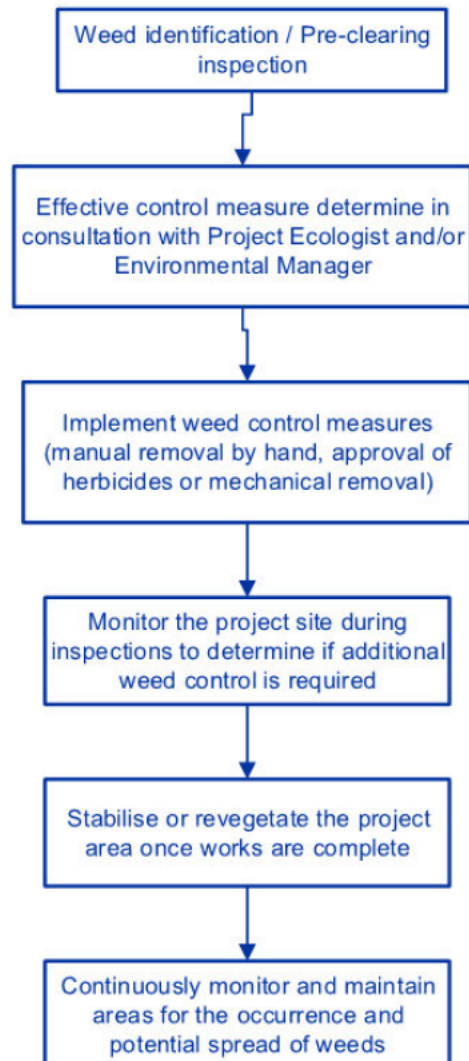


Figure 1 Weed monitoring workflow

3. Responsibilities

Table 1 Weed management responsibilities

Required Action	Responsibility	When to implement
Prior to any clearing of any native vegetation a pre-clearing survey/ inspection will be conducted with a qualified Ecologist and Environmental Manager (EM) or delegate.	Ecologist Environmental Manager	Before clearing commences
Maintaining compliance records of pre-clearing inspections, release of pre-clearing hold points and Ecologist inspections.	Environmental Manager	Pre-construction, Construction
Site inductions and toolbox talks will be provided prior to carrying out work activities.	Environmental Manager Site Supervisor	Pre-construction
Work in accordance with all aspects of WMP, ask EM or supervisor if unsure of procedure processes.	All staff	Pre-construction, Construction
Report any concerns with potentially misidentified flora or injured/disturbed fauna species.	All Staff	Pre-construction, Construction

4. Procedure Process

- 1) Prior to any clearing of any native vegetation a pre-clearing survey/ inspection will be conducted with a qualified Ecologist and Environmental Manager (or delegate) (EM), the survey will be inclusive of:
 - Identification of trees with clear habitat features or hollows and Identification of any threatened flora and fauna.
 - A check on the physical delineation of the limit of clearing.
 - An approved erosion and sediment control plan for the worksite.
 - The completion of any other pre-clearing requirements within any permits, licences and/or project approvals.
- 2) The completion of the pre-clearing inspection will form a HOLD POINT requiring sign-off from the Contractor's Environmental Manager (or delegate) and the Ecologist. A post clearance report, including any relevant maps that clearly validate the types of weeds and specific areas to be cleared.
- 3) During construction, prior to any clearing works, weed management would be undertaken in accordance with the Biosecurity Act 2015 to ensure no spread of weeds to the surrounding environments, including during transport on and off site to a licensed waste facility.
- 4) Compliance records will be kept for:
 - All pre-clearing inspections undertaken.
 - Releases of hold points.
 - Environmental inspections undertaken.

- Amount and type of herbicide used.
 - Amount of weed species taken to a disposal facility.
- 5) Once weeds have been accurately identified, weed control will be implemented by suitably qualified or experienced personnel. Removal of weeds will consider best management practices as follows:
- Manual removal by hand as a preference to use of herbicides.
 - If manual removal is not practicable, approved/registered herbicides will be applied.
 - Using only herbicides that specifically target certain weed species and are approved for use near waterways and drains.
 - Applying herbicides during drier times, and where applicable, when water level is below the high-tide mark.
 - DO NOT apply herbicides during rainfall or prior to predicted rain.
 - Staying clear of drains and waterways when mixing and loading herbicides, or cleaning equipment.
 - Protect non-target species from spray drift of herbicides by only permitting use when winds are appropriate.
 - Mechanical removal where manual or herbicide use is not practicable.
 - Replacing non-target species removed/killed as a result of weed control activities to maintain stability and control erosion.
 - Any weeds, propagules, and other plant parts and/or excavated topsoil material that has the potential to be infested with weed propagules that are likely to regenerate would be treated on site where practicable or contained and removed from site for disposal at a licenced waste facility.
 - During construction, all vehicles driving to and from the Project site would follow a protocol to prevent the spread or introduction of phytophthora, namely vehicles would be clean, including the tyres and any equipment, and loads covered during transport.
 - Rehabilitated sites will be effectively monitored during weekly site inspections, and other regular inspections or audits undertaken as required in the CEMP section 3.7. Additional weed management will be implemented if there are any new occurrences of infestations present and reporting accordingly.

Appendix F Waste and Recycling Management Plan

Sydney Metro Western Sydney Airport Power Enabling Works

Waste and Recycling Management Sub Plan

4022-SMW-WRMP-001

Revision 0.0

25 January 2022

CURRENT DOCUMENT REVISION			PROJECT NO.		4022
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Document Revision History			PROJECT NO.		4022
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Draft A	29/10/2021	Draft for review – as part of CEMP	[REDACTED]	[REDACTED]	[REDACTED]
Draft B	01/12/2021	Response to SM comments	[REDACTED]	[REDACTED]	[REDACTED]
Draft C	1/01/2022	Response to ER comments	[REDACTED]	[REDACTED]	[REDACTED]
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Contents

1. Introduction.....	6
1.1 Context	6
1.2 Project Background.....	6
1.3 Scope of this Sub-plan	6
1.4 Implementation of this Sub-plan	6
2. Purpose and Objectives	7
2.1 Purpose	7
2.2 Management Objectives and Performance Outcomes	7
3. Environmental Requirements	7
3.1 Relevant legislation and guidelines	7
3.2 WRMP requirements.....	8
4. Environmental Aspects and Impacts	13
4.1 Construction activities	13
4.2 Construction waste streams	13
5. Environmental Control Measures	14
5.1 Identifying waste	14
5.2 Waste hierarchy	14
5.3 Classification of wastes	15
5.4 Waste exemptions	16
5.5 Virgin excavated natural material (VENM).....	16
5.6 Waste disposal.....	17
5.7 Spoil handling and reuse.....	17
5.8 Mitigation measures	18
6. Compliance Management.....	22
6.1 Roles and Responsibility	22
6.2 Training.....	22
6.3 Monitoring and Inspection	22
6.4 Reporting and Records	22
7. Review and Improvement.....	23

Appendices

Appendix A	VENM Certificate	24
Appendix B	Section 143 Register.....	25
Appendix C	Potential waste facilities	26
Appendix D	Waste Register Template	30

Tables

Table 1	Relevant Performance Outcomes	7
Table 2	Non-statutory guidelines and standards	8
Table 3	Ministers Conditions of Approval relevant to the WRMP	9
Table 4	Revised Environmental Mitigation Measures relevant to the WRMP	10
Table 5	Relevant CEMF requirements of the WRMP	10
Table 6	Waste and Spoil Management and Mitigation measures relevant to the project	19
Table 7	Potential Waste Transport and Management Facilities.....	27

Figures

Figure 1	Waste Management Hierarchy (NSW WARR Strategy 2014-21, EPA)	14
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Glossary / Abbreviations

Abbreviation	Description / Definition
ASS	Acid Sulfate Soils
CEMP	Construction Environmental Management Plan
Contractor	Quickway Constructions Pty Ltd
DECC	Former Department of Environment and Climate Change (NSW) now NSW Office of Environment and Heritage.
DPIE	NSW Department of Planning, Industry and Environment
DPI (Fisheries)	NSW Department of Primary Industries (Fishing and Aquaculture)
DPI (Water)	NSW Department of Primary Industries (Water) (Former Office of Water)
EIS	Sydney Metro – Western Sydney Airport Environmental Impact Assessment
Environmental incident	<p>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.</p> <p>Note: Material Harm is defined as: Harm that: (a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or (b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good the harm to the environment)</p>
EPA	NSW Environment Protection Authority
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPL	NSW Environment Protection Licence under the Protection of the Environment Operations Act 1997.
EWMS	Environmental Work Method Statements
Minister, the	NSW Minister for Planning
MCoA	NSW Minister for Planning Condition of Approval
PASS	Potential Acid Sulfate Soils
POEO Act	NSW Protection of the Environment Operations Act 1997
RMS	NSW Roads and Maritime Services now TfNSW
Secretary	Secretary of the Department of Planning, Industry and Environment
the Project	SMWSA Power Supply Works
TfNSW	Transport for NSW

1. Introduction

1.1 Context

This Waste and Recycling Management Sub-plan (WRMP or Sub-plan) forms part of the Construction Environmental Management Plan (CEMP) for the Western Sydney Airport Power Enabling Works (the Project). This Sub-plan is not identified in the Staging Report as being required, but has developed to provide comprehensive description of the proposed waste and recycling management during construction.

This WRMP has been prepared to outline how Quickway will comply with the applicable NSW Minister for Planning's Conditions of Approval (MCoA) and the Sydney Metro (SM) Construction Environmental Management Framework (CEMF) during construction of the Project.

This plan 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 Environmental Impact Statement (EIS) Revised Environmental Management Measures (REMM).

The WRMP has been prepared in accordance with the following, collectively referred to as the 'Project requirements' herein:

- The EIS approval including the MCoA and REMMs

1.2 Project Background

The SM Project EIS included (Chapter 18) an assessment of the impacts of construction and operation of the Project on waste and spoil for the Western Sydney Airport (WSA). The construction activities likely to generate waste and spoil and the expected waste streams are discussed in [Section 5](#).

The EIS identified the potential for waste and spoil generation during construction, predominantly associated with excavation activities. This document included a suite of mitigation measures which if implemented would effectively manage any potential impacts to waste impacts associated with the Project. These management measures are described in this WRMP in [Section 6](#).

Please refer to Chapter 1 of the CEMP for Project background and statutory context and Chapter 4 for Power Enabling Works description.

1.3 Scope of this Sub-plan

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

Operational management measures do not fall within the scope of this Plan and as such are not included in management processes.

1.4 Implementation of this Sub-plan

Table 4 of the Staging Report states that waste and recycling should be addressed in the main body of the CEMP, however, due to ease, this Waste and Recycling Management Sub-plan was prepared as an Appendix to the main CEMP. In accordance with MCoA C1, Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Sydney Metro Construction Environmental Management Framework (CEMF). The CEMF requires issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage scale and nature of the Project Works, and includes plans for waste management. These requirements have been collectively addressed through the preparation and implementation of this document.

2. Purpose and Objectives

2.1 Purpose

The purpose of this WRMP is to describe how waste will be managed during construction of the Project.

2.2 Management Objectives and Performance Outcomes

The key objective of the WRMP is to ensure all Project requirements relevant to waste are described, scheduled and assigned responsibility as identified in the Approval documents and in accordance with relevant legislation and other requirements described in [Section 3](#) of this Plan.

The CEMF Waste Management Objectives include:

- i. Minimise waste throughout the project life-cycle
- ii. Waste management strategies for off-airport works will be implemented in accordance with the *Waste Avoidance and Resource Recovery Act 2001* management hierarchy as follows:
 - o Avoidance of unnecessary resource consumption;
 - o Resource recovery (including reuse, reprocessing, recycling and energy recovery); and
 - o Disposal.

The Submissions Report identified specific construction performance outcomes for the Project; those relevant to the management of waste and recycling for the Power Enabling Works are included in

Table 1 Relevant Performance Outcomes

Performance Outcome Requirement	Construction Performance Outcomes	Key Performance Indicators
Conservation of natural resources is maximised	<ul style="list-style-type: none"> 100 per cent of useable spoil is reused in accordance with the spoil reuse hierarchy A minimum 95 per cent recycling target is achieved for construction and demolition waste Products made from recycled content are prioritised The use of potable water for non-potable purposes is avoided if non-potable water is available The reuse of water is maximised, either on-site or off-site. 	<p>At least 95 percent of recyclable inert and non-hazardous construction waste (excluding spoil) will be recycled or alternatively beneficially reused</p> <p>At least 50 per cent of office waste would be recycled or alternatively beneficially reused.</p> <p>Water captured in excavations would be maximised through the re-use in the construction process (ie for compaction), dust suppression or irrigation where possible.</p>

3. Environmental Requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation

Appendix B of the CEMP contains details of the legislation relevant to this management plan.

3.1.2 Guidelines and standards

Table 2 Non-statutory guidelines and standards

Guidelines and standards
Guide to the investigation and sampling of sites with potentially contaminated soil (Australian Standard, 2005)
NSW Government Resource Efficiency Policy (GREP) (OEH 2014)
NSW Waste and Resource Recovery Strategy 2014-21 (EPA, 2014)
Waste Classification Guidelines Part 1: Classifying waste (NSW EPA, 2014)
Waste Classification Guidelines Part 2: Immobilisation of waste (NSW EPA, 2014)
Waste Classification Guidelines Part 4: Acid sulfate soils (NSW EPA, 2014)
Waste Reduction and Purchasing Policy 2011-2014 (WRAPP), NSW Government
Guidelines for Consultants Reporting on Contaminated Sites (EPA, 2000)
Guidelines on Resource Recovery Orders and Exemptions (EPA, 2015)
National Environment Protection (Assessment of Site Contamination) Measure 1999 (National Environment Protection Council, April 2013).
Sampling Design Guidelines (EPA, 2015)
Sydney Metro Waste Classification Procedure (SM-20-00040677) Version 3.0 (Sydney Metro 2020)
Sydney Metro Contaminated land management Guideline (SM-19-00076608) Version 2.0 (Sydney Metro 2019)

3.2 WRMP requirements

The MCoAs relevant to this WRMP are listed Table 3, REMMs relevant to this WRMP are listed Table 4 and CEMF requirements relevant to this WRMP are listed Table 5.

A cross reference is also included in these tables to indicate where the condition is addressed in this WRMP or other Project management documents.

Table 3 Ministers Conditions of Approval relevant to the WRMP

MCoA	Condition Requirements	Document Reference
E98	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared before the commencement of construction and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	CEMP Appendix M
E122	Waste generated during construction and operation must be dealt with in accordance with the following priorities:	
	(a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced;	Section 5.2
	(b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and	Section 5.2
	(c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	Section 5.2 Section 5.6
E123	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	Section 5.3 Section 5.4
E124	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	Section 5.3 Section 5.4
E125	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	Section 5.3

Table 4 Revised Environmental Mitigation Measures relevant to the WRMP

Outcome	MCoA	Condition Requirements	Document Reference
Waste Minimisation	WR1	Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging.	Section 5.2
Reuse and recycling	WR2	Waste streams would be segregated to avoid cross contamination of materials and maximise reuse and recycling opportunities.	Section 5.2 Section 5.7
Reuse on Sydney Metro sites	WR3	A materials tracking system would be implemented for material transferred between construction sites	Section 6.3 Section 6.4

Table 5 Relevant CEMF requirements of the WRMP

CEMP Ref.	Condition Requirements	Document Reference
14.1 a.	<p>The following waste objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise waste throughout the project life-cycle; and ii. Waste management strategies will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: <ul style="list-style-type: none"> • Avoidance of unnecessary resource consumption; • Resource recovery (including reuse, reprocessing, recycling and energy recovery); and • Disposal. 	Section Error! Reference source not found.

CEMP Ref.	Condition Requirements	Document Reference
14.2 (a)	<p>On-airport management of waste and resources will be achieved through the implementation of the SMWSA Waste and Resources CEMP and Principal Contractors will develop and implement a Waste Management Plan for all off-airport works. Both plans will include as a minimum:</p> <ul style="list-style-type: none"> i. The waste management mitigation measures as detailed in the planning approval documentation; ii. The responsibilities of key project personnel with respect to the implementation of the plan; iii. Waste management monitoring requirements; iv. A procedure for the assessment, classification, management and disposal of waste in accordance with Waste Classification Guidelines; and v. Compliance record generation and management. 	<p>This Sub-plan</p> <p>Section 5</p> <p>Section 6.1</p> <p>Section 6.3</p> <p>Section 5.3</p> <p>Section 6.4</p>
14.1 (b)	Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by the Principal Contractor.	Section Error! Reference source not found.
14.2 (b)	Principal Contractors will undertake the following waste monitoring as a minimum:	
	<ul style="list-style-type: none"> i. Weekly inspections will include checking on the waste storage facilities on site; and 	Section 6.3
	<ul style="list-style-type: none"> ii. All waste removed from the site will be appropriately tracked from 'cradle to grave' using waste tracking dockets. 	Section 6.4
14.2 (c)	Principal Contractors will report all necessary waste and purchasing information to Sydney Metro as required for Sydney Metro to fulfil their WRAPP reporting requirements.	Section 6.4

CEMP Ref.	Condition Requirements	Document Reference
14.2 (d)	Compliance records will be retained by the Principal Contractors in relation to waste management including records of inspections and waste dockets for all waste removed from the site.	Section 6.4

4. Environmental Aspects and Impacts

4.1 Construction activities

The Project will involve a range of construction activities that will generate waste materials and resources. Other broad waste categories are identified below:

- Excavation
- Vegetation clearing mulching
- Concrete waste
- Waste generated from chemical and/or spill clean-up and remediation
- Remediation of contaminated materials (if required)
- Packaging materials
- Waste produced during plant and vehicle washdown servicing and maintenance
- Sewage and general waste from the ancillary facilities
- General waste from offices and other facilities.

Quantities of waste produced during construction of the Project will be tracked as described in [Section 6.3](#) and [Section 6.4](#).

4.2 Construction waste streams

The following potential construction related waste streams have been identified:

- Excavation wastes including
 - road pavements (concrete and asphalt)
 - usable spoil such as ENM/VENM (subject to waste classification)
 - Contaminated/unsuitable spoil material, such as excavated materials from the existing (and former) industrial areas
- Demolition wastes from existing structures that require demolition, pipe work, pavements and concrete pathways
- Vegetation from removal of shrubs and trees
- Packaging materials associated with items delivered to site such as pallets, crates, cartons, plastics and wrapping materials
- Offcuts of conduits
- Surplus concrete
- Wastes produced from the maintenance of various heavy construction equipment including liquid hazardous wastes from cleaning, repairing and maintenance
- Non-hazardous wastes from worker's facilities such as toilets
- General wastes including office wastes, scrap materials and biodegradable wastes.

5. Environmental Control Measures

5.1 Identifying waste

In order to effectively manage waste, it must first be identified and classified. Classification of waste is discussed further below. Due to the limited volumes of spoil expected, any spoil will be sampled and a classified accordingly once stockpiled, prior to disposal.

The proposed sampling density and arrangement will be undertaken in accordance with the NSW EPA Sampling Design Guidelines.

5.2 Waste hierarchy

The waste management hierarchy and requirements identified in the NSW WARR Act and the NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014) will be adopted to reduce, as far as practicable, wastes going to landfill. The waste management hierarchy is presented in Figure 1.

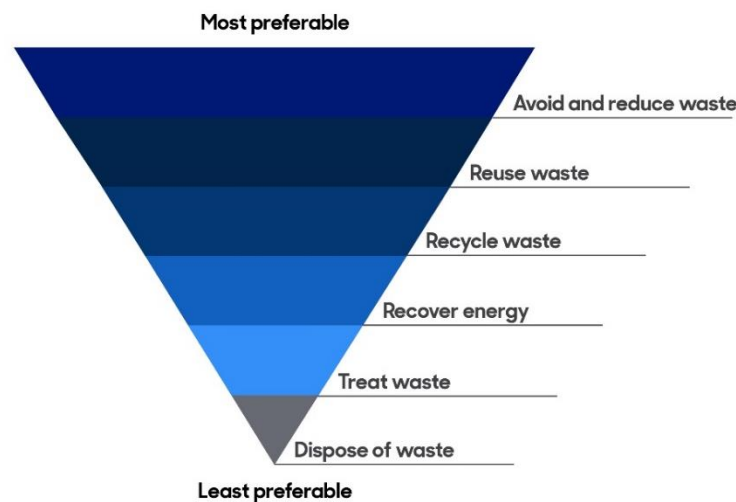


Figure 1 Waste Management Hierarchy (NSW WARR Strategy 2014-21, EPA)

Quickway will avoid or reduce waste generation where practicable. This will be achieved by implementing a planned approach to procurement that reduces the purchase of excess quantities, unnecessary packaging, material damage and promotes supplier 'take back' agreement for non-used materials and packaging, and responsible use by personnel.

Where avoiding or reducing waste is not possible, waste is to be reused, recycled, or recovered. Waste separation and segregation will be promoted on-site to facilitate reuse and recycling as a priority of the waste management program as follows:

- Waste segregation onsite – waste materials, including demolition waste, will be separated onsite into dedicated bins/areas for either reuse onsite or collection and transport to offsite facilities
- Waste separation offsite – wastes to be deposited into one bin where space is not available for placement of multiple bins, and the waste is to be sorted offsite by a waste contractor.

Where re-using, recycling or recovering waste is not possible, waste will be treated or disposed of at a facility lawfully permitted to accept the waste, in accordance with a Resource Recovery Exemption or Order issued under the POEO Act 1997 and POEO Waste Regulation 2014, or to any other place that can lawfully accept such waste.

5.3 Classification of wastes

The classification of waste is undertaken in accordance with the EPA's *Waste Classification Guidelines Part 1: Classifying Waste* (2014). Under the guidelines waste is classified into six waste classes:

- Special waste
- Liquid waste
- Hazardous waste
- Restricted solid waste
- General solid waste (putrescible)
- General solid waste (non-putrescible).

The process for classifying these wastes is described below.

Step 1: Is it 'special waste'?

Establish if the waste should be classified as special waste. The potential environmental impacts of special waste need to be managed to minimise the risk of harm to the environment and human health. Special wastes are: clinical and related, asbestos, waste tyres. Definitions are provided in the guidelines.

Note: Asbestos and clinical wastes must be managed in accordance with the requirements of Clauses 42 and 43 of the POEO Waste Regulation.

Step 2: If not special, is it 'liquid waste'?

If the waste is not special waste, it must be decided whether it is 'liquid waste'. Liquid waste means any waste that: has an angle of repose of less than 5° above horizontal becomes free-flowing at or below 60° Celsius or when it is transported is generally not capable of being picked up by a spade or shovel.

Liquid wastes are sub-classified into:

- sewer and stormwater effluent
- trackable liquid waste according to the POEO Waste Regulation Schedule 1 Waste to which waste tracking requirements apply
- non-trackable liquid waste.

Step 3: If not liquid, has the waste already been pre-classified by the NSW EPA?

The EPA has pre-classified several commonly generated wastes in the categories of hazardous, general solid waste (putrescibles) and general solid waste (non-putrescibles). If a waste is listed as 'pre-classified', no further assessment is required.

Step 4: If not pre-classified, is the waste hazardous?

If the waste is not special waste (other than asbestos waste), liquid waste or pre-classified, establish if it has certain hazardous characteristics and can therefore be classified as hazardous waste.

Hazardous waste includes items such as explosives, flammable solids, substances liable to spontaneous combustion, oxidizing agents, toxic substances and corrosive substances.

Step 5: If the waste does not have hazardous characteristics, undertake chemical assessment to determine classification

If the waste does not possess hazardous characteristics, it needs to be chemically assessed to determine whether it is hazardous, restricted solid or general solid waste (putrescible and non-putrescible). If the waste is not chemically assessed, it must be treated as hazardous.

Waste is assessed by comparing Specific Contaminant Concentrations (SCC) of each chemical contaminant, and where required the leachable concentration using the Toxicity Characteristics Leaching Procedure (TCLP), against Contaminant Thresholds (CT).

Step 6: Is the general solid waste putrescible or non-putrescible?

If the waste is chemically assessed as general solid waste, a further assessment is available to determine whether the waste is putrescible or non-putrescible. The assessment determines whether the waste is capable of significant biological transformation. If this assessment is not undertaken, the waste must be managed as general solid waste (putrescible).

5.4 Waste exemptions

The POEO (Waste) Regulation 2014 enables the EPA to issue resource recovery exemptions if it can be shown that a specific type of waste can safely be used for another purpose, rather than being disposed of in line with the waste regulations. The EPA has issued a number of general resource recovery exemptions for a range of commonly recovered, high volume and well characterised waste materials that waste generated by the Project may comply with, including:

- The excavated natural material (ENM) order and exemption 2014
- The excavated public road material order and exemption 2014
- The reclaimed asphalt pavement order and exemption 2014
- The recovered aggregate order and exemption 2014
- The stormwater order and exemption 2014

The list is not exhaustive. All general resource recovery exemptions gazetted by the EPA.

Resource recovery exemptions are subject to conditions, including material characterisation testing and record keeping.

5.5 Virgin excavated natural material (VENM)

In addition to the material types above, Virgin Excavated Natural Material (VENM) may be generated or imported for construction. VENM is a waste that has been pre-classified as general solid waste (non-putrescible). The POEO Act defines VENM as:

'natural material (such as clay, gravel, sand, soil or rock fines):

- *that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities and*
- *that does not contain any sulfidic ores or soils or any other waste and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice.'*

Classification of excavated material as VENM requires certainty that all aspects of the definition are met. Chemical testing may be required to ascertain whether an excavated material is contaminated with manufactured chemicals or process residues, or whether it contains sulfidic ores or soils.

Any movement of VENM must be accompanied by a VENM Certificate (provided in [Appendix A](#)). The certificate is intended to assist waste generators, contractors and/or receivers of VENM to have confidence that a range of relevant factors have been considered in the classification of a waste material as VENM. It is the responsibility of the waste generator to prepare the VENM Certificate and provide it to the Waste Receiver. The VENM Certificate must be prepared by an appropriately qualified contaminated land consultant.

5.6 Waste disposal

Waste must only be exported to:

- a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste
- in compliance with the conditions and record keeping requirements of a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or
- to any other place that can lawfully accept such waste in accordance with the POEO Act and POEO Regulation (refer to POEO Act, Schedule 1, Scheduled activities 34 Resource recovery and 39 Waste disposal (application to land) for guidance).

A POEO Act Section 143 notice must be prepared and exchanged between the waste generator and the waste receiver for any waste disposal to non-licensed facility including VENM. The Section 143 notice must be provided with relevant evidence of the classification of the waste. A copy of the Section 143 notice is provided in [Appendix B](#).

A list of indicative waste facilities that may be used during the Project are listed within [Appendix C](#).

Asbestos waste over 10m³ must be tracked through the EPA's WasteLocate Service.

Note, an asbestos clearance certificate must be obtained from a licensed asbestos assessor on completion of asbestos removal.

5.7 Spoil handling and reuse

The primary waste stream from the Project will be spoil (surplus excavated materials) from the excavation of the new power supply trench. This spoil will consist of a combination of road pavement material (concrete and asphalt), DGB road base and natural soils or other imported fill.

Where reuse of native backfill (i.e. spoil) is allowed under the relevant design and/or road authority specifications, material that is suitable for direct backfilling, will be temporarily stockpiled onsite nearby in a suitable location, then used to directly backfill the trenches.

Material that is excavated from the trench (i.e. spoil, road surface material, or other materials), will be loaded into rigid trucks. This material will be temporarily stockpiled onsite or at the nominated ancillary facility for the Project (refer to additional detail in the CEMP on ancillary facilities). The ancillary facility will allow waste segregation and temporary stockpiling, should further material classification testing be required.

Any material that is not suitable for backfilling will be loaded from the Project ancillary facility into rigid trucks which would transport this material to the trenching location. The suitable native backfill will then be placed, layered, compacted, and tested as part of the trench backfilling process. Material that is not suitable in its site won form, will be loaded into truck and dogs and transported to a crushing and/or treatment/recycling facility (where appropriate under waste classifications, and relevant exemptions or facility licenses, or Section 143 Certificate) or to a licensed waste facility.

Where the reuse of native backfill (i.e. spoil) is not allowed under the relevant design and/or road authority specifications, material will be imported from quarry via truck and dogs to temporary stockpiles at ancillary facilities for the Project. This imported material will be loaded from site compound stockpiles into bogie trucks to transport to the trench, place, layer, compact and test as part of the trench backfilling process.

All of the excavated material will be temporarily stockpiled in the ancillary facilities before being removed to the appropriate waste facility.

5.8 Mitigation measures

A range of environmental requirements and control measures are identified in the Approval documents as well as Sydney Metro documents.

Specific measures and requirements to address impacts on waste and spoil are outlined in [Table 6](#).

Table 6 Waste and Spoil Management and Mitigation measures relevant to the project

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	WR1	Construction waste will be minimised by accurately calculating materials brought to the site and limiting materials packaging	REMM WR1	Planning documentation	Construction	Site Supervisor(s) Engineers
All	WR2	Waste streams will be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities	REMM WR2	Site inspections	Construction	Site Supervisor(s)
All	WR3	A materials tracking system will be implemented for material transferred between construction sites	REMM WR3	Waste register	Construction	Engineer Environmental Manager
All	WR4	Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	MCoA E122	Waste Register Site Inspections	Construction	Engineer Environmental Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	WR5	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or must be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	MCoA E123	S143 Notices	Construction	Engineer (s) Environmental Manager
All	WR6	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	MCoA E124	Waste register	Construction	Environment Manager
All	WR7	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	MCoA E125	Waste register Waste Classification Reports	Construction	Environment Manager

Applicable site	ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
All	WR8	The following waste monitoring will be undertaken as a minimum: i. Weekly inspections will include checking on the waste storage facilities on site; and ii. All waste removed from the site will be appropriately tracked from 'cradle to grave' using waste tracking dockets.	CEMF 14.2 (b)	Inspection Reports	Construction	Environmental Manager
All	WR9	The following additional waste management mitigation measures will be implemented: i. A central waste area (or areas) will be established, at which waste (including recyclables) would be stored or stockpiled. Stockpiles and bins will be appropriately labelled, managed and monitored till being removed from site; ii. All waste materials removed from the sites will be directed to an appropriately licensed waste management facility; iii. The use of raw materials (noise hoarding, site fencing, etc...) will be reused or shared, between sites and between construction contractors where feasible and reasonable; and iv. Recyclable wastes, including paper at site offices, will be stored separately from other wastes.	CEMF 14.3 (c)	Inspection Reports CEMP Section 4.2	Construction	Environmental Manager

6. Compliance Management

6.1 Roles and Responsibility

The organisational structure and overall roles and responsibilities for the Project team are outlined in Section 6.3 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Table 6 of this Plan.

6.2 Training

All employees, contractors and utility staff working on-site will undergo site induction training relating to waste and spoil management issues. The induction training will address elements related to waste and spoil management including:

- Existence and requirements of this sub-plan
- Relevant legislation
- Roles and responsibilities for waste and spoil management
- Waste reporting requirements
- Requirements of the waste hierarchy
- Waste/ recycle storage requirements
- Other specific responsibilities for waste and reuse management.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in waste and spoil management. Further details regarding staff induction and training are outlined in Section 6.5 of the CEMP.

6.3 Monitoring and Inspection

Regular monitoring and inspections will be undertaken in the lead up to, during and following construction. Monitoring and inspections will include, but not be limited to:

- Weekly inspections of the waste storage facilities on site and control measures in Section 5 of this Plan
- Quantity, classification and disposal of waste generated on site
- Quantities of classification and disposal of spoil generated by the works
- Waste and purchasing information to Sydney Metro as required for Sydney Metro to fulfil their WRAPP reporting requirements

Additional requirements and responsibilities in relation to inspections are documented in Section 6.9 of the CEMP.

6.4 Reporting and Records

Reporting requirements and responsibilities are documented in Section 6.10 of the CEMP.

A Waste Management Register will be maintained by the Environment Manager which identifies all waste produced on site and subsequent management. The Register shall document the following:

- Type and quantity of waste
- Whether the waste is to be recovered (either for use on-site or off-site) or sent for disposal
- Tracking information of waste streams

- Upon removal of waste from site- date of removal, transport contractor information and final destination
- Details of each waste disposal facility where waste is sent including business name, address, ABN, contact details and EPL number if relevant.

A Spoil Register will be maintained by the Construction Manager which identifies all spoil produced on site and subsequent management. The Register shall document the following:

- material characterisation testing
- Whether the spoil is to be recovered (either for use on-site or off-site) or sent for disposal
- Tracking information of waste streams
- Upon removal of waste from site- date of removal, transport contractor information and final destination.
- A schedule of all sites used for the disposal of spoil

Compliance records will be retained in relation to waste management including:

- waste dockets for all waste removed from the site
- material characterisation testing
- resource recovery order and exemption records
- evidence of correspondence to waste receivers (including licensed facilities) of the material characterisation testing
- VENM Certificated exchanged for the disposal or importation of VENM
- POEO Act Section 143 Notices and associated correspondence.

7. Review and Improvement

The process of update and continuous improvement of this Sub-plan is described in Section 6.10 and 6.11 of the CEMP.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to Section 6.12 of the CEMP.

Appendix A VENM Certificate

Certification: Virgin excavated natural material



1. I [full name]

of [organisation
and address]

certify that the waste as set out in section 2 of this notice is Virgin Excavated Natural Material (VENM) as defined in Schedule 1 of the *Protection of the Environment Operations Act 1997*.

This certification is made on behalf of the waste generator [fill out if applicable]

being [full name]

of [organisation
and address]

2. The waste was generated at:

Street address:

Title reference (Lot/DP, etc.):

The amount of waste
(by volume or weight) is:

3. I have made the determination that the waste is VENM because:

- ☐ I have assessed the historical and current land use of the site at which the waste was generated.
- ☐ The waste is not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities.
- ☐ The waste does not contain any sulfidic ores or soils.
- ☐ The waste does not contain any other waste.
- ☐ The waste does not contain asbestos in any form.

Note: that all sections of this form must be completed including all boxes checked in Section 3 above and signed below for any material to be certified as VENM.

Signature(s)

.....

Name(s) (printed)

Date

Warning: There are significant penalties under s.144AA of the *Protection of the Environment Operations Act 1997* for a person who supplies (whether knowingly or not) information that is false or misleading in a material respect about waste.

This certificate is intended to assist waste generators, contractors and/or receivers of VENM to have confidence that a range of relevant factors have been considered in the classification of a waste material as VENM.

Published by:

Environment Protection Authority, 59–61 Goulburn Street, Sydney South 1232

Ph: 131 555. TTY users: phone 133 677, then ask for 131 555

Speak and listen users: phone 1300 555 727, then ask for 131 555

Email: info@environment.nsw.gov.au; Web: www.epa.nsw.gov.au

Report pollution and environmental incidents: Environment Line: 131 555 (NSW only)

EPA 2013/0693; September 2013

Appendix B S143 Notice Form

**ORIGINAL: TO BE COMPLETED BY LANDOWNER AND GIVEN TO WASTE
TRANSPORTER OR DISPLAYED AT WASTE FACILITY**

APPROVED NOTICE UNDER SECTION 143

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

WARNING: If you sign this notice it could be used as a defence by a transporter if they deposit waste on your land. It does not give you a defence. It is an offence to provide false or misleading information about waste (section 144AA)

I (full name)

am the owner and/or occupier (delete if not applicable) of (insert street address and/or folio identification number of place):

.....

.....

certify that this place can lawfully be used as a waste facility for the **waste(s) specified** in the following table.

(Note: you must clearly state the exact type. Do not use terms like 'fill' or 'clean fill'.)

Table of specified wastes

Type of waste e.g. virgin excavated natural material	Classification of waste e.g. general solid waste	Amount of waste e.g. 50 tonnes
.....
.....
.....
.....

Before signing this notice you should read the back of this form for important information about offences.

Signature

Signature

Name

Name

Position title (e.g. director, owner, occupier)

Position title (e.g. director, owner, occupier)

ACN

ACN

Date

Date

Note that only one signature is required if the person signing this notice is **not** signing on behalf of a company.

Lawful authority to use place as waste facility for the specified waste

The place can lawfully be used for the types of waste described in the notice **because** (Delete whichever is not applicable):

A. This use is permitted by EPA licence number:.....

Or

An EPA licence is not required (for example, a resource recovery exemption may apply)

And because (Delete whichever is not applicable):

B. The place has consent or approval under the *Environmental Planning and Assessment Act 1979* for the uses described in the table above.

Or

The place can be used as a waste facility without consent or approval under the *Environmental Planning and Assessment Act 1979*.

The use(s) for the waste at the place are:

Land owners and occupiers should note that it is an offence to use land as a waste facility without lawful authority, see section 144 of the *Protection of the Environment Operations Act 1997* (POEO Act). It is also an offence to carry out an activity listed in Schedule 1 to the POEO Act without an Environment Protection Licence when one is required (see section 48). Offences carry a maximum penalty of \$250,000 for an individual and \$1,000,000 for a corporation. In the case of a continuing offence, a further penalty applies for each day the offence continues, being \$60,000 for an individual and \$120,000 for a corporation.

Regardless of this notice, any person who carries out any development or activity on land involving waste must ensure they comply with any planning requirements including obtaining any planning consent or approval and complying with any conditions attached to that consent or approval

Information about this notice

Waste is a very broad concept under the law and covers many types of materials you may not think of as waste; for example, it covers waste tyres, building and demolition materials and virgin excavated natural material.

Under the POEO Act, a waste facility includes any premises used for storage, treatment, processing, sorting or disposal of waste. For example, if you are planning to build a road or dam, or fill a gully, this could involve using your place as a waste facility.

Section 143 of the POEO Act makes it an offence to transport waste to a place that cannot lawfully be used as a waste facility for that waste. The notice above is the approved notice under section 143 (3A) of the POEO Act. If you sign this notice it may be used as a defence by a transporter if they are charged with unlawfully transporting or depositing waste on your land. It does not give you a defence to using your land as a waste facility without lawful authority.

If you sign this notice, you should give it to the transporter or display it at the waste facility. The transporter should keep the original and you should keep a copy.

If the landowner or occupier signing this notice is a company, the full name of the company and ACN should be used and the notice must be executed in accordance with the Corporations Law.

If you operate an unlicensed landfill site for business or commercial purposes you should contact the EPA to discuss reporting and operating requirements.

If you are not sure if you require an EPA licence you can ring the Environment Line on 131 555.

You are likely to need development consent to use your land as a waste facility. If you are not sure if you require development consent you should contact your local council.

COPY: TO BE KEPT BY LANDOWNER AND KEPT FOR RECORDS

APPROVED NOTICE UNDER SECTION 143

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

WARNING: If you sign this notice it could be used as a defence by a transporter if they deposit waste on your land. It does not give you a defence. It is an offence to provide false or misleading information about waste (section 144AA)

I (full name)

am the owner and/or occupier (delete if not applicable) of (insert street address and/or folio identification number of place):

.....

certify that this place can lawfully be used as a waste facility for the **waste(s) specified** in the following table.

(Note: you must clearly state the exact type. Do not use terms like 'fill' or 'clean fill'.)

Table of specified wastes

Type of waste e.g. virgin excavated natural material	Classification of waste e.g. general solid waste	Amount of waste e.g. 50 tonnes
.....
.....
.....
.....

Before signing this notice you should read the back of this form for important information about offences.

Signature

Signature

Name

Name

Position title (e.g. director, owner, occupier)

Position title (e.g. director, owner, occupier)

ACN

ACN

Date

Date

Note that only one signature is required if the person signing this notice is **not** signing on behalf of a company.

Appendix C Potential waste facilities

Table 7 Potential Waste Transport and Management Facilities

Type	Name	Contact Details	Waste Accepted
Waste Transporter	Bingo Bins Pty Ltd	305 Parramatta Rd, Auburn NSW 2144 Ph: 1300 424 646	Transport of category 2 trackable waste Transport of category 1 trackable waste
	Remondis Australia Pty Ltd	Level 4, 163 O'Riordan Street, Mascot Ph: 9032 7100	Transport of category 2 trackable waste Transport of category 1 trackable waste
	JJ Richards & Sons Pty Ltd	16 Childs Road, Chipping Norton Ph: 9832 4022	Transport of category 2 trackable waste Transport of category 1 trackable waste
	Solveco Pty Ltd	38 Links Road, St Marys Ph: 9833 7035	Transport of category 2 trackable waste Transport of category 1 trackable waste
	Transpacific Cleanaway Pty Ltd	Level 4/441 St Kilda Rd, Melbourne Ph: 13 13 39	Transport of category 2 trackable waste Transport of category 1 trackable waste
Recycler / Recovery / Waste Management Facility	Camellia Resource Recovery & Treatment Facility	Grand Avenue, Camellia Ph: 1300 651 116	Liquid waste Recycling - mixed plastics, cardboard and paper, aluminium cans, organics and metals.
	Chullora Resource Recovery Facility	15 Muir Road, Chullora Ph: 1300 651 116	Waste storage - other types of waste Composting Waste storage - waste tyres Non-thermal treatment of general waste Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste Recovery of general waste
	Concrete Recyclers	14 Thackeray Street, Camellia Ph: 8832 7400	Concrete, Bricks, Tiles and Asphalt
	Metropolitan Demolitions & Recycling Pty Ltd	396 Princes Highway, St Peters Ph: 9519 3099	Demolition Rubble (Brick & Concrete)
	REMONDIS Australia Pty Ltd - Transfer Station	2 Bay Road, Taren Point 2229 Ph: 9526 2642	Recycling - gas bottles, batteries - car, oil - used motor

Type	Name	Contact Details	Waste Accepted
	Sims Metal Management - Alexandria	72 Burrows Road, Alexandria Ph: 9509 7002	Metal recyclers
	Solveco St Marys Sydney waste treatment facility	38 Links Road, St Marys Ph: 9833 7035	Liquid waste
	Bingo St Peters Recycling Facility	6-10 Burrows Road South, St Peters Ph: 1300 424 646	Building & Demolition Waste Rubble, Sand, Soil, Asphalt, Brick, Concrete, Tiles Timber & Green Waste Metals, Plasterboard, Paper & Cardboard Plastics
	TransPacific	12 Stuart St, Padstow NSW 2211 Ph: 02 8748 0900	Liquid or hazardous waste
	Visy Taren Point Material Recovery Facility	43 Bay Road, Taren Point, Ph: 02 9524 8533	Newspapers Magazines Office Paper, Envelopes Without a Window Envelopes with a Window Phone Books, Pizza Boxes (clean) Egg Cartons Cardboard
Waste Management Facility and Landfill	Elizabeth Drive (Kemps Creek) Landfill	Elizabeth Drive, Kemps Creek NSW 2178 Ph: 1300 651 116	General solid classified contaminated soils. General solid classified asbestos contaminated soils. Restricted classified contaminated wastes. VENM/ENM.
	Genesis Xero Waste Facility	Honeycomb Drive, Eastern Creek NSW 2766 Ph: 9832 3333	All wastes (including asbestos waste). Exclusions – hazardous, restricted, food, liquid, medical and chemical wastes
	Horsley Park Waste Management Facility	Wallgrove Road, Horsley Park Ph: 9620 1944	General Solid Waste (Non-putrescibles) includes VENM Asbestos Waste Waste Tyres
	Lucas Heights Landfill and Resource Recovery Park	New Illawarra Road, Lucas Heights Ph: 1300 651 116	General Solid Waste (Putrescible) General Solid Waste (Non-putrescibles) includes VENM Asbestos Waste Waste Tyres

Type	Name	Contact Details	Waste Accepted
	Wallgrove Road (Eastern Creek) Landfill	Wallgrove Road, Eastern Creek Ph: 1300 651 116	General Solid Waste (Putrescible) General Solid Waste (Non-putrescibles) includes VENM Asbestos Waste Waste Tyres
Preliminary spoil disposal and reuse receival locations	Horsley Park (manufacturing facility)	Wallgrove Road at Horsley Park	Spoil (uncontaminated)
	Blacktown Waste Services (landfill)	920 Richmond Road at Marsden Park	Spoil (uncontaminated)
	Sakkara Development (industrial estate)	Riverstone Parade at Riverstone	Spoil (uncontaminated)
	Kurnell Landfill	330 Captain Cook Drive at Kurnell	Spoil (uncontaminated)
	Moorebank Intermodal Terminal Precinct –	Moorebank Avenue, Moorebank	Spoil (uncontaminated)
	Western Sydney Airport	Lot 1 DP 838361, Badgerys Creek	Spoil (uncontaminated)

Appendix D Waste Register Template

Quickway
Sydney Metro Western Sydney Airport

[illegible]

[illegible]

Waste Reciever Register

All waste receivers identified in the waste register must be included in this schedule

[illegible]

Appendix G Unexpected Heritage Finds and Humans Remains and Exhumation Management Procedures



Exhumation Management Procedure

SM ES-PW-315/5.0

Metro Body of Knowledge (MBoK)

Applicable to:	Sydney Metro
Document Owner:	Senior Heritage Advisor
System Owner:	Environment, Sustainability & Planning
Status:	Final
Version:	5.1
Date of issue:	May 2021
Review date:	May 2022
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Table of contents

1.	Introduction	3
1.1.	Purpose and scope	4
2.	Overview of legislative requirements for dealing with human remains	5
2.1.	Discovery of human remains and forensic cases: <i>NSW Coroners Act 2009</i>	5
2.2.	Historic human remains: <i>Heritage Act 1977</i> and <i>Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977</i>	6
2.3.	Aboriginal human remains: <i>National Parks and Wildlife Act 1974</i>	6
2.4.	Exhumation of human remains: <i>Public Health Regulation 2012 (NSW)</i>	7
2.5.	NSW Ministry of Health Policy Statement – Exhumation of human remains (2013)	7
2.6.	<i>Work Health and Safety Act 2011</i>	7
3.	Sydney Metro procedure for the discovery and management of human remains	8
3.1.	Initial discovery of bones: What do we do?	8
3.2.	Archaeological exhumation methodology	10
3.3.	Resume work	12
3.4.	Reporting	12
4.	Excavation and post-excavation tasks	14
4.1.	Research questions	14
4.2.	Process for DNA testing, isotope analysis and environmental sampling ..	15
4.3.	Reporting	16
4.4.	Public involvement	16
4.5.	Temporary storage and permanent repository or resting place for remains	16
5.	Definitions	17
6.	Accountabilities	17
7.	Related documents and references	18
8.	Superseded documents	18
9.	Document history	18
Appendix 1	19	
	NSW Health Policy Directive for Exhumation of Human Remains	19
Appendix 2	21	
	NSW Health Permit Application	21

Figures

Figure 1 Sydney Metro project overview and station locations	4
Figure 2 Exhumation procedure flow chart	13

1. Introduction

Sydney Metro has developed this Exhumation Management Procedure (ExMP) to provide guidance for managing the discovery of human skeletal remains during the course of works. The procedure is applicable to both unexpected skeletal finds and controlled archaeological investigations where human remains are anticipated to be uncovered. The procedure is applicable to any and all stages of any Sydney Metro project and to all staff and contractors.

Sydney Metro is Australia's biggest public transport project. In 2024, Sydney will have 31 metro stations and more than 66 km of new metro rail, revolutionising the way Australia's biggest city travels. When Sydney Metro is extended into the central business district (CBD) and beyond in 2024, metro will run from Sydney's booming North West region under Sydney Harbour, through new underground stations in the CBD and beyond to the south west (refer to Figure 1).

The purpose of this ExMP is to provide a clear and concise process to follow in the event of the discovery of potential human remains during Sydney Metro activities.

This ExMP will be reviewed as required and prior to any future Sydney Metro project that has potential to impact on known burials, graves, cemeteries or burial grounds. A review may require amending the ExMP to tailor additional controls or management procedures that are specific to the impacted cemetery or burial ground. In addition, the requirements of the relevant Planning Approval will be assessed during the review of this ExMP prior to its implementation.

This ExMP should be read in conjunction with the Sydney Metro Unexpected Finds Procedure.

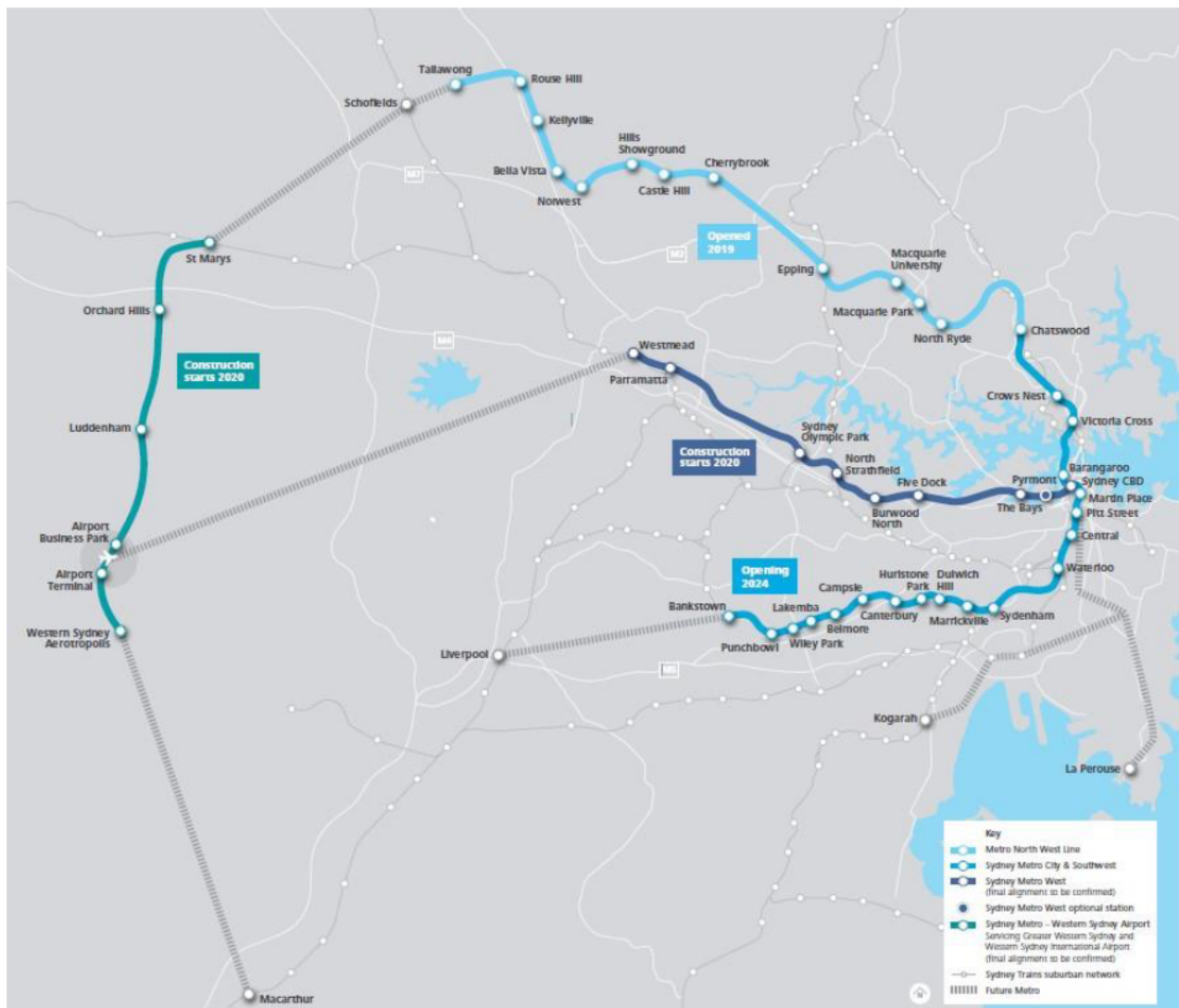


Figure 1 Sydney Metro project overview and station locations

1.1. Purpose and scope

This ExMP outlines the procedure for the management of the discovery of human remains within the Sydney Metro program. It includes:

- Overview of legislative requirements for dealing with human remains (e.g. *Coroners Act 2009*, *Heritage Act 1977*, *Guidelines for the Management of Human Skeletal Remains 1988*, and the *Public Health Regulations 2012*).
- A flow chart process to be followed when human remains are uncovered
- An archaeological methodology for the excavation of remains including processes for appropriately handling remains in accordance with the relevant guidelines (see section 2.3 and 2.4 below).
- Post-exhumation management processes including relocation, processing and long-term arrangements.

- Process for nomination of a physical anthropologist and temporary storage location.
- Process for additional analysis including DNA testing, isotope analysis and environmental sampling, and discussion on requirements for public involvement.

2. Overview of legislative requirements for dealing with human remains

The following section provides an overview of the legislation that would apply to the discovery, management and relocation of human remains. A discovery of suspected human remains may be subject to different Acts and requirements, thereby triggering different notification pathways based on the specific circumstances involved.

The first step will always be to notify the NSW Police. Confirmation of the age (antiquity) and nature of the skeletal remains as well as the reasons for the disturbance will dictate which Act and provisions will be applicable.

2.1. Discovery of human remains and forensic cases: NSW Coroners Act 2009

For a discovery of suspected human remains less than 100 years old, the remains would come under the jurisdiction of the State Coroner and the NSW *Coroners Act 2009*. Such a case would be considered a 'reportable death' and, under legal notification obligations set out in s35 (2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old, regardless of ancestry (i.e. both Aboriginal and non-Aboriginal remains).

35 Obligation to report death or suspected death

- (1) *This section applies to any person who has reasonable grounds to believe that a death or suspected death of another person:*
 - (a) *is a reportable death or occurred in circumstances that would be examinable under Division 2 of Part 3.2, and*
 - (b) *has not been reported in accordance with subsection (2).*
- (2) *A person to whom this section applies must report the death or suspected death concerned to a police officer, a coroner or an assistant coroner as soon as possible after becoming aware of the grounds referred to in subsection (1).*

Maximum penalty (subsection (2)): 10 penalty units.

- (3) *A police officer to whom a death or suspected death is reported under this section is required to report the death or suspected death to a coroner or assistant coroner as soon as possible after the report is made.*
- (4) *An assistant coroner to whom a death or suspected death is reported under this section is required to report the death or suspected death to a coroner as soon as possible after the report is made.*
- (5) *A coroner to whom a death or suspected death is reported under this section is required to inform the State Coroner of the report as soon as practicable after the report is made.*

2.2. Historic human remains: *Heritage Act 1977 and Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977*

The *Heritage Act 1977* (Heritage Act) and *Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977*¹ (the Guidelines) apply to historic burials in New South Wales. It should be noted that the Guidelines are outdated in terms of the current statutory framework.

A relic is defined as an archaeological deposit or artefact that has heritage significance at a local or State level. The guidelines, *Assessing Significance for Historical Archaeological Sites and 'Relics'*², have been endorsed by the Heritage Council of NSW and should be used to assess the level of heritage or archaeological significance of the remains. With reference to burial grounds, objects such as headstones, grave enclosures and grave goods, as well as buried human remains, may be 'relics' under the Heritage Act.

Approval under the Heritage Act and the *National Parks and Wildlife Act 1974* (NPW Act), is not required if human remains are uncovered during a Critical State Significant Infrastructure (CSSI) project. However, notification to the Heritage Council under s146 of the Heritage Act, and notification of an Aboriginal object under the NPW Act is required if human remains are uncovered during archaeological or other project related investigations.

2.3. Aboriginal human remains: *National Parks and Wildlife Act 1974*

The NPW Act, administered by Heritage NSW, provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Aboriginal occupation of NSW) under Section 90 of the Act, and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 84.

Discovery of Aboriginal burials and/or human remains would be addressed in the projects Aboriginal Cultural Heritage Assessment Report (ACHAR). ACHARs would be prepared in accordance with the following Heritage NSW guidelines:

- *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*³,
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*⁴,
- *Aboriginal cultural heritage consultation requirements for proponents 2010*⁵,
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*⁶.

¹ NSW Heritage Office, 1998

² Heritage Branch of the Department of Planning, 2009

³ NSW Department of Environment and Conservation, 2005

⁴ Office of Environment and Heritage, 2011

⁵ Department of Environment, Climate Change and Water, 2010

⁶ Office of Environment and Heritage, 2010

If suspected human skeletal remains are uncovered at any time during the archaeological management program, the process outlined in this ExMP and detailed in the flow chart is to be followed. Management of the remains would be guided by consultation with the nominated Registered Aboriginal Parties (RAPs) for the project, in adherence to the ACHAR.

2.4. Exhumation of human remains: *Public Health Regulation 2012 (NSW)*

Public Health Regulation 2012 and the *NSW Health Policy Statement – Exhumation of human remains of the Public Health Regulation 2012* provides specific regulation for the exhumation of human remains in NSW.

Under Clause 70 of the Regulation, an application for approval to exhume the remains of a dead person may be made to the Director-General via an approved form to the Director of the Local Public Health Unit that acts on behalf of the Director-General of NSW Health. Exhumation is not to take place unless an authorised officer or a NSW Health member of staff is present at the exhumation (the grave may be excavated to the lid of the coffin but nothing must be disturbed until the arrival of the authorised officer) (Clause 72). An authorised officer must be present at the exhumation to ensure the correct interment procedure is followed and that all of the remains are exhumed, and to enforce the protection of public health should this be necessary.

2.5. NSW Ministry of Health Policy Statement – Exhumation of human remains (2013)

The NSW Ministry of Health *Policy Statement on the exhumation of human remains* provides the policy to be observed by Public Health Units located in Local Health Districts on receipt of an application to seek permission for approval of the exhumation of human remains under the *Public Health Regulation 2012*. Public Health Units (PHUs) of Local Health Districts (LHDs) in NSW facilitate the approval for an exhumation.

Under Clause 69 a person must not exhume a body unless the exhumation of the remains has been approved by the Director-General. An application for permission to exhume the remains of a deceased person is to be made to the Public Health Unit on the approved form which is available at the [NSW Health website](#) and included in Appendix 2.

Note that the title of Director General of Health was replaced with the Secretary of Health when the Public Health Act and Public Health Regulation were amended. However, the Policy Directive PD2013-046 has not been amended to reflect this change.

2.6. *Work Health and Safety Act 2011*

The *Work Health and Safety Act 2011* provisions apply to protect personnel involved in the exhumation procedure by creating and maintaining safe and healthy work practices and are enforced by WorkCover NSW. Graves, crypts and vaults could be considered to be confined spaces in some circumstances under health and safety legislation. More information on safe work practices is available at or by contacting SafeWork NSW via their website or directly.

Health and safety aspects of working with human remains should be considered. Generally, working with archaeological human skeletal remains requires no extra precautions to be taken beyond normal health and safety regulations. Once any necessary site health and safety precautions have been taken, the exhumation of human remains can proceed.

3. Sydney Metro procedure for the discovery and management of human remains

This procedure provides project managers, principal contractors and the Project Excavation Director with advice on the steps to follow when suspected human remains are uncovered. Information on the potential for burials and human remains where known would be included in the general project induction for all personnel. The general project induction would also include the procedure to manage human remains set out in this ExMP.

3.1. Initial discovery of bones: What do we do?

To avoid doubt, all suspected bone items must be treated as potential human skeletal remains, and work in the immediate vicinity must stop while they are protected and investigated as a matter of urgency.

Stop Work and preliminary notification

If bone is uncovered, all work in the vicinity of the find must stop to allow for a positive identification as either human or non-human bone.

The Project Excavation Director must be notified.

Preliminary notification must be made to the NSW Police in compliance with Section 35 of the *Coroners Act 2009* (also refer to special conditions for Central Station noted in section 4).

What?	When bones are uncovered at a site, all work in the area of the find must stop immediately and the site must be secured.
Who?	The discoverer will immediately notify machinery operators so that no further disturbance of the remains will occur, as well as notifying the foreman/site supervisor, principal contractor, project archaeologist/Excavation Director and Sydney Metro Environmental Manager. Preliminary notification to the NSW Police will be undertaken by the Excavation Director. Notification should provide verbal description of the remains and inform the police that consultation with technical specialists is being undertaken to confirm that the remains are human, as well as the burial context (archaeological or less than 100 years old, refer Step 2).
How?	Inform all site personnel of restricted access to the area of the discovery until further notice. Area must be fenced off (flagging or temporary exclusion fencing).
Actions	Notify site supervisor, principal contractor, Project Archaeologist / Excavation Director and Sydney Metro Environmental Manager of the find and protect the suspected remains until an initial assessment can be undertaken by a technical specialist. Preliminary notification to NSW Police by Sydney Metro Environmental Manager.

Confirm the remains are human

Skeletal remains could either be articulated and in a recognisable form of burial such as a coffin or common burial position of the body (e.g. supine, prone or flexed), or they could be disarticulated or fragmented remains. Within the boundaries of a known historic burial ground, there is a high probability of the remains being human. In a suspected forensic case (less than 100 years old), the remains may have clothing and/or human tissue. Disarticulated or fragmented bones are often uncovered and these may require specialist assessment to determine legal jurisdiction.

If suspected human remains are identified during the course of project works, preliminary notification must be made to the NSW Police in compliance with Section 35 of the *Coroners Act 1999* (refer Step 1). NSW Police would be contacted immediately upon receipt of confirmation of human provenance.

What?	Confirmation that the remains are human, their burial context - whether they are forensic (less than 100 years) or archaeological (older than 100 years) and suspected ancestry (Aboriginal or non-Aboriginal).
Who?	Excavation Director and or Forensic or physical anthropologist, or archaeologist with specialist skills such as an osteoarchaeologist. Notification to the NSW Police will be undertaken by the Sydney Metro Environmental Manager.
How?	Consultation could be undertaken as either an on-site inspection or via good quality photos sent to the nominated technical specialist of 1) the remains; and 2) the site general site location of the discovery.
Actions	Contact nominated technical specialists to confirm that the remains are: a) human, b) burial context (archaeological or forensic), and c) suspected ancestry (Aboriginal or non-Aboriginal). For the duration of the Sydney Metro project, the nominated technical specialists are: <ul style="list-style-type: none"> • Forensic Anthropologist – TBC by contractor for project area. • Nominated Excavation Director – TBC by contractor for project area. • Sydney Metro Environmental Manager to conduct and or oversee liaison with NSW Police. The archaeologist may be able to identify the nature of remains without input from the Forensic Anthropologist. The Forensic Anthropologist should be contacted as required.

Notification based on jurisdiction (forensic or archaeological)

Once confirmation is received from the technical specialist that the remains are of human origin, there are three possible statutory pathways to follow based on the assessment.

What?	<i>Forensic case:</i> remains are less than 100 years old
Who?	If it is determined by specialist assessment (Step 2) that the remains are forensic, the remains come under the jurisdiction of the State Coroner and the Coroners Act 2009.
How?	The NSW Police would likely secure the site and will advise on the procedure to be followed.
Actions	Environmental Manager to liaise with NSW Police

What?	<i>Archaeological – non-Aboriginal human remains</i> – more than 100 years old.
Who?	Follow the Archaeology Exhumation Methodology as set out in Step 4 below

How?	Follow the Archaeology Exhumation Methodology as set out in Step 4 below
Actions	Follow the Archaeology Exhumation Methodology as set out in Step 4 below

What?	<i>Archaeological – suspected Aboriginal human remains – more than 100 years old.</i>
Who?	Recording of Aboriginal ancestral remains must be undertaken by, or conducted under the direct supervision of a specialist with registered Aboriginal parties (RAPs) present.
How?	The RAPs must be present where it is reasonably suspected that Aboriginal burials or human remains have been encountered.
Actions	Notify RAPs and Heritage NSW and follow the Aboriginal cultural heritage assessment report (ACHAR). Follow the Archaeology Exhumation Methodology as set out in Step 4.

3.2. Archaeological exhumation methodology

The following section provides a broadly accepted archaeological methodology for exhumation and the appropriate handling of human remains.

Securing the site

The strategy for the excavation and removal of human remains must be sensitive to public opinion and ethics and exhumation activities should not be visible to the general public. The site may need to be screened off from public areas, not only with hoarding but also in some cases with a roof to screen the site off from overlooking buildings. At all times, human remains should be treated respectfully. The perimeter of the excavation site should be demarcated by plastic tape or flagging, with only technical staff allowed within this area for the duration of exhumation activities.

The site should be protected from the elements including flooding, contamination with dust or debris, and other disturbance. These measures would be formulated by the Excavation Director in consultation with the contractor and Sydney Metro where required and may differ from site to site.

Excavation Director

Archaeological investigations are to be managed by a suitably qualified Excavation Director with experience in the excavation and management of human remains. For sites with potential for locally significant remains, the Excavation Director should meet the NSW Heritage Council criteria for experience with locally significant archaeological sites. For sites with potential for State significant archaeology the Excavation Director should meet the Heritage Council of NSW criteria for experience with State significant archaeological sites.

Excavation and recording

Exhumation and recording is to be undertaken in accordance with best practice forensic and Heritage Council of NSW guidelines. Prior to removal, the remains should be fully recorded in situ to understand their surrounding archaeological context. This will include recording any disturbances to the burial and the identification of bones present. In some cases, the deposit

of bones may be a mixture of articulated and disarticulated remains. Care should be taken to distinguish articulated remains and to assess if they represent commingled individuals or disturbed remains belonging to one individual, and to record them accordingly.

Recording

- A standard context recording system is to be employed.
- Detailed survey and/or measured drawings are to be prepared and include location of remains within the overall site (position of the body, the direction of the burial, noting any stratigraphic relationships with other archaeological features).
- Any associated artefacts (potential grave goods, burial furniture) are to be recorded and collected by context for later analysis.
- Photographic record of all phases of work in accordance with 'Photographic Recording of Heritage Items Using Film and Digital Capture'. Photographs are to be in RAW format, using photographic scales and photo boards where appropriate.
- Registers of contexts, photos, samples and drawings are to be kept.

Excavation

- Detection of the extent of the grave/remains (if disarticulated).
- Surface soils removed in excavation units of 100mm (site dependent) using small hand tools.
- Expose remains with soft paint brushes and pedestal the remains.
- Record position and depth of remains.
- Soil removed is to be sieved through 3mm mesh to examine for teeth and bone fragments.
- Soil samples may be taken from the abdominal and/or chest areas of the body (articulated remains) to retrieve further evidence.
- Exhumation must be under the control of the Excavation Director, with the assistance of a Forensic Anthropologist if required. Exhumation permit/s, provided by NSW Ministry of Health may also require the presence of an authorised officer or a member of staff of the Ministry of Health.
- Further excavation of the bottom of the pit (grave) following removal to confirm the absence of further remains.

Relocation of bones

- Removal and collection of skeletal remains is to follow the standard forensic practice of labelling as follows:
 - Remove remains from the ground systematically and place in plastic bags according to anatomical areas of the body.
 - Bags should not be air-tight and should have ventilation holes to prevent deterioration of fragile skeletal material. Each bag should contain labels and the separate bags should then be placed in a large plastic bag, crate or box, labelled with the context information.
 - The remains should be placed in a sturdy, large cardboard box (approximately 600 x 300 x 200 mm) for relocation to off-site processing location.

3.3. Resume work

Construction work may only recommence upon receipt of clearance certificate from the Excavation Director and may require additional NSW Ministry of Health approval. If a forensic case, written authorisation from the NSW Police is required.

3.4. Reporting

A report would be prepared following the completion of the program of exhumation works, separate to the archaeological excavation report for the project. This report would include skeletal analysis catalogue, comprehensively describe the process of exhumation, detail the recording of the remains and synthesise the results of any further laboratory testing. An assessment of significance for the remains would be provided and interpreted within the context of the archaeological research design (response to research questions).

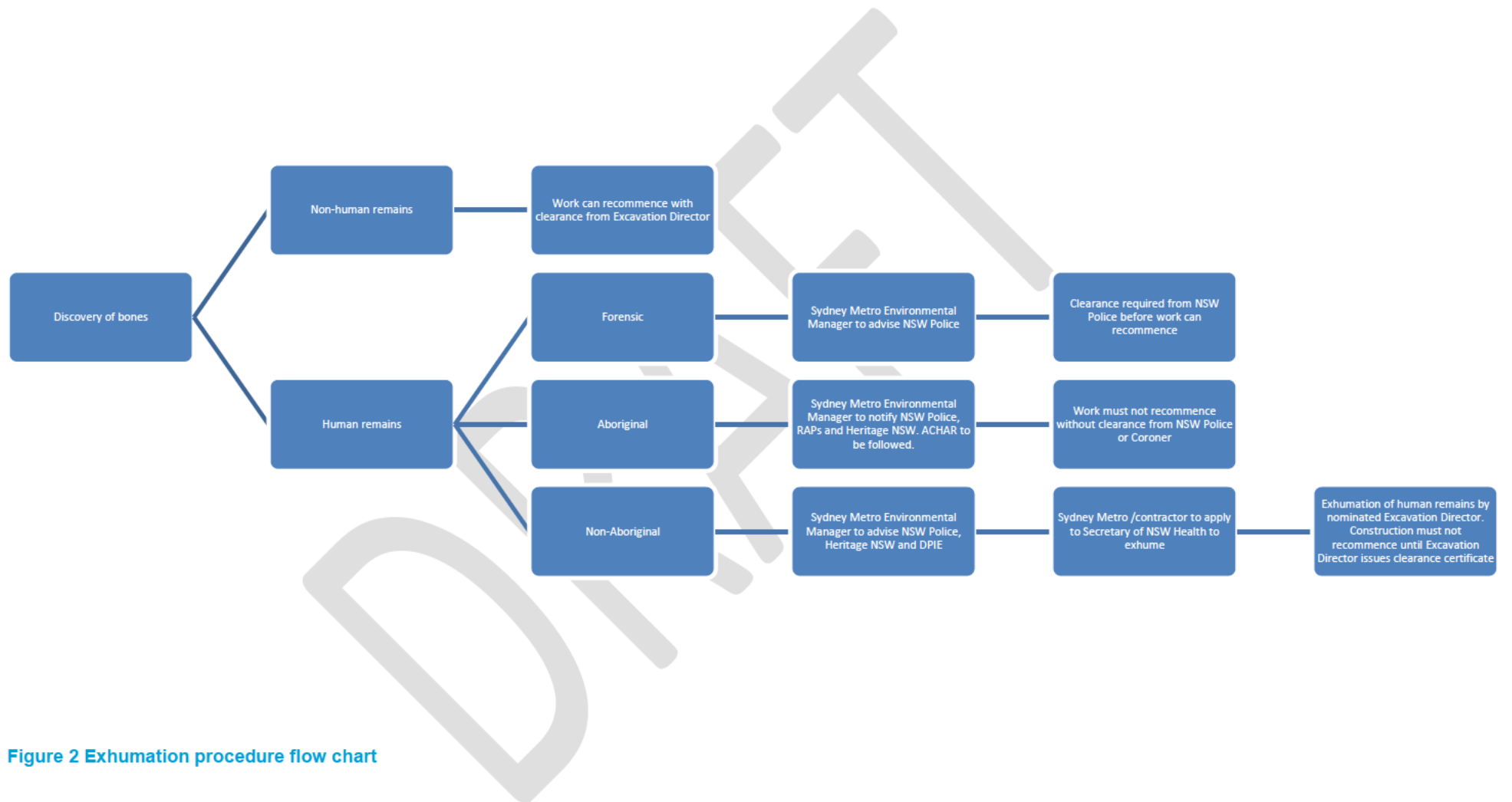


Figure 2 Exhumation procedure flow chart

4. Excavation and post-excavation tasks

All on-site management should be in accordance with the archaeological research design (ARD) and relevant archaeological method statement (AMS), and be overseen by the Excavation Director. The Excavation Director would nominate a Forensic Anthropologist where required.

4.1. Research questions

Research questions should be specific to the site and the site history. The research questions in the archaeological research design can be revised as new information emerges and new research questions can be investigated.

The following general research questions can be used to guide exhumations, should intact burials, disarticulated remain, burial cuttings or associated material culture be uncovered during work.

Social history and burial practices

- Does the location of the burial/burial cutting correspond with historic plans/descriptions?
- Is there evidence of exhumation?
- Do graves cut into older ones? What can this tell us about nineteenth century burial practices, and how does this compare to other excavated cemetery sites in the region?
- What is the distance between burials (if multiple burials uncovered)? Does this conform to known nineteenth century burial practices?
- What type of fill was used within grave cuttings? What can this tell us about the surrounding environment and burial practices at the time?
- What materials/tree species were used in the coffin manufacture? Can coffin manufacturing techniques or fastening methods (use of mortar, screws, nails, tacks) be identified? Does this match known burial practices of the time? If alternative methods are identified, what can this tell us about the manufacturer or economic/social landscape?
- Can the class or rank of the individual be identified via coffin materials, grave goods or clothing/shrouds?
- Which direction is the burial orientated? How does this correspond with the known/hypothesised location of denomination areas?
- If the burial is associated with more than one individual, can a familial relationship be assessed through DNA or other genetic markers identifiable within the skeletal remains?

Environmental factors and scientific analysis

- What is the condition of the bones? How does their condition compare to known or nearby burials of the same age? What environmental or human factors may have influenced the decomposition process?
- Can the health, nutrition, sex, race, stature or age be identified through the skeletal remains? Is there evidence of trauma on the bones? Is there evidence of pathology on the bones (e.g. syphilis, tuberculosis, tumours)?
- Can stable isotope analysis address any questions regarding diet, country of origin and nutrition?
- Can DNA testing address any questions not answerable by the skeletal remains themselves, such as sex, familial relationships (if buried with another individual/s) or

race?

- Is there potential for DNA to be tested against any individuals who may come forward as a descendant of the deceased?

4.2. Process for DNA testing, isotope analysis and environmental sampling

Pre-excavation

The Excavation Director, in consultation with the Forensic Anthropologist, will nominate a suitable laboratory prior to works commencing. Requirements for DNA testing, isotope analysis and environmental sampling will be identified in the archaeological research design and archaeological method statement.

Excavation

In order to prevent cross-contamination, the following sample collection and excavation process should be followed:

- The location, quantity and material (bone, teeth, hair, soil, wood) of samples will be determined by the Excavation Director or Forensic Anthropologist prior to its collection.
- Samples would be stored in a safe, secure and climate controlled location while excavations are in progress. This would be chosen by the Excavation Director or Forensic Anthropologist on site.
- Each collected sample would be given a unique catalogue number and a sample register would be recorded throughout the excavation;
- 'Clean excavation' procedures would be followed during the excavation of burials and during the sample collection process⁷. This would include:
 - Latex gloves would be worn by individuals excavating and/or handling bone or soil samples. Gloves would be changed for each bone and/or individual to prevent cross-contamination;
 - Excavation tools/brushes would be cleaned prior to and after the collection of each sample to prevent cross-contamination;
 - In some cases, a face mask would be worn when samples for DNA analysis are being collected;
 - Bone samples for DNA testing would be collected with surrounding in situ soil and should not be cleaned prior to bagging;
 - It may be necessary for individuals involved in sample collection to submit DNA for comparison in the event of cross-contamination; and
 - All bags containing samples for analysis would be bagged and labelled appropriately to prevent cross contamination and ensure they are handled and stored correctly.

Post-Excavation

⁷ Guidelines for 'clean excavation' are based on procedures outlined in: Yang, D. Y. & Watt, K. 2005. Contamination controls when preparing archaeological remains for ancient DNA analysis. *Journal of Archaeological Science*, vol. 32, pp. 331–336 and *Society for Historical Archaeology*, 2015-2017. Research and Analysis of Artefacts. Accessed online at: <https://sha.org/conservation-facts/faq/analysis/#C> on 25/5/2017.

On completion of excavations, samples will be transported to nominated laboratories for analysis. A record of their location will be kept.

4.3. Reporting

The results of the investigation of human remains and the exhumation will be included in the archaeological reporting for the project in accordance with the project ARD.

Once finalised, and where it is appropriate to do so as determined in consultation with RAPs and/or as may be required by the relevant Planning Approval obligations, archaeological and associated specialist reports should be submitted to:

- The relevant local Council and Library;
- Heritage NSW Library;
- The State Library of NSW; and
- Made available online for public access and educational purposes.

Further, if significant remains are identified during excavations, the results and findings would be published in academic journals and conference papers where feasible.

4.4. Public involvement

Archaeological excavations may uncover remains directly associated with early settlement and burial practices. Such remains are likely to generate public interest.

Public involvement may include:

- Media releases;
- Public Open Days;
- Preparation of brochures detailing the archaeological excavations;
- Interpretive signage and online blog posts or site diaries while excavations are taking place; and
- The preparation of a Heritage Interpretation Plan designed to provide interpretation of the site within the new development upon the completion of works.

Due to sensitive nature of human skeletal remains, these recommendations would be adapted and modified as appropriate under the direction of Sydney Metro and the Excavation Director.

Such recommendations would also be considered and require approval from relevant stakeholder groups such as known or potential descendants of the deceased, Heritage NSW/Heritage Council of NSW, local Council and interest groups.

4.5. Temporary storage and permanent repository or resting place for remains

Temporary storage

Upon the completion of archaeological excavations, skeletal remains should be boxed separately and temporarily stored within a safe, secure controlled environment to allow for further analysis of the remains. This location would be chosen by the Excavation Director and the Forensic Anthropologist and comply with NSW legislative requirements.

Permanent repository or resting place for remains

A permanent repository or resting place for remains is dependent on the nature and volume of skeletal remains. Final arrangements would be dictated by Sydney Metro, the Excavation Director, Forensic Anthropologist, identified descendants of the deceased, RAPs (if applicable) and/or other stakeholders upon the completion of excavations and subsequent analysis.

5. Definitions

All terminology in this document is taken to mean the generally accepted or dictionary definition. Other terms and jargon specific to this document are defined within the [SM-17-0000203 Sydney Metro glossary](#). Acronyms specific to this document are listed below.

	Definitions
IMS	Integrated Management System (IMS)
TfNSW	Transport for New South Wales
RAP	Registered Aboriginal party
ACHAR	Aboriginal cultural heritage assessment report
ARD	Archaeological research design
AMS	Archaeological method statement
OEH	Office of Environment and Heritage (now Heritage NSW)
PHU	Public Health Unit
ExMP	Exhumation Management Procedure (this Procedure)
ER	Environmental Representative (independent)

6. Accountabilities

The Director Environment, Sustainability and Planning is accountable for this document including approving the document, monitoring its effectiveness and performing a formal document review.

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

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

7. Related documents and references

Related documents and references

- SM-18-00105232 Sydney Metro Unexpected Heritage Finds Procedure
- Department of Environment, Climate Change and Water 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010
- Department of Environment, Climate Change and Water 2010, Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW

8. Superseded documents

Superseded documents

Exhumation Management Plan Version 1.1
 Exhumation Management Plan Version 2.0
 Exhumation Management Plan Version 2.1
 Exhumation Management Plan Version 2.2
 Exhumation Management Plan Version 3.0
 Exhumation Management Plan Version 4.0

9. Document history

Version	Date of approval	Notes
1.1	May 2017	New IMS document.
2.0	July 2017	Incorporates Stage 2 (section 3)
2.1	February 2019	Extended for Metro Program wide application, includes changes specific Central Station management, and incorporates comments received from the State Coroner's Office, NSW Police, NSW Health, and Sydney Metro Environmental, Environmental Representatives engaged on the Central site and the Office of Environment and Heritage (OEH).
2.2	February 2019	Incorporates comments received from Artefact Heritage and Dr Denise Donlon issued to Health and OEH Heritage Division for consultation.
3.0	May 2019	Incorporates Health, Coroner and OEH comments.
4.0	April 2020	Updates to remove specific references to City and South West and Central Station. Change of title to "Procedure". Update to references.
5.0	March 2021	Minor edits.
5.1	April 2021	Updates to related documents and references.

Appendix 1

NSW Health Policy Directive for Exhumation of Human Remains

CONDITIONS OF APPROVAL FOR EXHUMATION FROM GRAVE

1. The exhumation is to be carried out in the presence of a Public Health Unit's authorised officer or other authorised officer of the NSW Ministry of Health or Local Council authorised Officer and person appointed by Cemetery Authority.
2. At least 48 hours notice of the exhumation arrangements shall be given to the Public Health Unit.
3. Day and time of the exhumation shall be arranged by the participating parties and agreed to by the Public Health Unit.
4. The approval granted is valid for a period of three months and shall lapse on ____/____/____, unless a further approval is granted.
5. The presence of any relative of the deceased at the exhumation is strictly prohibited.
6. No animals are to be permitted within the exhumation site.
7. The cemetery authority and funeral director shall be responsible for the work health and safety of all persons involved in the exhumation and shall ensure that all NSW WorkCover requirements are complied with.
8. If, during the course of the exhumation, it is determined necessary to stop the exhumation by either the exhumation supervisor / cemetery manager or authorised Officer, for any valid reason e.g. work health and / or public health risk, then the exhumation must cease.
9. The remains of the deceased shall be enclosed in a body bag and placed into a new coffin with a name plate attached inscribed with the name of the deceased.
10. The remains of the original coffin are to be placed in the new coffin where possible. Where there is an excess of remains of the original coffin, these remains should be disposed in a sanitary and agreed manner.
11. Excavated soil should be back filled. The soil that was removed from immediately above and around the coffin should be replaced first.
12. If the exhumed remains are to be transferred to another cemetery, a funeral director shall be contracted to transfer the remains from the cemetery grounds or carry out preparatory work for the safe reinterment of the remains.
13. The exhumation will not proceed during or following a period of heavy rainfall within the preceding 24 hours of the appointed time of exhumation. The cemetery manager is to confirm that satisfactory conditions exist for the exhumation to proceed two hours prior to the commencement of the exhumation.
14. Used disposable protective equipment and materials are to be placed in a sealed plastic bag and disposed of in a sanitary manner.

CONDITIONS OF APPROVAL FOR EXHUMATION FROM ABOVE GROUND STRUCTURE

1. The exhumation is to be carried out in presence of a Public Health Unit authorised officer or other authorised officer of the NSW Ministry of Health or Local Council authorised Officer and person appointed by Cemetery Authority.
2. At least 48 hours notice of the exhumation arrangements shall be given to the Public Health Unit.
3. Date and time of the exhumation shall be arranged by the participating parties and agreed to by the Public Health Unit.
4. An approval granted is valid for a period of three months and shall lapse on ___/___/___, unless a further approval is granted.
5. The cemetery authority and funeral director shall be responsible for the work health and safety of all persons involved in the exhumation and shall ensure that all NSW WorkCover requirements are complied with.
6. If, during the course of the exhumation, it is determined necessary to stop the exhumation by either the exhumation supervisor / Cemetery Manager or authorised officer, if for any valid reason e.g. worker health and/or public health risks, then the exhumation must cease.
7. Used disposable protective equipment and materials are to be placed in a sealed plastic bag and disposed in a sanitary manner.



Health

APPLICATION TO EXHUME REMAINS

PUBLIC HEALTH REGULATION, 2012 Clause 70(2)

In accordance with the requirements of Clause 70 (2) of the Public Health Regulation 2012, I
 (Full name of applicant)

..... of hereby
 (Address)

apply for permission to exhume the remains of the late
 (Name of deceased)

from Grave No:, Section:, being a single

interment within the Cemetery, for the purpose of

I seek permission to exhume for the following reason/s:

The deceased: (cross out which is not applicable)

- was not known to be infected with a prescribed infectious disease as defined in clause 53 of the Public Health Regulation 2012; or
- was known to be infected with a prescribed infectious disease as defined in clause 53 of the Public Health Regulation 2012

I am entitled to make this application, because I am: (tick one)

1. ☐ The executor of the estate of the deceased; or
2. ☐ The nearest surviving relative of the deceased; or
3. ☐ If there is no such executor or relative available to make the application, another the proper person to make the application for the reasons set out below:

.....
 (Full reasons for proper person to make application)

Attached is:

1. A certified copy of the death certificate of the deceased.
2. A statutory declaration as to:
 - My relationship to the deceased; and
 - the wishes of the deceased regarding the disposal of the body (if known);
 - the reasons why the Director-General may consider me the proper person in all the circumstances to make the application (if applicable)
3. The application fee of \$.....

The exhumation is to be supervised in strict accordance with the attached Plan of Management

by
 employed with (Funeral Director/Cemetery)
 in the capacity of

Signature: Date:
 (Applicant)

Form C70



Appendix H Noise and Vibration Management Plan

Sydney Metro - Western Sydney Airport Power Enabling Works

Construction Noise and Vibration Management Plan (CNVMP)

4022-WSA-CNVMP-001

Revision 1.0

29 March 2022

CURRENT DOCUMENT REVISION			PROJECT NO. 4022		
ISSUE	DATE	ISSUE DETAILS / REMARKS	AUTHOR	CHECKED	APPROVED
1.0	29/03/2022	Updates to RBL & NML tables for NCOA6, Update to Table 7-3 AMMs			
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Document Revision History			PROJECT NO.		4022
ISSUE	DATE	ISSUE DETAILS / REMARKS	AUTHOR	CHECKED	APPROVED
A	10/11/2021	Issued to client			
B	30/11/2021	Response to SM Comments			
C	12/01/2022	Response to ER Comments			
D	25/01/2022	Response to SM and ER Comments			
E	31/01/2022	Response to SM and ER Comments			
0.0	31/01/2022	No changes to document. Endorsed document issued for use.			
1.0	29/03/2022	Updates to RBL & NML tables for NCOA6, Update to Table 7-3 AMMs			

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Document Approval / Endorsement

Contents

1. Introduction	8
1.1 Context.....	8
1.2 Project Background.....	8
1.3 Scope of the Sub-plan.....	11
1.4 Implementation of the Sub-plan	11
2. Purpose and Objectives	11
2.1 Purpose	11
2.2 Objectives and Targets	11
3. Environmental requirements.....	13
3.1 Relevant legislation and guidelines.....	13
3.2 CNVMP requirements	14
4. Existing Environment	22
4.1 Overview	22
4.2 Sensitive Receivers.....	22
4.3 Noise Catchment Areas	23
4.4 Ambient noise	26
5. Noise and vibration criteria	27
5.1 Construction noise and assessment objectives	27
5.2 Construction hours	27
5.3 Noise Management Levels.....	29
5.4 Project-specific Noise Management Levels	32
5.5 Vibration	34
6. Environmental aspects and impacts	40
6.1 Construction activities	40
6.2 Noise impacts.....	50
6.3 Vibration impacts.....	51
6.4 Ongoing noise and vibration risk assessment.....	51
7. Environmental Control Measures	52
7.1 Mitigation Measures	53
7.2 Additional noise and vibration mitigation measures	62
7.3 Scheduling and Respite	63
8. Compliance Management	63
8.1 Roles and Responsibilities	63
8.2 Training	63
8.3 Monitoring and Inspection	64
8.4 Complaints	66
8.5 Reporting and Records	66
8.6 Hold points	66
9. Review and Improvement.....	2
9.1 CNVMP update and amendment	2

Tables

Table 2-1 Relevant performance outcomes	12
Table 3-1 Non-statutory guidelines and standards.....	13
Table 3-2 Minister's Conditions of approval relevant to the CNVMP	14
Table 3-3 Relevant requirements of the CEMF	19
Table 4-1 Sensitive heritage structures.....	23
Table 4-2 NCAs relevant to the Project.....	24
Table 4-3 RBLs for NCAs	26
Table 5-1 Noise Management Levels at Residential Receivers	29
Table 5-2 Noise at sensitive land uses (non-residential) using quantitative assessment	31
Table 5-3 Project Noise Management Levels	33
Table 5-4 Types of vibration.....	35
Table 5-5 Preferred and maximum levels for human comfort (continuous and impulsive vibration)	35
Table 5-6 Vibration Dose Value Ranges above which various degrees of Adverse Comment may be expected in Residential Buildings.....	36
Table 5-7 BS 7385 cosmetic damage safe limits	37
Table 5-8 Acceptable vibration limits on building structure housing sensitive equipment	39
Table 5-9 Acceptable vibration limits for effects of short-term vibration on buried pipework	39
Table 6-1 Description of key potentially noise and vibration generating construction activities	40
Table 6-2 Indicative construction duration at each work portion	42
Table 7-1 Noise and Vibration mitigation measures.....	54
Table 7-2 Triggers for Additional Mitigation Measures- Airborne Noise (Table 16 CNVS)	62
Table 7-3 Additional Mitigation Measures – Ground Borne Construction Noise (Table 17 CNVS).....	62
Table 7-4: Additional Mitigation Measures – Ground Borne Vibration	63
Table 8-1. Noise and vibration hold points	1

Figures

Figure 1-1 Project overview.....	10
Figure 4-1 Noise catchment areas across the SM WSA Project.....	25
Figure 6-1 Overview of Portion 1 at Patons Ln	44
Figure 6-2 Overview of Portion 2 at Claremont Meadows.....	45
Figure 6-3 Overview of Portion 3 at Orchard Hills.....	46
Figure 6-4 Overview of Portion 4 at Airport Business Park	47
Figure 6-5 Overview of Portion 5 at the Pre-cast Yard.....	48
Figure 6-6 Overview of Portion 6 at the Aerotropolis	49

Appendices

Appendix A Land Use Survey.....	3
Appendix B Out of Hours Works Protocol	15

Glossary / Abbreviations

Term	Definition
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CNVS	Sydney Metros Construction Noise and Vibration Standard
Contractor	Quickway Constructions Pty Ltd
dB	Decibels - A measure of sound equivalent to 20 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure, and 10 times the logarithm (to base 10) of the ratio of a given sound power to a reference power. Typically uses the A-weighted scale (i.e. dBA) measured according to the frequency of the human ear.
DECC	Former Department of Environment and Climate Change (NSW) now NSW Department of Planning, Industry and Environment.
DPIE	NSW Department of Planning, Industry and Environment
EIS	SM WSA Project Environmental Impact Statement (Jacobs/Arcadis 2020)
EPA	NSW Environment Protection Authority
EP&A Act	<i>NSW Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act, 1999</i>
EPL	NSW Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> .
EWMS	Environmental Work Method Statements
Feasible and reasonable	Feasible relates to engineering considerations and what is practical to build. Reasonable considers mitigation benefits versus social, economic and environmental costs. Note, consideration of what is feasible and reasonable is not static or fixed, except at a particular point in time, and can be updated as additional details of the work or surrounding environment become apparent or confirmed.
Highly noise affected	As defined in the ICNG
Highly noise intensive works	Works which are defined as annoying under the ICNG, including: (a) use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work; (b) grinding metal, concrete or masonry; (c) rock drilling; (d) line drilling; (e) vibratory rolling; (f) bitumen milling or profiling; (g) jackhammering, rock hammering or rock breaking; (h) rail tamping and regulating; and (i) impact piling.
ICNG	Interim Construction Noise Guideline (DECC 2009)
MCoA	NSW Minister for Planning Indicative Condition of Approval
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause non-compliance with the conditions of this approval <i>Note: "material harm" is defined in the approval and in the POEO Act</i>
Minister, the	NSW Minister for Planning
L _{A90}	The noise level exceeded 90% of the measurement period, typically considered the average minimum noise level and used to establish background noise levels
L _{Aeq} (15min)	The A-weighted equivalent continuous (energy average) A-weighted sound pressure level over a 15-minute period.

Term	Definition
LA (max)	The A-weighted maximum noise level, measured using the fast time weighting on a sound level meter.
NCA	Noise Catchment Area
NML	The Noise Management Level ($L_{Aeq}(15min)$) providing a target noise level, where, if exceeded, all reasonable and feasible noise mitigation and management measures would be considered for implementation.
OOHW	Out of Hours Work
RBL	The Rating Background Level for each period is the median value of the LA90 values for the period over all of the days measured. There is an RBL value for each period (day, evening and night).
RNP	Road Noise Policy (EPA 2011)
RMS	NSW Roads and Maritime Services now TfNSW
Secretary	Secretary of the Department of Planning, Industry and Environment
SWL	Sound Power Level the acoustic power output of a source expressed in decibels. Sound power level is calculated from measured sound pressure levels.
SM WSA	Sydney Metro Western Sydney Airport
Sound Pressure Level	This is the level of noise, usually expressed in dB(A), as measured by a standard sound level meter with a pressure microphone.
the Project	Sydney Metro western Sydney Airport Temporary Construction Power
TfNSW	Transport for NSW
VDV	Vibration Dose Value

1. Introduction

1.1 Context

This Construction Noise and Vibration Management Plan (CNVMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Advanced Enabling Works - Power (the Project), which is part of the Sydney Metro Western Sydney Airport (SMWSA) Project.

This CNVMP has been prepared to outline how Quickway will comply with the applicable NSW Minister for Planning's Conditions of Approval (CoA) and the Sydney Metro (SM) Construction Environmental Management Framework (CEMF) during construction of the Project.

The CEMF incorporates requirements for environmental management for works on the Western Sydney International Airport (referred to as 'on-Airport') and works outside the Western Sydney International Airport, referred to as 'off-Airport'.

On-Airport Project works are managed under the Sydney Metro Western Sydney Airport Noise and Vibration CEMP. All off-Airport works are incorporated in this CNVMP. Only a small portion of the project is On-airport, as indicated in Figure 1-1; however, these areas have been included in this CNVMP to demonstrate how these works would be managed. Where there is a conflict between this CNVMP and the Airport Noise and Vibration CEMP, the Airport Noise and Vibration CEMP will take precedence for on-airport works.

This CNVMP outlines how Quickway will minimise environmental risks and achieve environmental outcomes on the project by creating a well-defined approach to the implementation of the Environmental Impact Statement (EIS) Revised Environmental Management Measures (REMM).

Table 4 of the Staging Report states that noise and vibration should be addressed in the main body of the CEMP, however, due to ease, this Noise and Vibration Management Sub-plan was prepared as an Appendix to the main CEMP.

In accordance with MCoA C1, Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Sydney Metro Construction Environmental Management Framework (CEMF). The CEMF requires issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage scale and nature of the Project Works, and includes plans for noise and vibration management. These requirements have been collectively addressed through the preparation and implementation of this document.

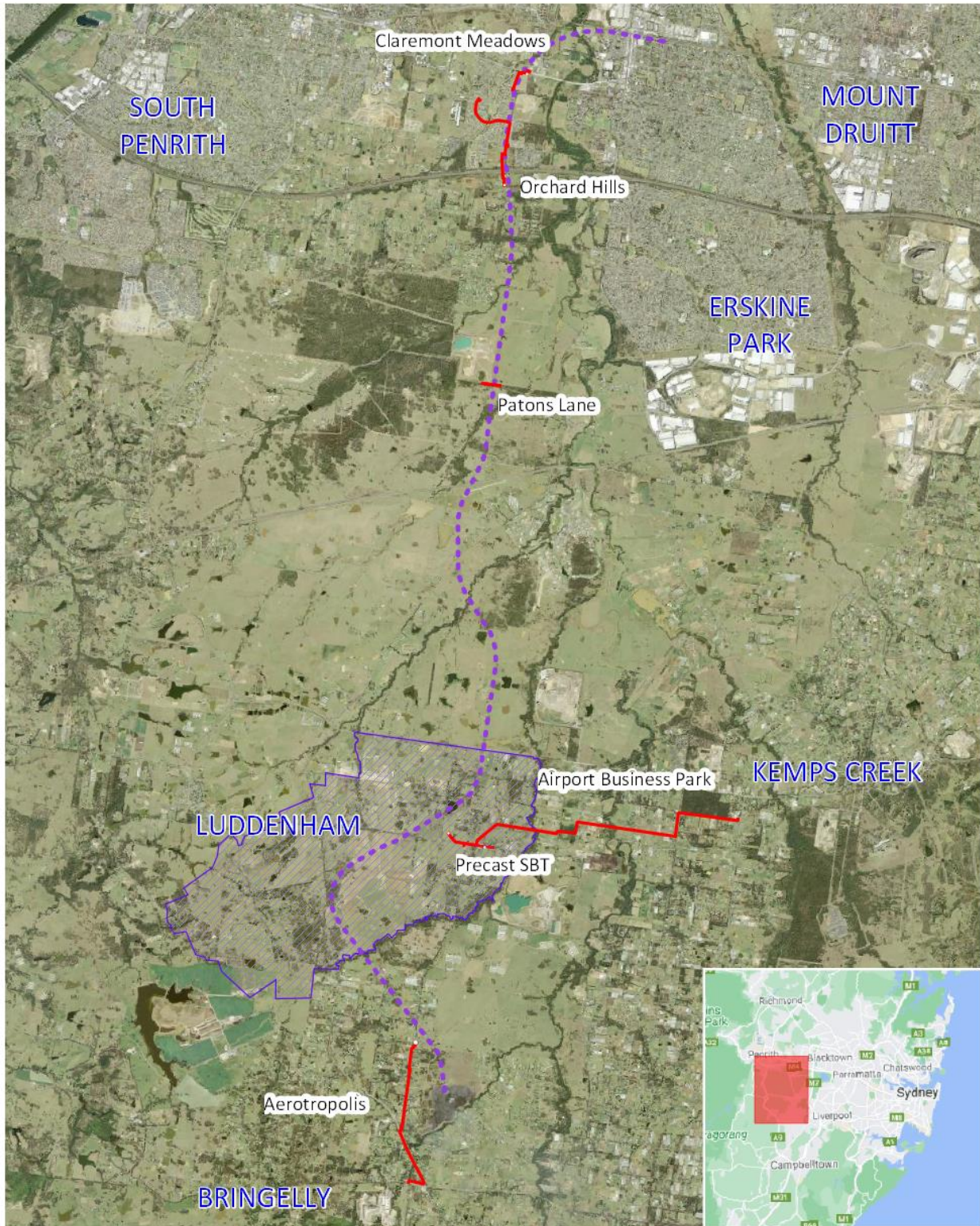
1.2 Project Background

The SM WSA Project EIS (Chapter 8) included a description of the temporary construction power works proposed as part of the SM WSA Project, identifying key noise generating activities including supplying power to construction compounds and other areas within the construction work area (whether temporary or permanent supplies).

The EIS concluded that, during construction activities, construction noise levels could, at some receivers, be greater than Noise Management Levels (NMLs), highly noise affected levels, and in some cases, sleep disturbance and awakening screening levels.

However, these impacts would be managed through the implementation of mitigation and management measures described in this CNVMP and in line with the Sydney Metro Construction Noise and Vibration Standard (CNVS) which provides standard mitigation measures and additional mitigation measures for certain noise and vibration impact levels.

An illustration of the Project locality and individual portions of the Project is provided in Figure 1-1. The potential impacts from noise and vibration during construction are discussed in Section 6. These management measures are described in this CNVMP in Section 7. Please refer to the CEMP for Project background and statutory context.



Legend

- Project Routes
- - - SMWSA
- Airport boundary (Approx)

**Sydney Metro Western Sydney Airport-
Power Enabling Works**

0 1,500 3,000 4,500 m



Figure 1-1 Project overview

1.3 Scope of the Sub-plan

The scope of this Plan is to describe how Quickway would manage noise and vibration impacts during construction of the Project.

This document provides a high-level assessment of potential noise and vibration outcomes for the Project and detailed assessment of site/activity specific noise and vibration mitigation will be provided within Construction Noise and Vibration Impact Statements (DNVIS).

As described in section 6.4, the DNVIS will identify impacts (based on noise and vibration modelling) at potentially affected receivers near each work site and include specific mitigation measures for the duration of those works. Works exceeding the noise management levels, vibration criteria and/or ground borne noise levels specified in the MCoA will not take place until a DNVIS is completed.

Operational management measures do not fall within the scope of this Plan and as such are not included in the management processes.

1.4 Implementation of the Sub-plan

In accordance with MCoA C1 – C3 and the Staging Report, this CEMP Sub-plan was submitted to the Environmental Representative (ER) no later than one month prior to the commencement of the construction activities to which they apply for endorsement. Construction cannot commence until the CEMP has been endorsed by the ER.

2. Purpose and Objectives

2.1 Purpose

The purpose of the Noise and Vibration Management Plan is to ensure all Project requirements relevant to noise and vibration are implemented as well as:

- Sydney Metro Construction Noise and Vibration Standard
- All relevant legislation and guidelines (identified in Section 3)

2.2 Objectives and Targets

The Project Performance outcomes relevant to Off-Airport works

from the CEMP relevant to Off-Airport works include the following.

- Minimise unreasonable noise and vibration impacts on residents and businesses; and
- Undertake active community consultation including maintenance of positive, cooperative relationships with schools, childcare centres, local residents and building owners.

The Submissions Report identified specific construction performance outcomes for the Project; those relevant to the management of Noise and Vibration for the Power Enabling Works are included in Table 2-1.

Table 2-1 Relevant performance outcomes

Performance Outcome Requirement	Construction Performance Outcomes	Key Performance Indicators (KPIs)
Construction noise and vibration (including airborne noise, ground-borne noise and blasting) is effectively managed to minimise adverse impacts on acoustic amenity.	Construction noise and vibration impacts on local communities (including airborne noise and ground-borne noise and vibration) are managed in accordance with the Sydney Metro Construction Noise and Vibration Standard, the Interim Construction Noise Guideline, and the Airports (Environment Protection) Regulations 1997.	<p>The Power Enabling Works would minimise construction noise impacts to the local community by:</p> <ul style="list-style-type: none"> Controlling noise and vibration at the source Controlling noise and vibration on the source to receiver transmission path Implementing practicable and reasonable measures to minimise the noise and vibration impacts of construction activities on local sensitive receivers. This includes provision of acoustic sheds (or other acoustic measures) where night works are proposed.
Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings and items including Aboriginal places and environmental heritage	Structural damage to buildings, heritage items and public utilities and infrastructure, including the Warragamba to Prospect Water Supply Pipelines, from construction vibration to be avoided	<p>The Project would minimise impacts to structures by:</p> <ul style="list-style-type: none"> Controlling vibration at the source Controlling vibration on the source to receiver transmission path Implementing practicable and reasonable measures to minimise vibration impacts of construction activities on structures.

3. Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation

Appendix A1 of the CEMP contains details of the legislation relevant to this management plan. In addition, On-Airport Project works are subject to approval under the *Airports Act 1996* and will be undertaken in accordance with the Airport Plan and *Airports (Environment Protection) Regulations 1997*.

3.1.2 Guidelines and standards

Non-statutory guidelines and standards that provide for noise and vibration management are listed in Table 3-1.

Table 3-1 Non-statutory guidelines and standards

Airborne Noise	
NSW Interim Construction Noise Guideline (ICNG)	
Sydney Metro Construction Noise and Vibration Standard (CNVS)	
Sleep disturbance	
Construction noise – NSW EPA Noise Policy for Industry	
Road traffic noise – RNP and the Roads and Maritime Environmental Noise Management Manual (ENMM) Practice Note 3	
Ground-borne noise	
NSW Interim Construction Noise Guideline (ICNG)	
Australian Standard AS/NZS 2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors	
Construction related road traffic noise	
No specific guidelines, but guidance taken from the NSW Interim Construction Noise Guideline (ICNG) and the NSW Road Noise Policy (RNP).	
Vibration (disturbance to building occupants)	
NSW DECC's Assessing vibration; a technical guideline, published in February 2006.	
British Standard BS 6472-2008, Evaluation of human exposure to vibration in buildings (1–80Hz).	
Vibration (damage to buildings)	
British Standard 7385:1993 Evaluation and measurement of vibration in buildings – Part 2 Guide to damage levels from ground-borne vibration.	
Vibration (structural damage to buried services, building structures and screening criteria for heritage structures)	
German Standard DIN 4150:2016 – Part 3 Structural vibration in buildings – Effects on structures	
Vibration (sensitive scientific and medical equipment) (guidance only)	
ASHRAE Applications Handbook (SI) 2003, Chapter 47 Sound and Vibration Control	
Gordon GC 28 September 1999 Generic Vibration Criteria for Vibration Sensitive Equipment	
Australian Standard 2834-1995 Computer Accommodation, Chapter 2.9 Vibration	

3.2 CNVMP requirements

The Indicative MCoAs relevant to this CNVMP are listed Table 3-2, and all CEMF requirements relevant to this CNVMP are listed in Table 3-3.

Refer to Section 7 for all REMMs relevant to the development of this Plan and management of noise and vibration impacts for the Project. A cross reference is also included in these tables to indicate where the condition is addressed in this CNVMP or other Project management documents.

Table 3-2 Minister's Conditions of approval relevant to the CNVMP

MCoA	Condition requirements	Document Reference
A1	The CSSI must be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the EIS, the Response to Submissions on the EIS, the PIR and Response to Submissions on the PIR.	For reference
A2	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance outcomes and mitigation measures set out in the documents identified in Condition A1 unless otherwise specified in, or required under, this approval.	For reference
C6	The CEMP Sub-plans must state how: (a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved; (b) the mitigation measures identified in the documents listed in Condition A1 will be implemented; (c) the relevant terms of this approval will be complied with; and (d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Table 2-1 Section 7 This table and Sub-plan Section 7
E37	A detailed land use survey must be undertaken to confirm sensitive land use(s) (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration and construction ground-borne noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Detailed Noise and Vibration Impact Statements required under Condition E47.	Appendix A
E38	Work must only be undertaken during the following hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays.	Section 5.2
E39	Except as permitted by an EPL or approved in accordance with the Out of Hours Works Protocol required by Condition E42, highly noise intensive work that result in an exceedance of the applicable NML at the same receiver must 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 (3) hours, with a minimum cessation of work of not less than one (1) hour. For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work.	Section 5.2
E40	This approval does not permit blasting.	No blasting proposed.

E41	<p>Notwithstanding Conditions E38 and E39 work may be undertaken outside the hours specified in the following circumstances:</p> <p>(a) Safety and Emergencies, including:</p> <ul style="list-style-type: none"> i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or ii) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or <p>(b) Low impact, including:</p> <ul style="list-style-type: none"> i) construction that causes LAeq(15 minute) noise levels: <ul style="list-style-type: none"> • no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s); and ii) construction that causes: <ul style="list-style-type: none"> • continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), or • intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or <p>(c) By Approval, including:</p> <ul style="list-style-type: none"> i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or ii) works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E42; or iii) negotiated agreements with directly affected residents and sensitive land user(s); or <p>(d) By Prescribed Activity, including:</p> <ul style="list-style-type: none"> i) tunnelling and ancillary support activities (excluding cut and cover tunnelling and surface works not directly supporting tunneling) are permitted 24 hours a day, seven days a week; or ii) grout batching at the Orchard Hills construction site is permitted 24 hours per day, seven days per week; or iii) delivery of material that is required to be delivered outside of standard construction hours in Condition E38 to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to / from the Orchard Hills ancillary facility; or iv) haulage of spoil generated through tunnelling is permitted 24 hours per day, seven days per week except between the hours of 10:00 pm and 7:00 am to / from the Orchard Hills construction site; or v) work within an acoustic enclosure are permitted 24 hours a day, seven days a week where there is no exceedance of noise levels or intermittent vibration levels under Low impact circumstances identified in Condition E41(b), unless otherwise agreed with the Planning Secretary; or vi) tunnel and underground station box fit out works are permitted 24 hours per day, seven days per week. vii) On becoming aware of the need for emergency work in accordance with (a)(ii) above, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. The Proponent must use best endeavours to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work. <p>Notes:</p> <ol style="list-style-type: none"> 1. Tunnelling does not include station box excavation. 2. Tunnelling ancillary support activities includes logistics support and material handling and delivery 	Section 5.2
E42	An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of work (not subject to an EPL) which are	Section 5.2

MCoA	Condition requirements	Document Reference
	<p>outside the hours defined in Conditions E38 and E39. The Protocol must be approved by the Planning Secretary before commencement of the out-of-hours work. The Protocol must be prepared in consultation with the ER. The Protocol must provide:</p> <ul style="list-style-type: none"> (a) justification for why out-of-hours work need to occur; (b) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: <ul style="list-style-type: none"> i) the ER review all proposed out-of-hours activities and confirm their risk levels; ii) low risk activities can be approved by the ER; and iii) high risk activities that are approved by the Planning Secretary; (c) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria; (d) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods consistent with the requirements of Condition E56. The measures must take into account the predicted noise levels and the likely frequency and duration of the out- of-hours works that sensitive land user(s) would be exposed to, including the number of noise awakening events; (e) procedures to facilitate the coordination of out-of-hours work including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided; and (f) notification arrangements for affected receivers for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works. <p>This condition does not apply if the requirements of Condition E41 are met.</p> <p>Note: Out-of-hours work is any work that occurs outside the construction hours identified in Condition E38 and E39.</p>	
E43	<p>Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria:</p> <ul style="list-style-type: none"> (a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009); (b) preferred vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure); (c) Australian Standard AS 2187.2 - 2006 "Explosives - Storage and Use - Use of Explosives" (for human exposure); (d) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and (e) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage). <p>Any work identified as exceeding the noise management levels and / or vibration criteria must be managed in accordance with the Noise and Vibration CEMP Sub-plan.</p> <p>Note: The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.</p>	<p>Section 5.3 Section 5.4 Section 5.5 Section 7</p>
E44	<p>All reasonable and feasible mitigation measures must be applied when the following residential ground-borne noise levels are exceeded:</p> <ul style="list-style-type: none"> (a) evening (6:00 pm to 10:00 pm) — internal LAeq(15 minute): 40 dB(A); and (b) night (10:00 pm to 7:00 am) — internal LAeq(15 minute): 35 dB(A). <p>The mitigation measures must be outlined in the Noise and Vibration CEMP Sub-plan, including in any Out-of-Hours Work Protocol, required by Condition E42.</p>	<p>Section 5.4.1 Appendix B</p>

MCoA	Condition requirements	Document Reference
E45	Noise generating work in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	Section 7.3 Appendix B
E46	Industry best practice construction methods must be implemented where reasonably practicable to ensure that noise and vibration levels are minimised around sensitive land use(s). Practices may include, but are not limited to: (a) use of regularly serviced low sound power equipment; (b) at source control, temporary noise barriers (including the arrangement of plant and equipment) around noisy equipment and activities such as rock hammering and concrete cutting; (c) use of acoustic sheds to minimise tunnelling and station box excavations noise impacts; (d) use of non-tonal reversing alarms; and (e) use of alternative construction and demolition techniques.	Section 7.1 Table 7-1 - NV6, NV7, NV8 NV9, NV14, NV15, NV20 Appendix B
E47	Detailed Noise and Vibration Impact Statements (DNVIS) must be prepared for any work that may exceed the NMLs, vibration criteria and / or ground-borne noise levels specified in Conditions E43 and E44 at any residence outside construction hours identified in Condition E38, or where receivers will be highly noise affected or subject to vibration levels as above those otherwise determined as appropriate by a suitably qualified structural engineer under Condition E87. The DNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the works. A copy of the DNVIS must be provided to the ER before the commencement of the associated works. The Planning Secretary and the EPA may request a copy (ies) of the DNVIS.	Section 6.4.1 Appendix B
E48	Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers must be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the Noise and Vibration CEMP Sub-plan.	Section 7 Table 7-1 – NV28
E49	Where sensitive land use(s) are identified in Appendix A the highly noise affected criteria during typical case construction, at-path barrier controls such as acoustic sheds and/or noise walls, or at-property treatment, or a combination of at-path and at-property treatment implemented must be implemented to reduce typical case construction noise below the highly noise affected criteria at each relevant sensitive landuse(s). Activities that would exceed highly noise affected criteria must not commence until the measures identified in this condition have been implemented, unless otherwise agreed with the Planning Secretary.	Section 7 Table 7-1 - NV14, NV15, NV20
E51	Where Condition E49 determines that at-property treatment (temporary or permanent) is the appropriate measure to reduce noise impacts, this at-property treatment must be offered to landowners of residential properties for habitable living spaces, unless other mitigation or management measures are agreed to by the landowner. Landowners must be advised of the range of options that can be installed at or in their property and given a choice as to which of these they agree to have installed. A copy of all guidelines and procedures that will be used to determine at-property treatment at their residence must be provided to the landowner.	N/A All work under this package is short term and can be managed by at-path barrier controls and other mitigation measures identified in Section 7.

MCoA	Condition requirements	Document Reference
E52	Any offer for at-property treatment or the application of other noise mitigation measures in accordance with Condition E51, does not expire until the noise impacts specified in Condition E49, affecting that property are completed, even if the landowner initially refuses the offer. <i>Note: If an offer has been made but is not accepted, this does not preclude the commencement of construction under Condition E49.</i>	N/A
E53	The implementation of at-property treatment does not preclude the application of other noise and vibration mitigation and management measures including temporary and long term accommodation.	N/A Section 7
E54	Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to verify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques.	Section 8.3.3
E55	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 8.3.3
E56	All work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must: (a) reschedule any work to provide respite to impacted noise sensitive land use(s) so that the respite is achieved in accordance with Condition E57; or (b) consider the provision of alternative respite or mitigation to impacted noise sensitive land use(s); and (c) provide documentary evidence to the ER in support of any decision made by the Proponent in relation to respite or mitigation. The consideration of respite must also include all other approved Critical SSI, SSI and SSD projects which may cause cumulative and / or consecutive impacts at receivers affected by the delivery of the CSSI.	Section 7 Table 7-1 – NV30, NV31
E57	In order to undertake out-of-hours work outside the work hours specified under Condition E38, appropriate respite periods for the out-of-hours work must be identified in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with: (a) a progressive schedule for periods no less than three (3) months, of likely out- of-hours work; (b) a description of the potential work, location and duration of the out-of-hours work; (c) the noise characteristics and likely noise levels of the work; and (d) likely mitigation and management measures which aim to achieve the relevant NMLs under Condition E43 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers). The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour work must be provided to the ER, EPA and the Planning Secretary prior to the out-of-hours work commencing. <i>Note: Respite periods can be any combination of days or hours where out-of-hours work would not be more than 5 dB(A) above the RBL at any residence.</i>	Section 6.4.2 Section 7 Table 7-1 – NV30, NV31

MCoA	Condition requirements	Document Reference
E84	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 and the further assessment carried out under mitigation measure GW1 of the Submissions Report as being at risk of damage before commencement of any work that could impact on the subject surface / subsurface structure. The results of the surveys must be documented in a Pre-construction Condition Survey Report for each item surveyed. Copies of Pre-construction Condition Survey Reports must be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, and no later than one (1) month before the commencement of the work that could impact on the subject surface / subsurface structure.	Not triggered by scope of work. DNVIS provides an assessment of vibration and potential impacts.

Table 3-3 Relevant requirements of the CEMP

CEMF Ref.	Requirement	Document Reference
Section 5.1	<p>Working hours</p> <ol style="list-style-type: none"> Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays. Works which can be undertaken outside of standard construction hours without any further approval include: <ol style="list-style-type: none"> Those which have been described and assessed in the environmental assessments. For example, tunnelling and underground excavations and supporting activities or works within Western Sydney International Works which are determined to comply with the relevant Noise Management Level at sensitive receivers; The delivery of materials outside of approved hours as required by the Police or other authorities (including Transport for NSW) for safety reasons; Where it is required to avoid the loss of lives, property and / or to prevent environmental harm in an emergency; and Where written agreement is reached with all affected receivers. Where off-airport works are being undertaken under an Environmental Protection Licence, Principal Contractors may apply for EPA approval to undertake works outside of normal working hours. 	Section 5.2
Section 8.1	<p>Construction Noise and Vibration Management Objectives</p> <ol style="list-style-type: none"> The following noise and vibration management objectives will apply to construction: <ol style="list-style-type: none"> Minimise unreasonable noise and vibration impacts on residents and businesses; Avoid structural damage to buildings or heritage items as a result of construction vibration; Undertake active community consultation; Maintain positive, cooperative relationships with schools, childcare centres, local residents and building owners; and For on-airport works, the Sydney Metro Western Sydney Airport Noise and Vibration CEMP will detail all the noise and vibration management objectives and will be consistent with the WSA Noise and Vibration CEMP, including all appendices to the CEMP. 	Section 2.2
Section 8.2	<p>Construction Noise and Vibration Management Implementation</p> <ol style="list-style-type: none"> On-airport management of noise and vibration will be achieved through the implementation of the SMWSA Noise and Vibration CEMP and Principal Contractors will develop and implement a Construction Noise and Vibration 	Section 6.1 Environmental Control Maps

CEMF Ref.	Requirement	Document Reference
	Management Plan for all off-airport works consistent with the Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009). Both plans will include as a minimum:	(CEMF Appendix C)
	i. Identification of work areas, site compounds and access points;	
	ii. Identification of sensitive receivers and relevant construction noise and vibration goals;	Section 4.2 Appendix A- Land Use Survey
	iii. Be consistent with, and include the requirements of the noise and vibration mitigation measures as detailed in the planning approval documentation and the Sydney Metro Construction Noise and Vibration Standard (CNVS), including the provision of respite;	Section 7.1 Section 7.2
	iv. Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities (based on representative construction scenarios) that have the potential to generate noise or vibration impacts on surrounding sensitive receivers, in particular residential areas;	Section 6
	v. Identification of feasible and reasonable procedures and mitigation measures to ensure relevant vibrations and blasting criteria are achieved, including a suitable blast program;	Section 7.1 Note: no blasting is proposed
	vi. The requirements of any applicable licence or approval (for example EPL);	Section 2 Section 3
	vii. Additional requirements in relation to activities undertaken 24 hours of the day, 7 days per week;	Section 5.2
	viii. Pre-construction compliance requirements and hold points;	Section 8.6
	ix. The responsibilities of key project personnel with respect to the implementation of the plan;	Section 8.1
	x. Noise monitoring requirements;	Section 8.3
	xi. Compliance record generation and management; and	Section 8.5
	xii. An Out of Hours Works Protocol applicable to all construction methods and sites.	Appendix B
	b. Detailed Construction Noise and Vibration Impact Statements will be prepared for noise-intensive construction sites and or activities to ensure the adequacy of the noise and vibration mitigation measures. Specifically, Construction Noise and Vibration Impact Statements will be prepared for works proposed to be undertaken outside of standard construction hours and to support applications to undertake out of hours works (this includes variations of EPLs and applications to relevant agencies).	Section 6.4
	c. Noise and vibration monitoring would be undertaken for construction as specified in the CNVS.	Section 8.3
	d. The following compliance records would be kept by Principal Contractors: i. Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria; and ii. Records of community enquiries and complaints, and the Contractor's response.	Section 8.5
Section 8.3	Construction Noise and Vibration Mitigation a. All feasible and reasonable mitigation measures would be implemented in accordance with the CNVS. The on-airport Noise and Vibration CEMP and the off-	Section 5.2 Section 7

CEMF Ref.	Requirement	Document Reference
	airport Noise and Vibration Management Plan will include the following noise and vibration mitigation measures as well as relevant Conditions:	Table 7-1 NV14, NV15, NV17, NV20, NV21,
	i. Construction hours will be in accordance with the working hours specified in Section 5.1;	
	ii. Hoarding and enclosures will be implemented where required to minimise airborne noise impacts;	
	iii. The layout of construction sites will aim to minimise airborne noise impacts to surrounding receivers	
	iv. Provision of respite periods.	

4. Existing Environment

4.1 Overview

The following sections summarise what is known about factors influencing Noise and Vibration impacts within and adjacent to the Project. This includes a preliminary detailed land use survey to confirm sensitive receivers potentially exposed to construction noise and vibration, as required under Condition E37. This land use survey would be progressively updated prior to any works which generate noise or vibration commencing in an area. The land use survey is provided in Appendix A.

A noise assessment was conducted as part of the development of the SMWSA EIS and forms EIS Technical Paper 2: Noise and Vibration. The EIS noted that the noise environment in the study area can be grouped into two separate noise environments –north and south of the M4 western Motorway.

As illustrated in Figure 1-1 and described in the EIS, north of the M4 Western Motorway is typically suburban, with noise levels characterised by road traffic as well as pockets of industry and commerce focussed on St Marys. In the evening, background noise levels are typically influenced by the natural environment and human activity.

South of the M4 Western Motorway, noise levels are characterised as semi-rural, with background noise most influenced by natural sounds and most of the area having little road traffic noise. Background noise levels are described in the EIS as moderately low. Traffic noise on the main arterial roads through this area, such as on Luddenham Road and Elizabeth Drive are the main sources of noise in the area.

4.2 Sensitive Receivers

4.2.1 Residential receivers

The greatest density of residential receivers is located in Claremont Meadows, in medium-density residential dwellings north of the M4 Western Motorway at the northern end of the project. Receivers located in the semi-rural areas of Orchard Hills, Luddenham, Badgerys Creek and Bringelly, south of the M4 Western Motorway may also be affected.

Receivers potentially sensitive to both noise and vibration have been categorised based on their use, as defined in the Noise Policy for Industry (i.e. residential, non-residential, commercial and industrial), and have been identified in the surrounding area.

4.2.2 Non-residential receivers

Non-residential noise sensitive receivers located within in the study area are primarily education, active recreation, and passive recreation receivers, with childcare centres and a few places of worship. Non-residential noise sensitive receivers are mostly located north of the M4 Western Motorway, with a few active and passive recreation receivers located to the south.

4.2.3 Heritage items

Vibration can affect sensitive structures, including heritage-listed buildings. Table 4-1 outlines sensitive heritage structures identified which may be potentially impacted by the project.

Table 4-1 Sensitive heritage structures

Heritage item	Register listings	Location description	Significance
Portion 2 - Claremont Meadows Services Facility Power [CMP]			
Great Western Highway milestone marker	Penrith LEP 2010 I859	Southern side of the Great Western Highway 20m from entry to Ancillary Facility / Overhead services works.	Local
Portion 6 - Aerotropolis Power [AEP]			
Two Water Tanks	Liverpool LEP 2008 I4	Approximately 60m NE of northern new switching station off Badgerys Ck Rd	Local

4.3 Noise Catchment Areas

Noise Catchment Areas (NCAs) are groups of sensitive receivers that are likely to experience similar impacts from the project. Predicted impacts for each NCA are considered to represent typical noise and vibration impacts at each individual receiver within that NCA. Table 4-2 describes the location of the NCAs adopted for the project which are also presented in Appendix A.

The NCAs are delineated by landmark features, such as roads, to encompass groupings of houses with similar background noise environments. These NCAs contain sensitive receivers approximately two kilometres around the project.

The Airport Business Park portion of the project extends east from the airport and has not been included in the EIS NCAs for the Project. This area has been included in the CNVMP as NCA 13. Background noise levels have nominally been applied from the nearby NCA 11.

Table 4-2 NCAs relevant to the Project

Reference	Description	Main sources of background noise
NCA01 (unlikely to be affected)	Medium density single and multi-storey residential dwellings north of the project at St Marys. Includes commercial and industrial receivers along Kurrajong Road and Glossop Street.	Ambient noise conditions are dominated by road and rail traffic noise from Glossop Street and Forrester Road, and the existing Sydney Trains suburban rail network.
NCA02 (unlikely to be affected)	Predominantly industrial and commercial receivers located to the northwest of St Marys Station and the project.	
NCA03 (unlikely to be affected)	Predominantly medium density single and multi-storey residential dwellings, with commercial receivers located along Queen Street.	Ambient noise conditions are dominated by traffic along the existing heavy rail line through St Marys Station, and traffic along Queen Street.
NCA04	Medium density residential dwellings are grouped around Werrington Station to the north of the project, with Wollemi College and Cobham Detention to the west.	Ambient noise conditions are dominated by traffic along the existing heavy rail line through Werrington Station.
NCA05	Predominantly medium density single and multi-storey residential dwellings.	Ambient noise conditions are dominated by traffic along Mamre Road.
NCA06	Predominantly medium density residential dwellings to the east of Gipps Street and south of Caddens Road.	Ambient noise conditions are dominated by traffic along M4 Western Motorway and Gipps Street.
NCA07	Predominantly medium density single-storey residential dwellings, located to the east of the project.	Ambient noise conditions are dominated by traffic along Mamre Road.
NCA08	Predominantly low density single storey residential dwellings. East of the project is mostly open land with scattered receivers along Samuel Marsden Road and Lansdowne Road.	Ambient noise conditions are dominated by traffic along the M4 Western Motorway.
NCA09	Open farmland and a grouping of low density single storey residential dwellings within 1200 metres east of the project along Luddenham Road.	Ambient noise conditions are dominated by traffic along Luddenham Road.
NCA10	Open farmland with low density single storey and multi-storey residential dwellings within the Twin Creeks area east of the project, and scattered residential dwellings along Luddenham Road.	Ambient noise conditions are dominated by traffic along Luddenham Road.
NCA11	Predominantly Western Sydney International (on-airport) land. Low density residential dwellings along Lawson Road and Martin Road to the east of the project. Medium density residential dwellings at Luddenham to the west of the project.	Ambient noise conditions are dominated by traffic along Elizabeth Drive and Luddenham Road.
NCA12	Predominantly scattered low density single-storey residential dwellings, located either side of the project.	Ambient noise conditions are dominated by traffic along The Northern Road.
NCA13	Predominantly scattered low density residential dwellings, located either side of the project.	Ambient noise is influenced by traffic along Elizabeth Drive.

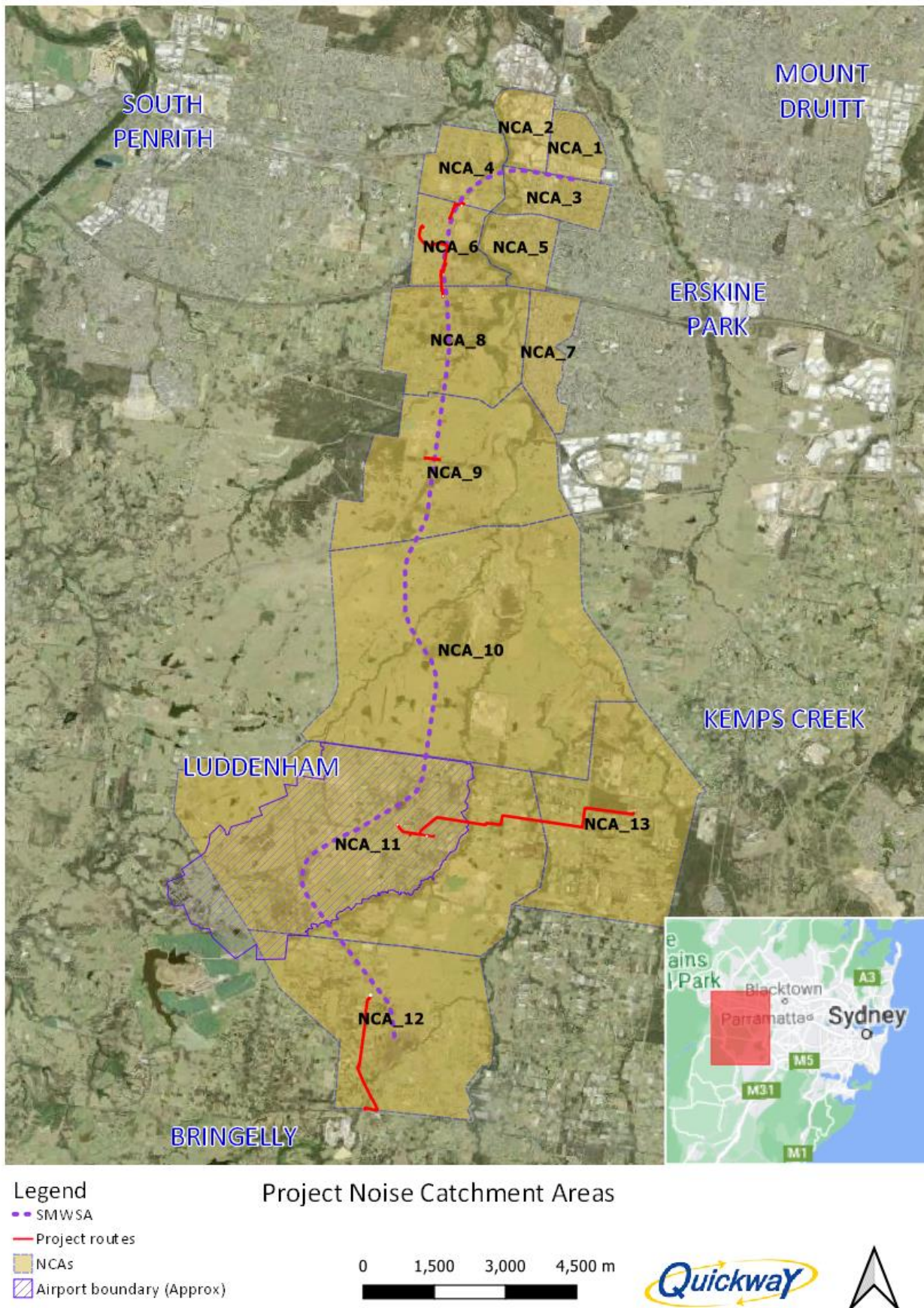


Figure 4-1 Noise catchment areas across the SM WSA Project

4.4 Ambient noise

Ambient noise levels were established in 2020 as part of the EIS through background noise monitoring at representative locations, with results summarised for each NCA.

The baseline information was used to establish the Rating Background Level (RBL), which represents the average minimum background sound level for each measurement period, averaged over the measurement days, this is provided in Table 4-3.

Table 4-3 RBLs for NCAs

Noise Catchment Area (NCA)	EIS Noise monitoring location	Noise level (dBA)		
		Day RBL	Evening RBL ¹	Night RBL ¹
NCA01	NM01	38	38	38
NCA02	NM02	37	37	36
NCA03	NM02	37	37	36
NCA04	NM14	35	32	31
NCA05	NM05	40	40	40
NCA06	NM14	37	37	36
NCA07	NM16	47	42	30
NCA08	NM15	44	44	40
NCA09	NM09	40	39	34
NCA10	NM10	35	30	30
NCA11	NM20	39	37	30
NCA12	NM13	38	35	34
NCA13	NM20	39	37	30

Note 1: RBL for evening set at no greater than the daytime, and RBL for night-time set no greater than the day or evening following conservative principles outlined in the NPfI.

5. Noise and vibration criteria

The EPA recommends management levels and goals when assessing construction noise and vibration. These are outlined in:

- ICNG
- Sydney Metro Construction Noise and Vibration Standard
- Assessing Vibration: a technical guideline (for human exposure)
- German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures (for structural damage).

Relevant elements of these documents are summaries and discussed in this Chapter.

5.1 Construction noise and assessment objectives

The ICNG provides guidelines for the assessment and management of construction noise. The ICNG focuses on applying a range of work practices to minimise construction noise impacts rather than focusing on achieving numeric noise levels.

The main objectives of the ICNG are to:

- Identify and minimise noise from construction works
- Focus on applying all 'feasible' and 'reasonable' work practices to minimise construction noise impacts
- Encourage construction during the recommended standard hours only, unless approval is given for works that cannot be carried out during these hours
- Reduce time spent dealing with complaints at the Project implementation stage
- Provide flexibility in selecting site-specific feasible and reasonable work practices to minimise noise impacts.

5.2 Construction hours

5.2.1 Approved hours

Working hours are set by MCoA E38 to E41. Construction hours as approved in MCoA D38 are as follows:

- Monday to Friday: 7:00 am to 6:00 pm
- Saturday: 8:00 am to 1:00 pm
- At no times on Sundays and Public Holidays.

In accordance with MCoA E39 highly noise intensive works that result in an exceedance of the applicable NML 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.

'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 classified as 'highly noise intensive works' by the SSI 10051 definitions.

These include:

- 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.

Works to be undertaken outside of approved construction hours would be permitted providing they meet the requirements of MCoA E41, or per MCoA E42 may be undertaken per the Out-of-Hours Work (OOHW) Protocol (refer to Section [6.4.2](#)).

5.2.2 Out-of-Hours Works

MCoA E41 notes that notwithstanding Conditions E38 and E39 work may be undertaken outside the hours specified in the following circumstances:

- (a) Safety and Emergencies, including:
- i. for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or
 - ii. where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or
- (b) Low impact, including:
- i. construction that causes LAeq(15 minute) noise levels:
 - no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and
 - no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s); and
 - ii. construction that causes:

- continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), or
- intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or

(c) By Approval, including:

- where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or
- works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E42; or
- negotiated agreements with directly affected residents and sensitive land user(s); or

(d) By Prescribed Activity, including:

- delivery of material that is required to be delivered outside of standard construction hours in Condition E38 to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to / from the Orchard Hills ancillary facility; or

On becoming aware of the need for emergency work in accordance with (a)(ii) above, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. The Proponent must use best endeavours to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work.

5.3 Noise Management Levels

5.3.1 Interim Construction Noise Guideline (DECC, 2009)

Table 2 of the ICNG (table 1 of the CNVS), reproduced in Table 5-1 below, shows how Noise Management Levels (NMLs) at residences are determined and how they are to be applied.

Table 5-1 Noise Management Levels at Residential Receivers

Time of Day	Noise Management Level $L_{Aeq(15min)}^1$	How to Apply
Standard hours ¹ : Monday to Friday 7 am to 6 pm Saturday 8.00 am to 6.00 pm	RBL + 10 dB(A)	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq(15min)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent would also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.

Time of Day	Noise Management Level $L_{Aeq}(15min)$ ¹	How to Apply
	Highly noise affected 75 dB(A)	<p>The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the proponent would consider very carefully if there is any other feasible and reasonable way to reduce noise to below this level.</p> <p>If no quieter work method is feasible and reasonable, and the works proceed, the proponent would communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that will be provided.</p>
Outside recommended standard hours	Noise affected RBL + 5 dB(A)	<p>A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level.</p> <p>Where all feasible and reasonable practices have been applied and noise is more than 5 dBA above the noise affected level, the proponent would negotiate with the community. For guidance on negotiating agreements see Section 7.2.2 of the ICNG.</p>

Note: Noise levels apply at the property boundary that is most exposed to construction noise. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise affected point within 30 m of the residence.

The RBL is used when determining the NML and is the overall single-figure background noise level measured in each relevant assessment period (as defined in the EPA's Noise Policy for Industry dated October 2017). NMLs apply only when the property is being used, for example, classrooms during school hours. Internal noise levels are to be assessed at the centre of the occupied room. External noise levels are to be assessed at the most-affected point within 50 m of the area boundary. The difference between the internal noise level and the external noise level is typically 10 dB with windows open for adequate ventilation, as detailed within the ICNG. This figure has been adopted by this plan.

Non-mandatory NMLs for non-residential properties which are sensitive to noise impacts are presented in Table 5-2. These values are established on the principle that the typical activities for each use would not be unduly disturbed by the proposed allocated NML.

The NML for commercial and industrial premises are defined as per the land use in Table 5-2 and are assessed at the most affected point of the premises.

Other noise-sensitive businesses require separate specific noise goals and it is suggested in the ICNG that the internal construction noise levels at these premises are to be referenced to the 'maximum' internal levels presented in AS 2107. Recommended 'maximum' internal noise levels from AS 2107 are reproduced in Table 5-2 for other sensitive receiver types.

Table 5-2 Noise at sensitive land uses (non-residential) using quantitative assessment

Land Use	Management Level ^(15minute) (Applies When Land Use is being Utilised)
<ul style="list-style-type: none"> Classrooms at schools and other educational institutions Hospital wards and operating theatres Places of worship Childcare Centres (internal play/sleep areas) 	45 dB(A) (internal) 55 dB(A) (external)
Active recreational areas and Outdoor Childcare playgrounds (such as parks and sports grounds or playgrounds)	65 dB(A) (external)
Passive recreational areas (such as outdoor grounds used for teaching, outdoor cafes or restaurants)	60 dB(A) (external)
Industrial premises	75 dB(A)
Office, retail outlets, small commercial premises	70 dB(A)
Hotel – Bars and lounges (day and evening) ¹	50 dB(A) (Internal)
Hotel – Sleeping areas: Hotels near major roads (night) ¹	40 dB(A) (Internal)
Café (Coffee Bar)	50dB(A) (Internal) 60dB(A) (External)
Bar/Restaurant (Bars and Lounges/Restaurant)	50dB(A) (Internal) 60dB(A) (External)
Library (Reading Areas)	45 dB(A) (Internal)
Recording Studio (Music Recording Studios)	25dB(A) (Internal)
Theatre/ Auditorium (Drama Theatres)	30dB(A) (Internal)

5.3.2 Sleep Disturbance

Maximum noise level events from construction activities during the night-time period can trigger both awakenings and disturbance to sleep stages. In line with the CNVS, the approach to managing events that cause sleep disturbance shall be consistent with the Noise Policy for Industry (EPA, 2017). A detailed maximum noise level even assessment is required where night-time noise levels at a residential location exceed the:

- LAeq,15min 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or the
- LAFmax 52 dB(A) or the prevailing RBL plus 15 dB, whichever is the greater

The detailed assessment, which will be carried out in the DNVIS, will cover the maximum noise level, the extent to which the maximum noise level exceeds the RBL, and the number of times this happens during the night-time period.

Maximum noise level event assessments should be based on the LAFmax descriptor on an event basis under 'fast' time response. The detailed assessment will consider all feasible and reasonable noise mitigation measures with a goal of achieving the above trigger levels for night-time activities.

As per MCoA E42, the ER will review all proposed night-time works to determine if sleep disturbance would occur and recommend measures to avoid sleep disturbance or appropriate additional alternative mitigation measures.

5.4 Project-specific Noise Management Levels

In accordance with Table 2 of the ICNG, Project-specific construction NML for each NCA have been determined using the measured ambient noise levels (RBLs) described in Section 4.4. These NMLs are presented in Table 5-3.

Table 5-3 Project Noise Management Levels

NCA	NML Approved hours, LAeq, 15 min	NML Outside approved hours				
		Day NML, LAeq, 15 min	Evening NML, LAeq, 15 min	Night NML, LAeq, 15 min	Sleep disturbance	
					LAeq, 15 min	LAmix
NCA01	48	43	43	43	43	53
NCA02	47	42	42	41	41	52
NCA03	47	42	42	41	41	52
NCA04	45	40	37	36	40	52
NCA05	50	45	45	45	45	55
NCA06	47	42	42	41	40	52
NCA07	57	52	47	35	40	52
NCA08	54	49	49	45	45	55
NCA09	50	45	44	39	40	52
NCA10	45	40	35	35	40	52
NCA11	49	44	42	35	40	52
NCA12	48	43	40	39	40	52
NCA13	49	44	42	35	40	52

5.4.1 Ground-Borne noise

Ground-borne (regenerated) noise is noise generated by vibration transmitted through the ground into a structure. Ground-borne noise caused, for example by underground works such as tunnelling, can be more noticeable than airborne noise. The following ground-borne noise levels for residences are nominated in the ICNG and indicate when management actions would be implemented. These levels recognise the temporary nature of construction and are only applicable when ground-borne noise levels are higher than airborne noise levels. Any levels exceeding objectives should be considered in the context of any existing exposure to ground-borne noise.

The ground-borne noise management levels are given below in line with the requirements of MCoA E44:

- Evening (6.00 pm to 10.00 pm) Internal Residential: 40 dB LAeq(15minute)
- Night-time (10.00 pm to 7.00 am) Internal Residential: 35 dB LAeq(15minute)

The evening and night-time criteria are only applicable to residential receivers. The internal noise levels are to be assessed at the centre of the most-affected habitable room. For a limited number of discrete, ongoing ground-borne noise events, such as drilling or rock hammering, The LAmix noise descriptor using a slow response on the sound level meter may be better than the LAeq noise descriptor (15 min) in describing the noise impacts. The level of mitigation of ground-borne noise would depend on the extent of impacts and also on the scale and duration of works. Any restriction on the days when construction work is allowed would consider whether the community:

- identifies times of day they are more sensitive to noise (for example Sundays or public holidays).
- accepts a longer construction duration in exchange for days of respite.

There is no guidance in the ICNG for acceptable ground-borne noise levels in commercial and other potentially sensitive receivers. However, the following has been applied as an initial screening approach for commercial and potentially sensitive other receivers in use outside daytime hours:

- Where an external ICNG NML applies, a level of 10 dB(A) below the NML has been adopted. This is based on the assumption that a 10 dB(A) noise reduction typically applies from external to internal for partially open windows as described in the NSW Road Noise Policy; or
- Where an internal ICNG NML applies, the objective for ground borne noise has also been set at this internal NML level.

5.5 Vibration

Approval condition MCoA E43 requires that the project be constructed with the aim of achieving the following vibration goals:

- Preferred vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure);
- BS 7385 Part 2-1993 “Evaluation and measurement for vibration in buildings Part 2” as they are “applicable to Australian conditions”; and
- The vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage).

Further details of each of these references are provided below.

5.5.1 Vibration Criteria

Construction vibration is associated with three main types of impact:

- Disturbance to building occupants
- Potential damage to buildings
- Potential damage to sensitive equipment in a building.

Generally, if disturbance to building occupants is controlled, there is limited potential for structural damage to buildings.

5.5.2 Human exposure to vibration

Tactile vibration potentially disturbing human occupants of buildings is managed by reference to Assessing Vibration; a technical guideline (DECC, 2006). This document provides criteria which are based on the British Standard BS 6472-2008 Evaluation of human exposure to vibration in buildings (1-80Hz).

Vibration sources are defined as Continuous, Impulsive or Intermittent. Table 5-4 provides a definition and examples of each type of vibration.

Table 5-4 Types of vibration

Types of vibration	Definition	Examples
Continuous	Continues uninterrupted for a defined period (usually throughout the day-time and/or night-time)	Machinery, steady road traffic, continuous construction activity (such as roadheader excavation).
Impulsive	A rapid build-up to a peak followed by a damped decay that may or may not involve several cycles of vibration (depending on frequency and damping). It can also consist of a sudden application of several cycles at approximately the same amplitude, providing the duration is short (typically less than 2 seconds)	Infrequent: Activities that create up to three distinct vibration events in an assessment period, e.g. occasional dropping of heavy equipment, occasional loading and unloading.
Intermittent	Can be defined as interrupted periods of continuous or repeated periods of impulsive vibration that varies significantly in magnitude	Trains, nearby intermittent construction activity, passing heavy vehicles, forging machines, impact pile driving, jack hammers. Where the number of vibration events in an assessment period is three or fewer, they would be assessed against impulsive vibration criteria.

Preferred and maximum values for continuous and impulsive vibration are defined in Table 2.2 of the guideline and are reproduced in Table 5-5.

Table 5-5 Preferred and maximum levels for human comfort (continuous and impulsive vibration)

Location	Assessment period ¹	Preferred values		Maximum values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Continuous vibration ³ (weighted rms Acceleration, m/s ² , 1-80Hz)					
Critical areas ²	Day or night-time	0.005	0.0036	0.010	0.0072
Residences	Daytime	0.010	0.0071	0.020	0.014
	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
Workshops	Day or night-time	0.04	0.029	0.080	0.058

Location	Assessment period ¹	Preferred values		Maximum values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Impulsive vibration ³ (Weighted rms Acceleration, m/s ² , 1-80Hz)					
Critical areas ²	Day or night-time	0.005	0.0036	0.010	0.0072
Residences	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92

Notes:

1. Daytime is 7.00am to 10.00pm and night-time is 10.00pm to 7.00am
2. Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. There may be cases where sensitive equipment or delicate tasks require more stringent criteria than the human comfort criteria specified above. Stipulation of such criteria is outside the scope of their policy and other guidance documents (eg. relevant standards) and should be referred to. Source: BS 6472-2008
3. Source: Table 2.2, Assessing Vibration; a technical guideline, Department of Environment and Climate Change 2006.

When assessing intermittent vibration, the vibration dose value (VDV) is used. VDV accumulates the vibration energy received over the daytime and night-time periods. As such, the vibration dose value is dependent upon the level and duration of the short term vibration event, as well as the number of events occurring during the daytime or night-time period.

The vibration dose values recommended in BS 6472-1992 for which various levels of adverse comment from occupants may be expected are presented in Table 14.

Table 5-6 Vibration Dose Value Ranges above which various degrees of Adverse Comment may be expected in Residential Buildings

Place and Time	Low Probability of Adverse Comment (m/s ^{1.75})	Adverse Comment Possible (m/s ^{1.75})	Adverse Comment Probable (m/s ^{1.75})
Residential buildings 16 hr day	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential buildings 8 hr night	0.13	0.26	0.51

5.5.3 Damage to buildings

There is no current Australian Standard for assessing structural building damage caused by vibration.

Potential damage of buildings and structures by vibration is typically managed by ensuring vibration at the structure does not exceed limits and standards described in British Standard 7385: Part 2. In addition, guidance values in German Standard DIN 4150-3, are generally used in reference to heritage structures and items.

British Standard BS 7385: Part 2 'Evaluation and measurement of vibration in buildings' can be used as a guide to assess the likelihood of building damage from ground vibration. The standard suggests levels at which 'cosmetic', 'minor' and 'major' categories of damage might occur. Damage consists of minor non-structural effects such as hairline cracks on drywall surfaces, hairline cracks in mortar joints and cement render, enlargement of existing cracks and separation of partitions or intermediate walls from load-bearing walls. 'Minor' damage is considered possible at vibration magnitudes which are twice those given and 'major' damage to a building structure may occur at levels greater than four times those values.

BS 7385 is based on peak particle velocity and specifies damage criteria for frequencies within the range 4 Hz to 250 Hz, being the range usually encountered in buildings. At frequencies below 4 Hz, a maximum displacement value is recommended. The values set in the standard relate to transient vibrations and to low-rise buildings. Continuous vibration can give rise to dynamic magnifications due to resonances and may need to be reduced by up to 50 per cent. Table 5-7 sets out the BS 7385 safe limits for cosmetic damage.

Table 5-7 BS 7385 cosmetic damage safe limits

Line	Type of building	Peak component particle velocity in frequency range of predominant pulse	
		4 Hz to 15 Hz	15 Hz and above
1	Reinforced or framed structures industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Un-reinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

For most construction activities involving intermittent vibration sources such as rock hammers, piling rigs, vibratory rollers, excavators and the like, the predominant vibration energy occurs at frequencies greater than 4 Hz (and usually in the 10 Hz to 100 Hz range). On this basis, the following vibration level (PPV) has been adopted as the assessment criteria for sound structures:

- Reinforced or framed structures – 25 mm/s
- Unreinforced or light framed structures – 7.5 mm/s.

For assessment purposes, a conservative vibration damage screening level of 7.5 mm/s has been adopted for sound structures to identify where further investigation is required.

For structures where the predicted and/or measured vibration levels are greater than shown above (peak component particle velocity), a more detailed analysis of the building structure, vibration source, dominant frequencies and dynamic characteristics of the structure would be done during detailed design to determine the applicable safe vibration level and approach to construction near the structure.

5.5.4 Heritage items

Heritage items are considered on a case by case basis, and care should be taken as these structures can be difficult to repair in the case of damage. It should be noted that British Standard BS 7385 Part 2-1993 states that 'a building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive' (p.5, s.7.5.2) when compared to other structures. Heritage buildings and structures would be assessed as per the screening criteria as described in Section 5.5.3 as they should not be assumed to be more sensitive to vibration unless they are found to be structurally unsound. If a heritage building or structure is found to be structurally unsound (following inspection) a more conservative cosmetic damage objectives of 2.5 mm/s peak component particle velocity (from DIN 4150) would be considered. Note that the 2.5 mm/s objective is more conservative than the guideline values identified in Table 1 of the DIN 4150 for short-term vibration impacts. The 2.5mm/s limit will be applied if any long-term vibration on heritage structure is identified, which is unlikely.

The general approach to managing potential vibration impacts on heritage items would be to:

- 1) Identify heritage items where the 2.5 mm/s peak component particle velocity objective may be exceeded during specific construction activities
- 2) Carry out a structural engineering report on identified heritage items, to confirm structural integrity of the building and confirm if item is 'structurally sound'
- 3) Adopt the appropriate screening level from BS7385 Part 2 if the item was confirmed as 'structurally sound', or
- 4) Adopt the more conservative cosmetic damage level of 2.5 mm/s peak component particle velocity if the item was confirmed as 'structurally unsound'.

Vibration testing will be undertaken during activities that have the potential to impact structurally sensitive (i.e. structurally unsound) heritage items, to identify minimum working distances to prevent cosmetic damage. It is unlikely vibration will affect any known heritage items, however, vibration monitoring would be undertaken at heritage assets at the request of the asset owners where feasible and reasonable. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the construction methodology will be reviewed and, if necessary, implement additional mitigation measures.

5.5.5 Damage to vibration-sensitive equipment

No vibration-sensitive equipment has been identified to be affected in the EIS nor as part of the land-use survey as part of the power enabling works, however, if vibration-sensitive equipment is identified prior to the commencement of construction or during construction the following vibration monitoring and management measures would be carried out.

There is no explicit guidance on acceptable vibration levels for sensitive equipment, so recommended vibration levels should be obtained from instrument manufacturers. In the absence of equipment-specific data provided by manufacturers, generic Vibration Criterion (VC) curves can be used. Table 5-8 summarises a range of suitable vibration limits that are applicable to buildings

housing vibration-sensitive equipment which may potentially be affected by construction works associated with the project.

Table 5-8 Acceptable vibration limits on building structure housing sensitive equipment

Criterion Curve	Max level (um/sec, RMS)	Detail size (um)	Description of use
VC-A	50	8	Adequate in most instances for optical microscopes to 400X, microbalances, optical balances, proximity and projection aligners, etc.
VC-B	25	3	An appropriate standard for optical microscopes to 1000X, inspection and lithography equipment (including steppers) to 3 micron line widths.
VC-C	12.5	1	A good standard for most lithography and inspection equipment to 1 micron detail size.
VC-D	6	0.3	Suitable in most instances for the most demanding equipment including electron microscopes (TEMs and SEMs) and E-Beam systems, operating to the limits of their capability.
VC-E	3	0.1	A difficult criterion to achieve in most instances. Assumed to be adequate for the most demanding of sensitive systems including long path, laser-based, small target systems and other systems requiring extraordinary dynamic stability.

5.5.6 Damage to buried utilities

Section 5.3 of DIN 4150: Part 3 sets out guideline values for vibration velocity to be used when evaluating the effects of vibration on buried pipework. These values, which apply at the wall of the pipe, are reproduced and presented in Table 5-9. As part of detailed design, these vibration limits would be considered to minimise the potential for damage to buried utilities from vibration impacts.

Table 5-9 Acceptable vibration limits for effects of short-term vibration on buried pipework

Line	Pipe Material	Guideline values for vibration velocity measured on the pipe, mm/s
1	Steel (including welded pipes)	100
2	Clay, concrete, reinforced concrete, pre-stressed concrete, metal (with or without flange)	80
3	Masonry, plastic	50

Notes:

1. Consideration must also be given to pipe junctions within the building structure as potential substantial changes in mechanical loads on the pipe must be considered.

For long-term vibration, the vibration limits presented in [Table 5-9](#) should be halved.

Recommended vibration goals for electrical cables and telecommunication utilities such as fibre optic cables range from 50 mm/s to 100 mm/s. Although cables may sustain these vibration levels, the utilities they are connected to, such as transformers and switch blocks, may not. If such equipment

is encountered during the construction process, an individual vibration assessment would be carried out addressing impact on the utility, and consultation with the utility provider, to confirm specific vibration requirements.

6. Environmental aspects and impacts

6.1 Construction activities

The Off Airport power enabling work is located across six areas north and south of the Western Sydney Airport as described below:

- Portion 1 - Patons Lane Undergrounding [PLU]: A 300m extent along Patons Ln, Orchard Hills.
- Portion 2 - Claremont Meadows Services Facility Power [CMP]: Beginning from a new Sub Station near the intersection of the Great Western Highway, extending for approximately 550m to terminate on Sunflower Dr.
- Portion 3 - Orchard Hills Power [OHP]: Claremont Meadows: Beginning at Claremont Meadows Zone Sub Station on Sunflower Dr in Claremont Meadows extending to a new Switching Station on Kent Rd approximately 300m south of the M4.
- Portion 4 - Airport Business Park Power [ABP]: Extending approximately 5.7km from the existing Kemps Creek Zone Sub-station to a new Switching Station within On Airport land.
- Portion 5 - Precast Facilities Power [PFP]: Extending for approximately 500m along Longleys Rd east of Badgerys Creek Rd starting and terminating at two new Sub Stations.
- Portion 6 - Aerotropolis Power [AEP]: Extending for approximately 3.1km north from Bringelly Zone Sub Station to a new Sub Station at the new Aerotropolis Metro Station.

A description of key potentially noise and vibration generating construction activities is provided in [Table 6-1](#) below. The project will primarily involve trenching for underground feeder routes. This may involve rock hammering where rock is encountered. There will also be a small number of horizontal directional drilling sites to avoid trenching in major roads or creeks. Other minor works would include installation of pre-fabricated kiosks and stringing overhead wires.

Table 6-1 Description of key potentially noise and vibration generating construction activities

Works category	Description of activities
All sites (as applicable)	
Mobilisation, site set-up	<ul style="list-style-type: none"> • Site compound setup for site offices, amenities and material storage • Site compound setup for materials, spoil and waste management and handling – segregation of waste management bays • Environmental controls setup – chemical storage container, sediment controls • Site security measures • Deliveries of permanent material – i.e. conduits, cover strip, spacers • Progressive removal of spoil material and importing of quarry materials.
Service locating, potholing,	<ul style="list-style-type: none"> • Existing service locating and space / design proving of the alignment in pinch point locations

Works category	Description of activities
investigations , site preparation works	<ul style="list-style-type: none"> Locating of "challenging" excavation spots – i.e large/ major utility crossings Waste material sampling and classifications Open excavations rock hammering for rock strength and level testing Survey works Tree branch trimming and removal where required. Tree protection where required.
Trench excavation, conduit installation, backfilling , temporary restorations	<ul style="list-style-type: none"> Trenching installations will works will consist of open excavations, conduit installation, backfilling and temporary restorations and will progressively move along the trench alignment. Trench depths ranging from 600mm to approximately 3200mm and widths ranging from 400mm out to 2800mm wide in some areas. Trenching works will occur within footpaths, the road carriageway or road shoulder lanes, or Endeavour Energy electrical easements Open excavations when deeper than 1500mm or in poor ground conditions trenches will be shored with either vertishores or shoring boxes. 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/rock (VENM) will be loaded into truck separately to ensure maximisation suitable material for re-use. Some excavations may encounter rock. This will require rock hammering methods. Once excavation has achieved the required depth, conduits will be installed and jointed with PVC glues. Pipe embedment will vary across the project depending on the composition of the trench & its location. Bedding materials to be utilised include compaction sand & cement stabilised sand. Polymeric (HDPE) cable cover strips are laid on-top of the pipe embedment. Trench backfill material will be placed, compacted and vibrated in approximately 150mm layers above the cover strip with trench compaction equipment. This process will be repeated for multiple layers until the underside of subgrade is met (approximately 350mm below surface level). Compacting testing will occur progressively during backfilling and layers. Compaction sand or stabilised sand would be placed for backfill immediately around existing utilities crossed. Stabilised sand may require water conditioning during placement, however does not required vibration compaction from 2ton trench roller, instead isolated handheld jumping jack leveling. Soft electrical warning marker tape is rolled out and installed on the top of the trench backfill and below the road subgrade level. 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. 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. Any open excavations at the end of each shift within 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. Any open excavations within the secured site will be covered between shifts to ensure public safety of any unauthorised entry in the site. Trenching works will progress approximately 10-30 metres per dayshift, and approximately 4-12 metres per nightshift pending ground conditions.
HDD bores	<ul style="list-style-type: none"> Survey setout of bore. Utility investigation to validate locations and depths before trenchless drilling. 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.

Works category	Description of activities
	<ul style="list-style-type: none"> '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. "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. Concurrently to HDD boring works, high density polyethylene (HDPE) pipes are plastic butt welded together and internally debaded. HDPE pipes are welded into a string to match the length of the HDD bore. Pipe will be dragged from its welding location along the alignment. It is then connected to the drilling roads before being pulled into the bore hole 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. 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. Once pipe is installed, grout will be installed via gravity pour at the entry and exit pits and pumping through a tremie line installed. During the HDD bore, and for a set schedule after completion, road monitoring targets are monitored to ensure no road surface movement
Bed bores	<ul style="list-style-type: none"> Excavate, shore of launch & receive pit shafts approximately 3m long, 2m wide, dug to the depth of the bore. Lift bed bore rig into send hole. Load auger bores as the bore progresses Remove bed boring rig once augers retracted. Install pre-staged carrier conduit pipes and spacers.
Cable installation, jointing works	<ul style="list-style-type: none"> Roping, and mandrelling (proving) of conduits. Re-opening of joint bay excavations. Cable winch pulling. Various open points along the alignment for cable pushing bays Cable jointing hut/ covers installed over joint bays for jointing works. Cable testing Joint bay backfill and restorations
Supply and install pad mounted high voltage customer kiosks (HVCs)	<ul style="list-style-type: none"> Construction of reinforced concrete footing with exiting conduits Craneage, installation securing of HVCs. Cable terminations into HVCs, testing and commissioning works
Permanent restorations and handover	<ul style="list-style-type: none"> Return once all conduit installation works and cable pulling, testing works are completed. Mill and re-sheet impacted lane with permanent road pavement material. Restore any footpath materials to pre-existing materials -i.e. concrete or pavers where appropriate

Although subject to change, Table 6-2 gives indicative timing for work at each portion. Figures 6-1 to 6-6 show the location of works on each works Portion. Noise contour maps and expected noise impacts are provided in the DNVIS.

Table 6-2 Indicative construction duration at each work portion

Project Location	Commencement	Completion
Portion 1 - Patons Lane Undergrounding [PLU]	06/01/22	08/04/22
Portion 2 - Claremont Meadows Services Facility Power [CMP]	07/01/22	30/06/22

Project Location	Commencement	Completion
Portion 3 - Orchard Hills Power [OHP]	04/03/22	30/09/22
Portion 4 - Airport Business Park Power [ABP]	28/03/22	30/09/22
Portion 5 - Precast Facilities Power [PFP]	07/03/22	30/06/22
Portion 6 - Aerotropolis Power [AEP]	06/01/22	30/06/22



Figure 6-1 Overview of Portion 1 at Patons Ln



Figure 6-2 Overview of Portion 2 at Claremont Meadows

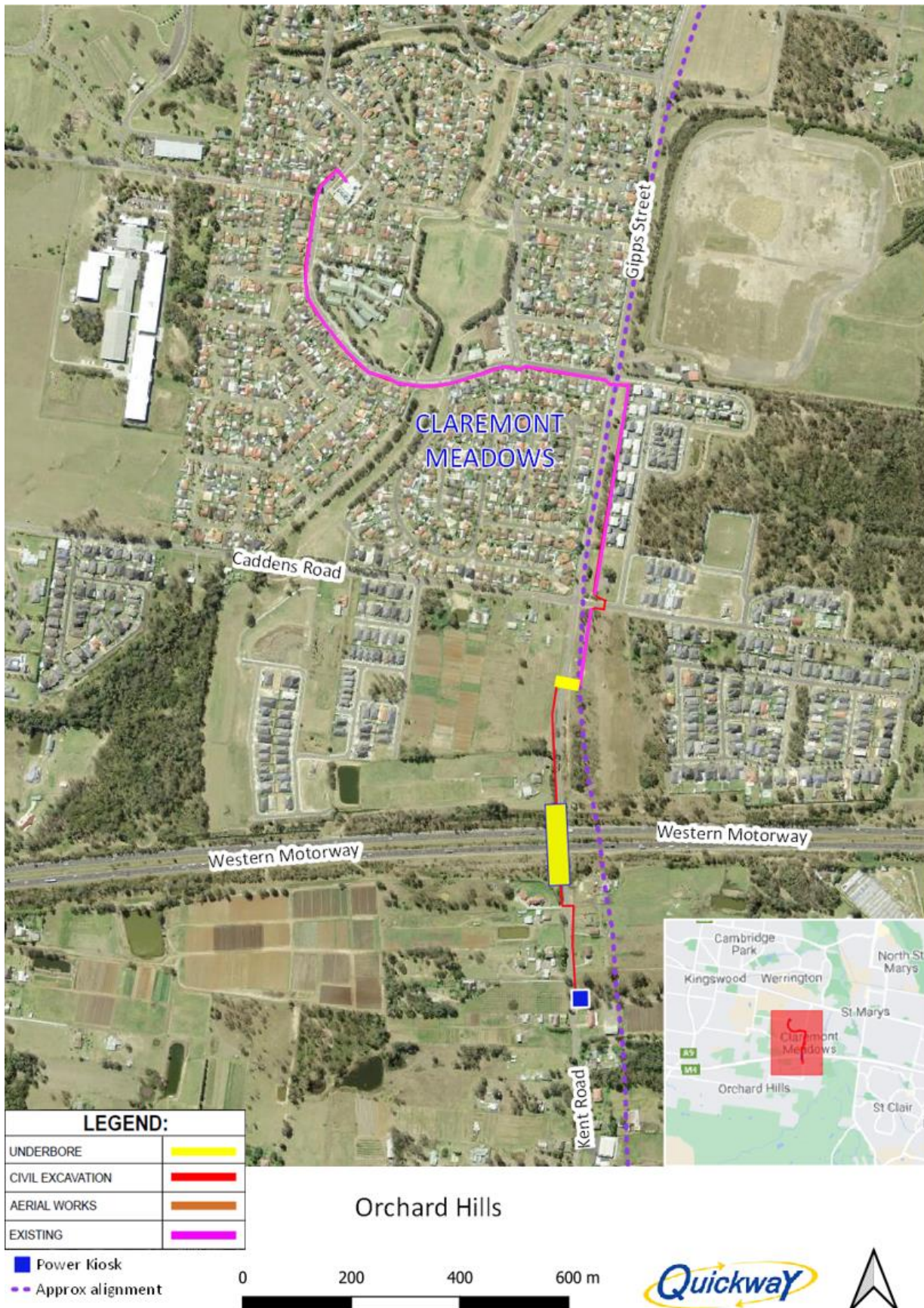


Figure 6-3 Overview of Portion 3 at Orchard Hills



Figure 6-4 Overview of Portion 4 at Airport Business Park



Figure 6-5 Overview of Portion 5 at the Pre-cast Yard



Figure 6-6 Overview of Portion 6 at the Aerotropolis

6.2 Noise impacts

6.2.1 General

The potential for noise and vibration impacts on sensitive receivers or structures will depend on several factors. Typically, these include:

- The type of equipment in use and the level of noise and vibration emissions
- The frequency range of noise or vibration emissions
- The number of equipment simultaneously in use
- Proximity to sensitive receivers
- Topography and other physical barriers
- Time of day works are proposed (e.g. more or less sensitive to noise)
- Duration of construction works
- Ground conditions
- The physical condition of the structure
- Presence of existing background noise (e.g. from heavy traffic areas).

6.2.2 Noise impact assessment

A noise impact assessment for each portion will be presented in the DNVIS. The DNVIS includes typical anticipated Out of Hours Works scenarios as well as receivers most likely to be impacted by those scenarios.

The level of adverse impact will be greater when hammers and saws are in use and additional effort in noise mitigation will be necessary to ensure impacts remain at their practical minimum. These measures are outlined in Section 7.

When undertaking other activities which do not require high noise impact equipment, the level of noise experienced by receivers would be substantially lower.

Where worst-case activities are necessary at night, due to ROL or safety constraints, the level of impact is substantially greater than during approved hours. In these cases, additional assessment will be completed to ensure appropriate mitigation and management measures are applied, including adequate notification and respite for affected receivers.

It is evident, that works further from densely populated areas would be of lesser risk; and where works are necessary at night, the risk would be greater.

6.3 Vibration impacts

6.3.1 Overview

Vibration-intensive works are planned for the Project. Equipment such as excavators with rock breaking and/or ripping attachments would be used throughout excavation or trenches and plate compactors and trench rollers during backfilling. Other equipment may be selected during the Project and these will be included in the DNVIS prepared for ongoing risk assessment (See Section 6.4).

6.3.2 Vibration risk assessment

A vibration impact assessment for each portion will be presented in the DNVIS.

6.4 Ongoing noise and vibration risk assessment

6.4.1 DNVIS

In accordance with MCoA E47 and CEMF Section 8.2b) DNVIS will be prepared for the Power Enabling Works and ancillary site prior to commencement of activities that may exceed the relevant noise management levels. These DNVIS will supplement this CNVMP and produce impact predictions, taking into consideration actual construction methodologies, plant and equipment, location and duration.

The DNVIS will be provided to the ER for information prior to the commencement of associated works.

The DNVIS will be a key site management tool that will give Quickway clear instructions for managing noise and vibration by providing activity-specific noise and vibration predictions and specific mitigation measures identified through consultation with affected sensitive land user(s) to be implemented for the duration of the works. The DNVIS will also provide data for the Quickway OOHWP Permit which will demonstrate compliance regarding the assessment of OOHWP activities. Further detail is provided in the OOHWP Protocol, attached as Appendix B.

The DNVIS will address:

- Scope of work covered by DNVIS
- Nearest noise and vibration sensitive receivers, based on land use survey
- Construction noise and vibration objectives
- Construction noise and vibration assessment
- Mitigation options and preferred management measures
- Any specific mitigation measures that are identified through consultation with affected sensitive receivers during the DNVIS preparation and through ongoing consultation with the community
- Activity specific noise and vibration monitoring requirements.

Monitored noise and vibration levels will be analysed against the predictions made in the relevant DNVIS. This will allow for ongoing review, verification and, where required, amendment of the predictive model.

DNVIS's will be prepared in consideration of the ICNG, Assessing Vibration: A Technical Guideline and German Standard DIN 4150, Part 3: Structural Vibration in Buildings: Effects on Structures and the Project Approvals.

6.4.2 Out-of-Hours Work Protocol

An Out-of-Hours Work Protocol has been prepared by the Planning Secretary to identify a process for the consideration, management and approval of work which are outside approved construction hours, for works not subject to an EPL (MCoA E42).

The Protocol was prepared in consultation with the ER, and EPA. The Protocol provides:

- a) justification for why out-of-hours work need to occur;
- b) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where:
 - i. the ER review all proposed out-of-hours activities and confirm their risk levels;
 - ii. low risk activities can be approved by the ER; and
 - iii. high risk activities that are approved by the Planning Secretary;
- c) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria;
- d) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods consistent with the requirements of Condition E56 of this schedule. The measures must take into account the predicted noise levels and the likely frequency and duration of the out-of-hours works that sensitive land user(s) would be exposed to, including the number of noise awakening events;
- e) procedures to facilitate the coordination of out-of-hours work including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided; and
- f) notification arrangements for affected receivers for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works.

The above requirements for the OOHW protocol are met through implementing the Sydney Metro Out of Hours Works Protocol Attached as Appendix B.

7. Environmental Control Measures

In accordance with MCoA E43, reasonable and feasible noise mitigation measures (such as those listed within Chapter 6 of the ICNG and Section 5 of the CNVS) will be implemented with the aim of achieving the noise and vibration criteria specified in Section 5 of this plan. The proposed reasonable and feasible noise mitigations are included in the following sections.

7.1 Mitigation Measures

A range of environmental requirements and control measures are identified in the Approval documents as well as Sydney Metro documents. Specific measures and requirements to address the CEMF, MCoA and REMMs, in relation to impacts from noise and vibration are outlined in Table 7-1.

These mitigation measures would be implemented through the following means:

- All employees, contractors and subcontractors are to receive a Project induction which would detail specific noise and vibration mitigation measures
- Additionally, mitigation measures would be regularly communicated through toolbox talks
- Mitigation measures would be referred to during site inspections to be implemented where reasonable and feasible

Table 7-1 Noise and Vibration mitigation measures

ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
NV1	Training will be provided to relevant Project personnel, including relevant sub-contractors on noise and vibration requirements from this plan through inductions, toolboxes and targeted training.	Best Practice	Training records	Prior to construction Construction	Environmental Manager
NV2	All employees, contractors and subcontractors are to receive a Project induction. The environmental component may be covered in toolboxes and will include: <ul style="list-style-type: none"> • Relevant approval conditions • Permissible hours of work • Any limitations on high noise generating activities • Location of nearest sensitive receivers • Construction employee parking areas • Relevant site-specific mitigation measures • Appropriate behavioural practices 	Best Practice CNVS	Site induction records	Prior to construction Construction	Environmental Manager
NV3	Drivers will be advised of designated vehicle routes, parking locations, acceptable delivery hours specific to the site and other relevant practices (i.e. minimising the use of engine brakes and no extended periods of engine idling).	Best Practice CNVS	Vehicle movement plans Training records	Construction	Site Supervisor Project Engineer Operator
NV4	Air brake silencers would be used on heavy vehicles that access construction sites multiple times per night or over multiple nights.	Best Practice	Construction Traffic Management Plan (CTMP)	Construction	Operator Site supervisor
NV5	Out-of-hours deliveries will be minimised where possible.	Best Practice	CTMP	Construction	Site supervisor Project Engineer Operator
NV6	All construction plant and equipment used on site will be fitted with properly maintained noise suppression devices in accordance with the manufacturer's specifications.	Best Practice CNVS	Plant inspection records	Construction	Site supervisor

ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
NV7	All construction plant and equipment used on the site will be maintained in an efficient condition.	Best Practice CNVS	Plant inspection records	Construction	Site supervisor
NV8	All construction plant and equipment used on the site will be operated in a proper and efficient manner.	Best Practice CNVS	Site inspection records Safety observations	Construction	Site supervisor
NV9	Non-tonal movement alarms will be used in place of tonal movement alarms	Best Practice CNVS	Plant inspection records	Construction	Project Engineer
NV10	Plant and machinery will be switched off when it is not in use for more than 15 minutes	Best Practice	Site inspection records	Construction	Operators Site supervisor
NV11	Where possible, maintenance work on plant and equipment will be undertaken off site. If maintenance is to be onsite the task will be carried out away from noise sensitive receivers where reasonable and feasible.	Best Practice	Plant inspection records	Construction	Operators Site supervisor
NV12	Consider noise when selecting construction methods and substitute for quieter methods where reasonable and feasible.	Best Practice CNVS	Plant inspection records	Construction	Operators Site supervisor
NV13	Use appropriately sized equipment, avoiding over-powered plant.	Best Practice CNVS	Site inspection records	Construction	Project Engineer Site supervisor
NV14	Additional temporary screening or enclosures will be considered for equipment where additional measures are required to meet relevant NMLs.	Best Practice	Site inspection records	Construction	Site supervisor
NV15	Stationary noise sources would be enclosed or shielded where reasonable and feasible.	Best Practice CNVS	Site inspection records	Construction	Site supervisor
NV16	Construction activities associated with the Project will be carried out in accordance with the hours in Section 5.2.	CoA E38	Site inspection records	Construction	Site supervisor

ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
NV17	<p>Except as permitted by an EPL, highly noise intensive works (as defined in Section 5.2 that result in an exceedance of the applicable NML at the same receiver will only be carried out:</p> <ul style="list-style-type: none"> Between 8:00 am and 6:00 pm Monday to Friday Between 8:00 am and 1:00 pm Saturday In continuous blocks not exceeding three (3) hours each with a minimum respite from those activities and works of not less than one (1) hour between each block. 	CoA E39	Site inspection records	Construction	Project Manager Project Engineer Site Supervisor Environmental Manager
NV18	<p>OOHW is to be carried out in accordance with:</p> <ul style="list-style-type: none"> The requirements of CoA E41 The Project's Out-of-Hours-Works Protocol (Appendix B) 	CoA E41 & E42	OOHW Permits Site inspection records	Construction	Project Manager Project Engineer Site Supervisor Environmental Manager
NV19	Where required, perimeter site hoarding would be designed with consideration of on-site heavy vehicle movements with the aim of minimising sleep disturbance impacts.	Best Practice CNVS	Site inspection records	Prior to construction Construction	Site supervisor Project Engineer
NV20	Portable noise barriers would be used around particularly noisy equipment, such as concrete saws and hammers	Best Practice CNVS	Site inspection records	Prior to construction Construction	Site supervisor Project Engineer
NV21	Site access and egress points will be located as far as feasible and reasonable from noise sensitive receivers.	Best Practice CNVS	Site inspection records	Prior to construction	Project Engineer Environmental Manager

ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
NV22	<p>Residences / sensitive receivers will be notified of construction activities that are likely to affect their noise and vibration amenity in accordance with the CCS. Information provided will include:</p> <ul style="list-style-type: none"> The types of activities to be undertaken The timing of activities including expected start and finish The location of activities Details of the community information line and how to make an enquiry and/or complaint. 	Best Practice	Community notifications	Prior to construction Construction	Community Liaison
NV23	<p>Noise generating work in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.</p>	CoA E45	Consultation records	Prior to construction Construction	Community Liaison Environmental Manager
NV24	<p>Further engagement and consultation would be carried out with:</p> <ul style="list-style-type: none"> The affected communities to understand their preferences for mitigation and management measures. 'Other sensitive' receivers such as schools, medical facilities or places of worship to understand periods in which they are more sensitive to impacts. <p>Based on this consultation, appropriate mitigation and management options would be considered and implemented where feasible and reasonable to minimise the impacts</p>	Best Practice	Consultation records	Prior to construction Construction	Community Liaison Environmental Manager

ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
NV25	The use of noise intensive equipment at construction sites with 'moderate' and 'high' out-of-hours noise management level exceedances would be scheduled for approved construction hours, where feasible and reasonable. Where this is not feasible and reasonable, the works would be undertaken as early as possible in each work shift.	Best Practice	OOHW Permits	Construction/Prior to any OOHW	Site supervisor Project Engineer
NV26	Detailed Noise and Vibration Impact Statements (DNVIS) must be prepared for any work that may exceed the NMLs, vibration criteria and / or ground-borne noise levels at any residence where work is occurring outside approved construction hours or where receivers will be highly noise affected.	CoA E47	DNVIS	Prior to construction Construction	Environmental Manager Noise and Vibration Specialist
NV27	All complaints, including those related to property damage, will be managed in accordance with the CCS.	Best Practice	Complaints register	Construction	Community Liaison
NV28	Owners and occupiers at risk of exceeding the screening criteria for cosmetic damage (as outlined in the DNVIS) will be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owner and occupiers will be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier.	CoA E48	Consultation records	Prior to construction Construction	Community Liaison Project Engineer Project Manager Environmental Manager Noise and Vibration Specialist

ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
NV29	Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, Quickway must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques.	CoA E54	Monitoring records	Construction	Project Engineer Project Manager Environmental Manager Noise and Vibration Specialist
NV30	The likelihood of cumulative construction noise impacts would be reviewed during detailed design when detailed construction schedules are available. Co-ordination would occur between potentially interacting projects to minimise concurrent or consecutive works in the same areas, where possible. Specific mitigation strategies would be developed to manage impacts. Depending on the nature of the impact, this could involve adjustments to construction program or activities of Sydney Metro Western Sydney Airport or of other construction projects.	Best Practice	Consultation records OOHW permits	Construction	Environmental Manager Noise and Vibration Specialist
NV31	Appropriate respite would be provided to affected receivers in accordance with the Sydney Metro Construction Noise and Vibration Standard. When determining appropriate respite, the need to efficiently undertake construction would be balanced against the communities' preferred noise and vibration management approach.	Best Practice CNVS	Monitoring records	Prior to construction Construction	Project Engineer

ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
NV32	Feasible and reasonable measures would be implemented to minimise ground-borne noise where exceedances are predicted. This may require implementation of less ground-borne noise and less vibration intensive alternative construction methodologies.	Best Practice	DNVIS	Construction	Environmental Manager
NV33	Where required, select the smallest rock hammers capable of efficiently completing the work, where feasible and reasonable.	Best Practice CNVS	Site inspection records	Construction	Site supervisor Project Engineer
NV34	No swearing or unnecessary shouting or loud stereos/radios on site. Dropping of materials from height, throwing of metal items and slamming of doors will also be avoided.	Best Practice CNVS	Site inspection records	Construction	Site supervisor Project Engineer
NV35	The safe working distances for vibration intensive plant would be complied with where feasible and reasonable. This would include the consideration of smaller equipment when working in close proximity to existing structures. Where the safe working distance cannot be achieved vibration monitoring will be carried out.	Best Practice	Site inspection records	Construction	Site supervisor Project Engineer Environmental Manager Noise and Vibration Specialist

ID	Measure / Requirement	Source of req.	Evidence	When to implement	Responsibility
NV36	To avoid potential vibration impacts to the Warragamba to Prospect Water Supply Pipelines, a detailed construction vibration assessment would be undertaken in accordance with the Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines (WaterNSW, 2020) and would consider the following requirements: 1) confirm velocity limits for construction activities and the impact the works will have on WaterNSW assets 2) excavation methods would be undertaken in accordance with German Standard DIN 4150-3:2016 (2.5 mm/s PPV) 3) vibration monitoring would be undertaken prior to and during construction for high risk construction activities 4) vibration monitoring reports would be provided to WaterNSW	REMM NV2	-	Construction	Sydney Metro
NV37	Noise levels of plant and equipment items will be considered in procurement decisions, and in any case cannot be used on Site unless compliant with the maximum noise levels in Table 13 of the Sydney Metro CNVS	CNVS	Manufacturer's specification Monitoring and inspection records	Construction	Project Engineer Project Manager Environmental Manager

7.2 Additional noise and vibration mitigation measures

In instances where noise levels are still predicted to exceed the NML at receivers after the application of the measures described in Table 7-1, the CNVS directs that the Project should consider implementing additional mitigation measures where feasible and reasonable, which are included here as Table 7-2, Table 7-3 and Table 7-4, as recommended in the CNVS.

The selection and implementation of feasible and reasonable mitigation measures may be regularly monitored and reviewed by the ER.

Table 7-2 Triggers for Additional Mitigation Measures- Airborne Noise (Table 16 CNVS)

Time Period		Mitigation Measures			
		Predicted LAeq (15minute) noise level Above NML			
		0 to 10 dB	>10 to 20 dB	>20 to 30 dB	> 30 dB
Approved	Mon-Fri (7.00 am - 6.00 pm)	-	LB	LB, M, SN	LB, M, SN
	Sat (8.00 am - 6.00 pm)				
	Sun/Pub Hol (Nil)				
OOHW (Evening)	Mon-Fri (6.00 pm - 10.00 pm)	LB	LB, M	LB, M, SN, RO	LB, M, SN, IB, PC, RO
	Sat (6.00 pm - 10.00 pm)				
	Sun/Pub Hol (8.00 am - 6.00 pm)				
OOHW (Night)	Mon-Fri (10.00 pm - 7.00 am)	LB	LB, M, SN, RO	LB, M, SN, IB, PC, RO, AA	LB, M, SN, IB, PC, RO, AA
	Sat (10.00 pm - 8.00 am)				
	Sun/Pub Hol (6.00 pm - 7.00 am)				

KEY: AA- Alternative Accommodation, M- Monitoring, IB- Individual Briefings, LB- Letter Box Drops, RO- Project specific respite offer, PC- Phone Calls and Emails, SN- Specific notification.

Table 7-3 Additional Mitigation Measures – Ground Borne Construction Noise (Table 17 CNVS)

Time Period		Mitigation Measures		
		Predicted LAeq (15minute) noise level Above NML		
		0 to 10 dB	>10 to 20 dB	> 20 dB
Approved	Mon-Fri (7.00 am - 6.00 pm)	No NML for GBN during approved hours		
	Sat (8.00 am - 6.00 pm)			
	Sun/Pub Hol (Nil)			
OOHW (Evening)	Mon-Fri (6.00 pm - 10.00 pm)	LB	LB, M, SN	LB, M, SN, IB, PC, RO
	Sat (6.00 pm - 10.00 pm)			
	Sun/Pub Hol (8.00 am - 6.00 pm)			
OOHW (Night)	Mon-Fri (10.00 pm - 7.00 am)	LB, M, SN	LB, M, SN, RO, IB, PC, AA	LB, M, SN, IB, PC, RO, AA
	Sat (10.00 pm - 8.00 am)			
	Sun/Pub Hol (6.00 pm - 7.00 am)			

KEY: AA- Alternative Accommodation, M- Monitoring, IB- Individual Briefings, LB- Letter Box Drops, RO- Project specific respite offer, PC- Phone Calls and Emails, SN- Specific notification.

Table 7-4: Additional Mitigation Measures – Ground Borne Vibration

Time Period		Mitigation Measures Where Predicted Vibration Levels Exceed Maximum Levels
Standard	Mon-Fri (7.00 am - 6.00 pm)	LB, M, RO
	Sat (8.00 am - 1.00 pm)	
	Sun/Pub Hol (Nil)	
OOHW (Evening)	Mon-Fri (6.00 pm - 10.00 pm)	LB, M, IB, PC, RO, SN
	Sat (1.00 pm - 10.00 pm)	
	Sun/Pub Hol (8.00 am - 6.00 pm)	
OOHW (Night)	Mon-Fri (10.00 pm - 7.00 am)	LB, M, IB, PC, RO, SN, AA
	Sat (10.00 pm - 8.00 am)	
	Sun/Pub Hol (6.00 pm - 7.00 am)	

KEY: **AA-** Alternative Accommodation, **M-** Monitoring, **IB-** Individual Briefings, **LB-** Letter Box Drops, **RO-** Project specific respite offer, **PC-** Phone Calls and Emails, **SN-** Specific notification.

7.3 Scheduling and Respite

Respite offers, alternative accommodation offers and the requirement to schedule works, both internally and works being undertaken by other projects within the potentially impacted area, to ensure that the intent of the respite periods are not negated, is discussed as part of the effective management of OOHW.

Further detail on the strategies of scheduling and respite (being respite offers and alternative accommodation) can be found within the OOHW Protocol (refer to Section 7 of that document). The OOHW Protocol has been prepared by Sydney Metro and is attached as Appendix B.

8. Compliance Management

8.1 Roles and Responsibilities

The organisational structure and overall roles and responsibilities for the Project team are outlined in Section 6.2 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 6 of the CEMP.

8.2 Training

All employees, contractors and utility staff working on-site will undergo site induction training relating to noise and vibration management issues. The induction training will address elements related to noise and vibration management including:

- Existence and requirements of this Sub-plan
- Normal construction hours and exemptions
- Location of noise sensitive areas
- How to implement noise and vibration management measures

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in noise and vibration management. Examples of training topics include:

- Relevant legislation and guidelines
- Complaints reporting and recording
- The process for seeking approval for out-of-hours works, including consultation
- Specific responsibilities to minimise impacts on the community and built environment from noise and vibration associated with the works

Further details regarding staff induction and training are outlined in Section 6.4 of the CEMP.

8.3 Monitoring and Inspection

8.3.1 Noise Monitoring

Where a DNVIS has been prepared and it has been predicted that noise levels may be in excess of the nominated construction noise goals at a noise sensitive receiver, noise monitoring would be conducted at:

- the affected receiver; or
- if more than one affected receiver has been identified, at the nearest affected receiver; or
- where the nearest affected receiver refuses noise monitoring on their property, at the near point to that receiver within the site boundary.
- If it can be demonstrated that direct measurement of noise from the construction site is impractical, alternative means of determining construction noise levels may be adopted in accordance with Chapter 7 of the Noise Policy for Industry.

All noise monitoring results would be assessed against the nominated noise goals and retained by Quickway in accordance with the requirements of the CEMP. Results will be reported within the 6 monthly compliance report, and will be made available to Sydney Metro and the ER upon request.

8.3.1.1 Methodology

Environmental noise monitoring (excluding spot checks of plant and equipment) will be recorded over 15-minute sample intervals, excluding periods of extraneous noise, until a representative sample has been obtained.

A representative sample will be determined by the person monitoring, who will be competent, suitability trained and experienced in undertaking noise measurements.

All environmental noise monitoring will be undertaken with a fast time constant (i.e. 125 milliseconds), and A-weighted frequency weighting. The minimum range of noise metrics to be stored in the memory for later retrieval include the following A-weighted noise levels: LA90, LAeq, LA10, LA (max).

All outdoor noise measurements will be undertaken with a windscreen over the microphone and measurements of noise will be disregarded when it is raining and/or the wind speed is greater than 5 m/s (18 km/h).

Where possible, noise monitoring is to be carried out at least 3.5 m from any reflective surface other than the ground and the preferred microphone/measurement height is 1.2-1.5 m above the ground while using a tripod.

Where high background noise levels obscure construction noise contribution during attended noise measurements, operators will either:

- measure closer to the source and calculate back to the required position, or
- measure with the source noise off and then on (where possible) and calculate the difference or
- use the 'pause and back-erase' feature on the sound level meter to try to exclude as much of the extraneous noise as possible.

For spot checks of noise intensive plant and equipment, duration of monitoring will depend on the source of noise being monitored. Sources of continuous noise (such as generators), measurements will be monitored over one-to-two-minute intervals. For dynamic plant, such as front-end loaders, spot checks will capture a representative activity, such as one truck-and-dog load cycle

8.3.2 Vibration Monitoring

Where it is anticipated that an item of plant will exceed the cosmetic damage criteria given in Section 5.5, vibration monitoring would be required at the nearest affected receiver.

Where it is anticipated that an item of plant will exceed the human response / ground borne noise criteria and concerns have been raised regarding vibration, vibration monitoring would also be required at the receiver(s) under question.

All vibration monitoring results would be assessed against the nominated vibration goals and retained by Quickway in accordance with the requirements of the CEMF. Results will be reported within the 6 monthly compliance report, and will be made available to Sydney Metro and the ER upon request.

8.3.3 Monitoring at Heritage items

Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to verify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques.

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.

8.3.4 Continual improvement and corrective action

Monitored noise and vibration levels will be analysed against the predictions made in the relevant DNVIS or using the Project's predictive tool. Where monitored noise levels are found to be above modelling predictions or vibration goals are exceeded, the following actions will be undertaken:

- Confirm the monitored levels are not being impacted by other noise or vibration sources
- Confirm if the exceedance is due to an uncharacteristically loud piece of equipment
- Identify if the equipment can be swapped out for another piece of equipment or alternative equipment or plant
- Confirm if the exceedance is due to an uncharacteristically vibratory piece of equipment
- Confirm that the modelling reflects the actual activity being undertaken

- Implement other feasible and reasonable measures which may include reducing plant size, modifying time of works, changing operational settings (such as turning off the vibratory function of the machine), and utilising alternative construction methodology or a combination of these
- Review work practices to ensure compliance with the ICNG
- Review and revise mitigation measures as appropriate
- Ensure that the learnings from the above are fed back into the noise modelling assessment process for fine-tuning
- Communicate lessons learnt to relevant personnel.

Quickway will review the work or activity or combination of simultaneous works or activities as soon as practicable and where possible, modify the work or activity to prevent any recurrence. In the case of above prediction monitoring results, the need for modelling to be reviewed will also be considered. Lessons learnt will be communicated to relevant personnel in toolbox talks.

8.4 Complaints

Complaints will be recorded and managed as detailed in Section 6.6 of the CEMP.

8.5 Reporting and Records

Reporting requirements and responsibilities are documented in Section 6.9 of the CEMP. Additional reporting will also be generated as required in DNVIS documents.

Specific reports prepared in response to noise and vibration will include:

- The locations and descriptions of monitoring carried out including conditions and equipment used (personnel should also be listed in internal records)
- A tabulation of results (e.g. for noise including L_A (max) and L_{A90} and L_{Aeq} noise levels) together with notes identifying the principle sources and operations
- Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria
- Records of community enquiries and complaints, and the Contractor's response (as part of CCS)
- Summary of any measurements exceeding the nominated criteria, and descriptions of the plan or operations causing these exceedances
- Detail of any corrective actions

8.6 Hold points

The internal hold points applied to Noise and Vibration Management for the Project are identified in Table 8-1. The internal verification process will require the approval of the Environmental Manager (or delegate) to proceed.

Table 8-1. Noise and vibration hold points

Hold Point	Activity for Release	Where addressed	Release by	Source of Requirement
Land Use Survey	Progressive completion before the commencement of work in each location which generates construction noise, vibration or ground-borne noise in that area.	Appendix A	Environment Manager	MCoA E37
Out of Hours Works Permit	Out of hours	Appendix B	Either Quickway, ER, or DPIE Approval authority is determined by proposed works and potential impacts – refer to Out of Hours Works Protocol included in Appendix B	MCoA E42

9. Review and Improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. This process will be

The continuous improvement process will be designed to:

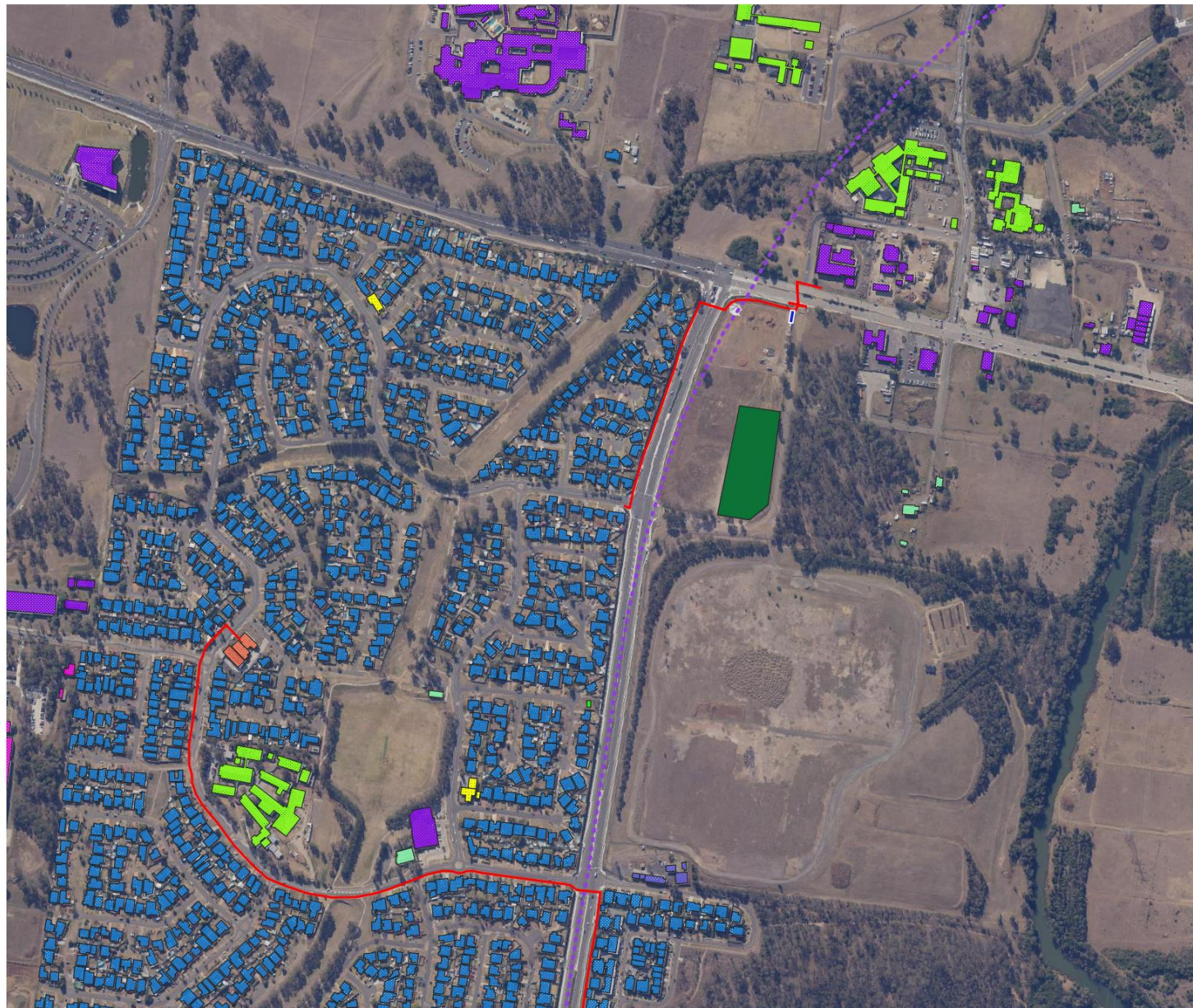
- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

9.1 CNVMP update and amendment

The processes of document review and update are described in Section 6.10 and 6.11 of the CEMP.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to Section 6.9.2 of the CEMP.

Appendix A Land Use Survey



Land Use Survey- Work
Portion 2 & 3

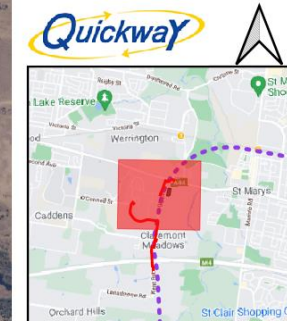
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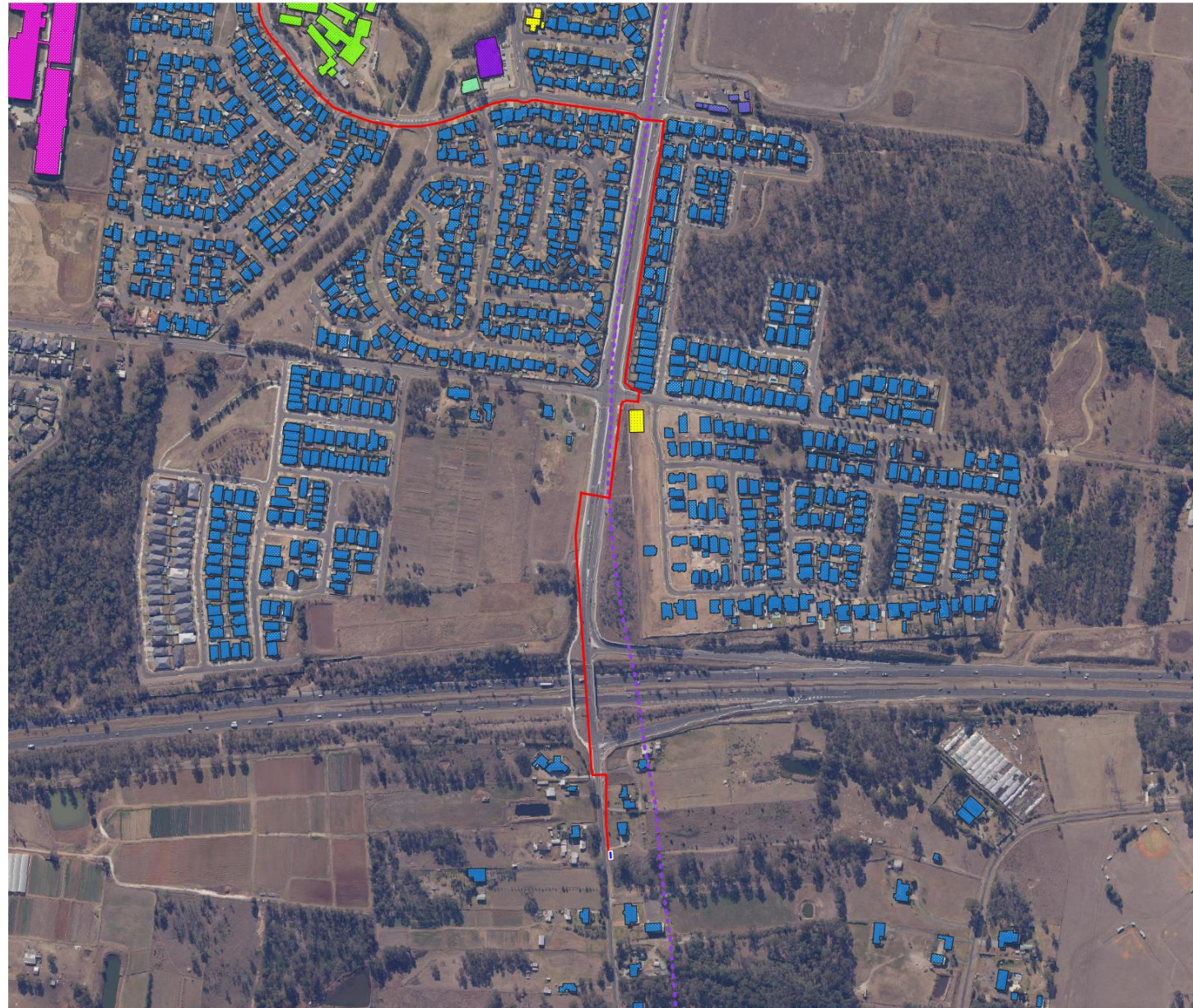
- Kiosk/Substation
- Project Route
- - - Approx alignment
- ▨ Airport boundary (Approx)
- Ancillary Site SA-02

Receiver Type

- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare
- State Heritage

0 140 280 m





Land Use Survey- Work
Portion 3

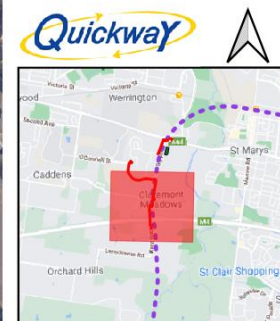
Legend

- Kiosk/Substation
- Project Route
- - - Approx alignment
- ▨ Airport boundary (Approx)
- Ancillary Site SA-02

Receiver Type

- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare
- State Heritage

0 140 280 m



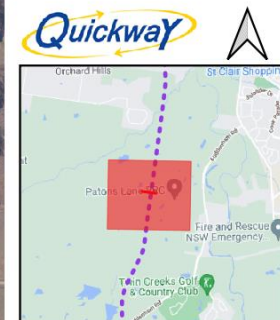


Land Use Survey- Work Portion 1

Legend

- Kiosk/Substation
- Project Route
- - - Approx alignment
- ▨ Airport boundary (Approx)
- Ancillary Site SA-02
- Receiver Type**
- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare
- State Heritage

0 140 280 m

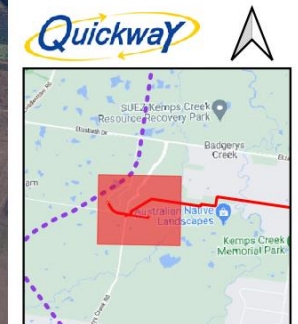




Land Use Survey- Work
Portion 4 & 5

- Legend**
- Kiosk/Substation
 - Project Route
 - - - Approx alignment
 - ▨ Airport boundary (Approx)
 - Ancillary Site SA-02
- Receiver Type**
- Commercial/Business
 - Community Use
 - Conservation/National Park
 - Industrial/Utilities
 - Mixed Use
 - Recreational/Open Space
 - Residential
 - Rural/Primary Production
 - Special Use
 - Transport/Infrastructure
 - Other
 - Education
 - Childcare
 - State Heritage

0 140 280 m





Land Use Survey- Work
Portion 4

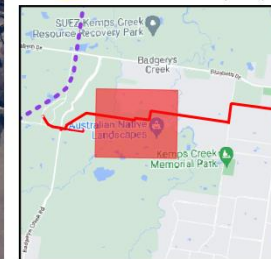
Legend

- Kiosk/Substation
- Project Route
- Approx alignment
- ▨ Airport boundary (Approx)
- Ancillary Site SA-02

Receiver Type

- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare
- State Heritage

0 140 280 m





Land Use Survey- Work
Portion 4

Legend

- Kiosk/Substation
- Project Route
- Approx alignment
- Airport boundary (Approx)
- Ancillary Site SA-02

Receiver Type

- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare
- State Heritage

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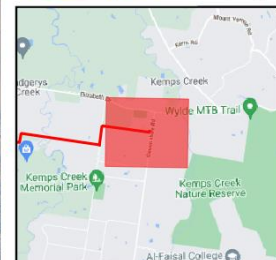


Land Use Survey- Work
Portion 4

Legend

- Kiosk/Substation
- Project Route
- Approx alignment
- Airport boundary (Approx)
- Ancillary Site SA-02
- Receiver Type**
- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare
- State Heritage

0 140 280 m





Environmental Control
Map- Work Portion 6

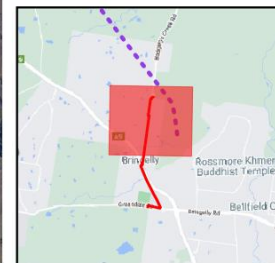
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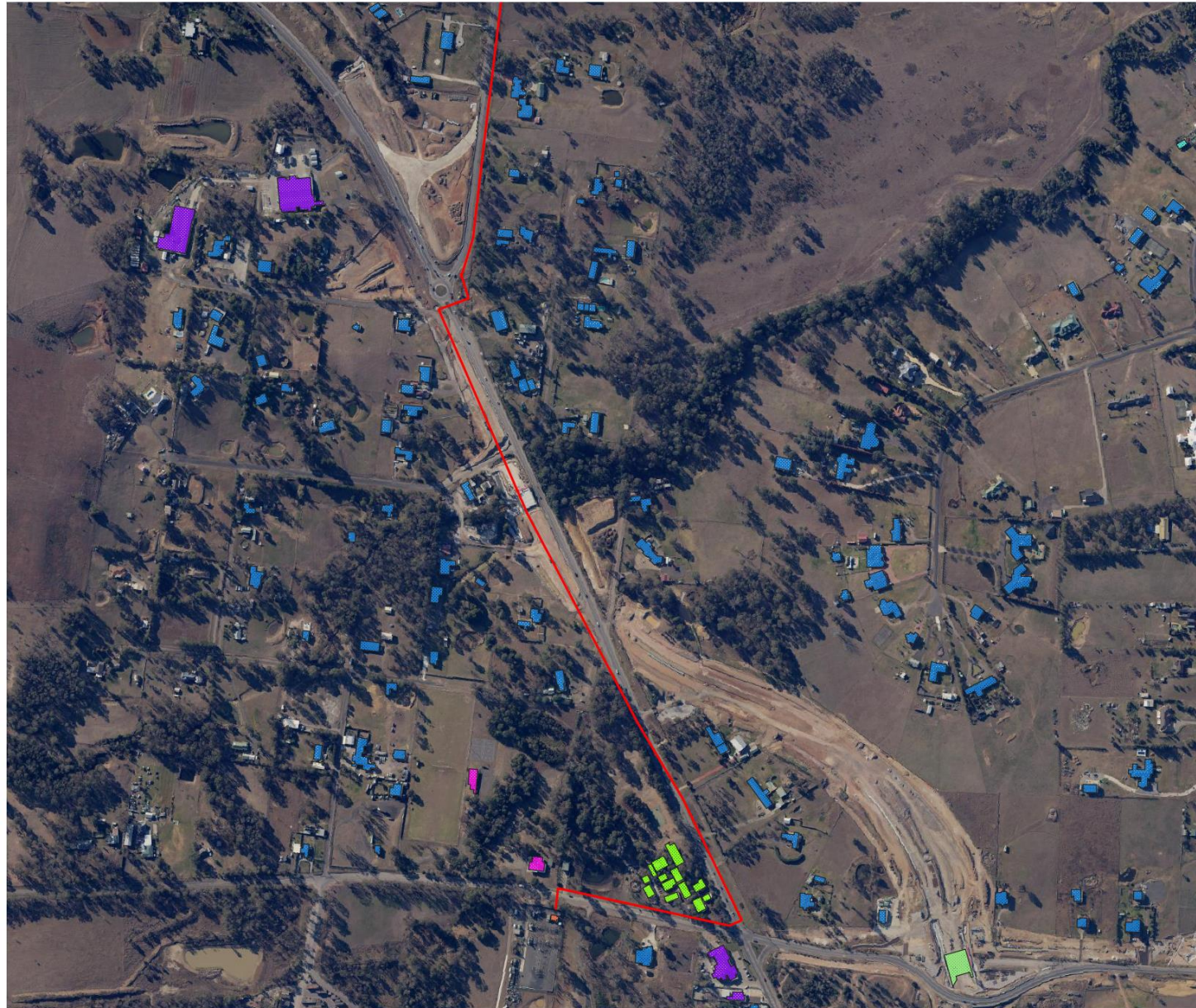
- Kiosk/Substation
- Project Route
- - - Approx alignment
- ▭ Airport boundary (Approx)
- Ancillary Site SA-02

Receiver Type

- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare
- State Heritage

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Environmental Control Map- Work Portion 6

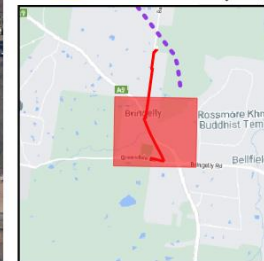
Legend

- Kiosk/Substation
- Project Route
- Approx alignment
- Airport boundary (Approx)
- Ancillary Site SA-02

Receiver Type

- Commercial/Business
- Community Use
- Conservation/National Park
- Industrial/Utilities
- Mixed Use
- Recreational/Open Space
- Residential
- Rural/Primary Production
- Special Use
- Transport/Infrastructure
- Other
- Education
- Childcare
- State Heritage

0 140 280 m



Appendix B Out of Hours Works Protocol

Appendix I DPIE Incident and Non-Compliance Notification Requirements

WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven (7) days after the Proponent becomes aware of an incident. Notification is required to be given under this condition even if the Proponent fails to give the notification required under **Condition A41** or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
 - (a) identify the CSSI and application number;
 - (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
 - (c) identify how the incident was detected;
 - (d) identify when the Proponent became aware of the incident;
 - (e) identify any actual or potential non-compliance with conditions of approval;
 - (f) describe what immediate steps were taken in relation to the incident;
 - (g) identify further action(s) that will be taken in relation to the incident; and
 - (h) identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
 - (a) a summary of the incident;
 - (b) outcomes of an incident investigation, including identification of the cause of the incident;
 - (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
 - (d) details of any communication with other stakeholders regarding the incident.

Appendix J Risk Assessment Workshop

4022-WSA-RA-001

Western Sydney Airport Advanced Enabling Works - Environmental Risk Register



Rev Date: 28/11/2021
Rev: 1.8

Project No :				4022			Prepared By & In Consultation With:			Michelle McNamara (HSEQ Advisor), Joshua Matrese (PE), Des Leyden (PM), Ken Stafford (S to Supervisor), Stephen Scotney (HSEQ Manager) and Tom St Vincent Weir (Env Manager)			Project Engineer:		Transport & Utilities Infrastructure			
Project Scope of Work:				The Sydney Metro-Western Sydney Airport project is a new metro rail line from St Marys to Aerotropolis. Excavation of the tunnels and underground stations will be undertaken by a combination of Road Headers and Tunnel Boring Machines (TBM) both of										Project Manager:		Des Leyden		
Project Risk																		
Risk ID	Risk Type	Project Activities (activities/tasks)	Project Phase	Activity Location	Hazard/Aspect	Hazard Category	Hazard Classification Identify the potential hazards associated with the work activity / task (i.e. what can cause harm)	Risk Impact	Life	Consequence	Risk Class	Critical Controls (Preventing the event or mitigating the consequences of the event - Elimination, Substitution, Isolation, Engineering)	Additional Controls (Proposed additional control(s) to reduce risk as far as reasonably practicable - Administrative, PPE)	Likelihood	Consequence	Risk Class	Risk Owner(s)	Date of Next Review
7	Community	Community Interaction	Project lifecycle	All Works	<ul style="list-style-type: none">Restricted accessGeneral disruptionNoise pollutionProperty damageVibration	11. Project risks	11.2 Contract risks	<ul style="list-style-type: none">Negative Community InteractionLoss of reputationLoss of potential future projectsCommunity physically striking staffCommunity throwing objectsAggression towards Traffic Controllers/other workersCommunity action to delay works	L3 Possible	C3 Major	High	<ul style="list-style-type: none">Steel road plates to be used to assist residents enter/exit driveways as requiredTraffic signs to be used to assist vehicles enter/exit driveways and pedestrian/cyclist managementConsultation with property ownersRespect hours & restrict working hoursMinimise noise to residential areas (e.g. homes/businesses). No foul language/shouting. Do not leave plant/vehicles running unnecessarily.	<ul style="list-style-type: none">OOHW permit in placeRemain calm and polite to irritate members of the public and provide Sydney Metro community number.Community Complaints ProcedureCommunity Interaction on to be highlighted at Project InductionRegular updates and notification with affected stakeholdersHighly sensitive live work areas (Kent Rd, Gipps Street etc.) during daily Pre-shiftsAppropriate signage in place to clearly indicate site and access requirements.Access plans & TCPs	L5 Rare	C3 Major	Medium	Project Manager / SM Comms rep.	/02/2022
9	Health & Safety / Environment	Traffic Signage	Project lifecycle	All Works	<ul style="list-style-type: none">Inadequate consideration of traffic staging results in restricted work space and/or narrow streetsConfusion on vehicle clearances and road limits leading to congestionUnsafe queue lengthsCars parking in live lane of trafficMachine slewing across live traffic lane.	8. Site	8. workspace Hazards	<ul style="list-style-type: none">Traffic/cyclist/pedestrian accidents	L3 Possible	C2 Severe	High	<ul style="list-style-type: none">Safety barriers/fencing to delineate worksitePortable kerb ramp for delineated route cycle and/or pedestrian routesPost live communication on between operators both sending traffic, 2 way radios to be used.If live lane to be used for slewing machine. No traffic to be sent without Excavator operator communication.	<ul style="list-style-type: none">Construction staging protocol - Communications with the community (SMW managing comms)No construction on work on roads without approved Construction Traffic Management Plans (CTMP), Traffic Guidance Schemes (TGS), Vehicle Movement Plan (VMP), Pedestrian Movement Plan (PMP) in accordance with RMS Specification G10 and AS17 2.3, Traffic Control s Works Test Manual.Road Occupancy Licence (ROL) or Council/Authority (WSA etc) approved where appropriate.Appropriate signageIf cars are parked unsafely or blocking traffic, police to be contacted and cars to be towed if required.Considered planning and signage directly with affected residents and businessesCommunication with community rep and residents.	L1 Unlikely	C Moderate	Medium	Project Manager / Traffic Manager	/02/2022
18	Health & Safety / Environment	Using hazardous substances for various construction activities	Project lifecycle	All Works	<ul style="list-style-type: none">Hazardous chemicals or materials	3. Chemical	3.2 Exposure Hazards	<ul style="list-style-type: none">Injury to persons from handling, chemical burns.Damage to environment from incorrect disposal methodsEnvironmental incidentIncorrect handlingContact with sensitive body partFuel spillsChemical StorageDirty waterContamination of the environment	L3 Possible	C Moderate	Medium	<ul style="list-style-type: none">Implement all relevant mitigation measures as per CEMP - Soil and waterAll fuel to be stored in bunded storage areas - all hazardous substances to be stored in defined storage areasUse hazardous materials container/ bunded pallets to store chemicals (access to be restricted)Separation of material stockpiles & chemicalsBunded storage areas (>110% capacity of largest volume container) - or environmental controls for drainage (Site compound)	<ul style="list-style-type: none">Hazardous Substances ProcedureCorrect handling / use in accordance with current SDS and risk assessments for all hazardous chemicalsFirst Aid & spill kits available onsiteTrain personnel on correct handling of hazardous materials. Refer to SWMS to identify the necessary controls for the required materials.Fire Extinguishers located in close proximity to hazardous substancesHazardous materials registers and SDS must be available on siteWear Appropriate PPE - as per SDS	L5 Rare	C Moderate	Low	Project Team / Supervisor	/02/2022
22	Environmental	Fuelling / refueling of Plant & Equipment	Project lifecycle	All Works	<ul style="list-style-type: none">Fuel / Oil	3. Chemical	3.2 Exposure Hazards	<ul style="list-style-type: none">Fuel or oil spillPollution of nearby waterwaysEnvironmental incidentSoil degradation or contamination	L3 Possible	C Moderate	Medium	<ul style="list-style-type: none">Implement all relevant mitigation measures as per CEMP - Soil and waterEquipment to be turned off while refuelingEnsure there is adequate ventilation during refueling processSmoking and hot works to be prohibited in refueling areasBunded storage areas (>110% capacity of largest volume container) - or environmental controls for drainage (Site compound)Refueling areas - Ensure spill kits are in place and fully stockedNo refueling within 20m of waterways/drainage lines/sensitive areasUse funnels at all timesRefueling will be attended at all timesNo refueling within vicinity of vegetation	<ul style="list-style-type: none">Emergency Preparedness and Response procedureSpill kits available to contain spillsSDS availableTraining and toolboxPPE requirements as per SDS	L5 Rare	C Moderate	Low	Supervisor / Operator	/02/2022
23	Health & Safety / Environment	Construction works adjacent to buildings / structures	Project lifecycle	All Works	<ul style="list-style-type: none">Damage to buildings/structuresWorking in close proximity to trees / OH poles / noise-walls along trench alignment	8. Site	8. workspace Hazards	<ul style="list-style-type: none">Damage to propertyDamage to existing infrastructure - noise-walls, OH poles	L3 Possible	C Moderate	Medium	<ul style="list-style-type: none">Vibration monitoringGeotechnical a groffMaintain sufficient easement to propertiesATF fencing / physical barrier to delineate the worksiteTree protection / arborist / NDD where requiredTWD where required	<ul style="list-style-type: none">Pre & post dilatation reportsComply with relevant management plans, sub-plans and procedures (eg CEMP, ECPs etc.)	L5 Rare	C Moderate	Low	Project Team / Supervisor	/02/2022
26	Health & Safety / Environment	Rock breaking / saw cutting	Project lifecycle	All Works	<ul style="list-style-type: none">Rock breaking / saw cuttingGeneral disruptionNoise pollutionProperty/structure damageVibration	1. Mechanical	11.7 Environmental risks	<ul style="list-style-type: none">Negative Community interactionHearing damageProperty damage, community issuesImpact to heritageDamage to nearby structures - noise-walls	L2 Likely	C3 Major	High	<ul style="list-style-type: none">CEMP - Noise and VibrationProtect services and support where required.Ongoing assessment on site by crew / competent personsVibration monitoring where requiredExclusion zone around rock breaking activitiesNoise blankets during night shift for noisy worksNoisy works to be completed during approved hours in the OOHW permit.Respect breaks for noisy activitiesNoise Monitoring where required	<ul style="list-style-type: none">Dilatation report completed prior to rock breaking activities begin - where required (SM)	L5 Rare	C3 Major	Medium	Project Team / Supervisor / Operator / Spiller	/02/2022
31	Environmental	Working in identified contaminated areas (AECs) / unexpected contamination	Project lifecycle	All Works Portion 2 - MC Services Facility Portion 3 - Cnr Gipps St / Cadell Rd Portion 4 - Unnamed Lane - Scrap yard Portion 5 - BCR 11th	Encountering contaminated soil	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none">Inappropriate spoil management resulting in non-compliant waste disposalContaminant mobilisation leading to contamination of surrounding environmentHuman Health impacts	L3 Possible	C Moderate	Medium	<ul style="list-style-type: none">Implement all relevant mitigation measures as per CEMP - Soil and water, WRMP.Unexpected contamination and Asbestos Finds ProcedureCorrect spoil segregation and stockpiling (segregated/contained/covered/signposted)Site investigations - soil / waste classification in early works (initial sampling in AECs) prior to excavation.Materials tracking system	<ul style="list-style-type: none">Technical guidance from contaminated lands consultantSoil & air test on (appropriate quantities tested as per environmental guidelines)Spill management planUF protocolHave disposal facilities arranged prior to works	L5 Rare	C Moderate	Low	Project Team / Supervisor	/02/2022
32	Health & Safety / Environment	Dewatering trench / excavations / joint bays	Project lifecycle	As required	<ul style="list-style-type: none">EngulfmentRisk of drowningEnvironment incidentContaminated soil	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none">Contaminated / dirty water entering drainwaysInjuryUnapproved discharges	L2 Likely	C3 Major	High	<ul style="list-style-type: none">Implement all relevant mitigation measures as per CEMP - Soil and waterNo direct discharges permitted.Water to be used for dust suppression, material conditioning or watering of vegetation onlyAll groundwater to undergo onsite testingApproximate depth of water to be assessed prior to removal. Assessment for the requirement of full protection prior to dewatering	<ul style="list-style-type: none">Dewatering permit to be completedAdhere to EWMS and CEMP	L5 Rare	C3 Major	Medium	Project Team / Supervisor	/02/2022

	Environmental	General construction including excavating, saw cutting, boring	Project Lifecycle	All Works	Air Quality impacts / impacts on sensitive receptors	11. Project risks	11.7 Environmental risks	Air quality impacts to adjacent residents (dust emissions)	L3 Possible	C Moderate	Medium	<ul style="list-style-type: none"> Implement all relevant mitigation measures as per CEMP - Air Quality All loaded trucks to be covered. Dust suppression at compounds and work sites Turning off plant and equipment when not in use. Max 10km/hr on unsealed roads Sweeper engaged to manage mud tracking Wheel washes implemented where necessary. Correct stockpile management 	<ul style="list-style-type: none"> Stop works if dust can't be controlled. Visual monitoring of dust Consideration of forecast meteorological conditions 	L Unlikely	C Moderate	Medium	Project Team / Supervisor	/02/2022
35	Environmental	HDD / Bed / Case Bore	Project Lifecycle	All Works	Frac Out of HDD / Bed / Case Bore	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none"> Loss of drilling fluids through uncontrolled frac out Run-off of drilling fluids from entry/exits Environmental incident Uncontrolled grouting fluid discharge 	L3 Possible	C2 Severe	High	<ul style="list-style-type: none"> Frac out MP to be implemented Add tonal controls installed as required in ESCP Pressures of drilling fluids to be monitored by HDD/ bore supervisor at all times Vac truck onsite at all times for clean up if required (x2) If frac out occurs, stop all activities and risk assess location of plant and personnel access for clean up 	<ul style="list-style-type: none"> Data led HDD / Bore Methodology submitted from subcontractors, approved with steps for controlling risk of occurring 	L Unlikely	C3 Major	Medium	Project Team / Supervisor	/02/2022
36	Environmental	HDD / Bed / Case Bore	Project Lifecycle	All Works	Spillage of Drilling Fluid	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none"> Run-off of drilling fluids from entry/exits Environmental incident 	L Unlikely	C3 Major	Medium	<ul style="list-style-type: none"> HDD / bore supervisor regularly monitor fluid levels in entry & exits Vac truck available to remove fluids if needed Sand bags / sediment controls circling exit point of HDD to prevent uncontrolled fluid discharge Add tonal controls installed as required in ESCP Vac truck available to remove drilling fluids, dispose at EPA approved facility 	<ul style="list-style-type: none"> Data led HDD / Bore Methodology submitted from subcontractors, approved with steps for controlling risk of occurring 	L5 Rare	C3 Major	Medium	Project Team / Supervisor	/02/2022
40	Environmental	Working in close proximity to vegetation / Vegetation clearing and trimming	Project Lifecycle	All Works	<ul style="list-style-type: none"> Trees Falling objects Unapproved impacts to vegetation 	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none"> Damage to trees / branches Environment incident Negative community interaction Unapproved impacts to protected vegetation / fauna 	L3 Possible	C3 Major	High	<ul style="list-style-type: none"> Implement all relevant mitigation measures as per CEMP - Flora and Fauna Liaise with SM (including regards to salvage of timber) Physical tree protection where required as per tree arborist report Spotter must be in place Setup of delineation & signage during site setup around flagged vegetation Retained vegetation to be delineated prior to clearing Ecologist must undertake pre-clearing inspection prior to any vegetation clearing 2 stage clearing adjacent to habitat trees. 	<ul style="list-style-type: none"> Obtain tree pruning permit and submit HP Engage Ecologist prior to works All reports and requirements to be communicated to all personnel and specific requirements completed daily pre-starts. Toolbox and training Environmental Control Maps Unexpected finds procedure 	L5 Rare	C3 Major	Medium	Project team / Site supervisor	/02/2022
49	Environmental	General Construction Works	Project Lifecycle	All Works	Heritage - Encountering unexpected finds (Aboriginal and non-aboriginal heritage)	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none"> Damage to archaeological find Heritage incident 	L3 Possible	C3 Major	High	<ul style="list-style-type: none"> Stop works and follow Unexpected Finds Procedure. Adhere to specific minimum working distances and vibration limits 	<ul style="list-style-type: none"> Engage archaeological heritage consultant All persons to be briefed on heritage requirements during inductions 	L Unlikely	C3 Major	Medium	Project Team	/02/2022
50	Environmental	Excavation / hammering	Project Lifecycle	All Works	Excessive noise and vibration	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none"> Noise and vibration impacts to residents / structures / Existing utilities 	L3 Possible	C3 Major	High	<ul style="list-style-type: none"> Implement all measures in DNVS and NVMP Consultation with utility providers/asset owners. Obtain before you dig assessments Noise and vibration monitoring as required 	<ul style="list-style-type: none"> Toolbox and training Stop works if exceedances evident/likely 	L Unlikely	C3 Major	Medium	Project Team	/02/2022
51	Environmental	Failure to identify Environmental Requirements	Project Lifecycle	All Works	Poor coordination / Liaising with relevant stakeholders	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none"> Legal ramifications to the company. Financial penalties. Non favourable company publicity, which may have an effect on future opportunities. 	L Unlikely	C2 Severe	High	<ul style="list-style-type: none"> Work in accordance with approved CEMP, EWMS, ESCPs etc 	<ul style="list-style-type: none"> CEMP Early and ongoing engagement with relevant stakeholders Project management to review Constructon Environmental Management Plan bi-annually. 	L5 Rare	C2 Severe	Medium	Environmental Manager / Project Manager	/02/2022
53	Environmental	Protection of water ways	Project Lifecycle	All Works	Soil, water and contamination of waterways	11. Project risks	11.7 Environmental risks	<ul style="list-style-type: none"> Damage to environment through contamination / pollution of water ways 	L3 Possible	C Moderate	Medium	<ul style="list-style-type: none"> Implement all relevant mitigation measures as per CEMP - Soil and water All controls to be installed in accordance with approved PESCP Ensure Spill kits are in place Correct stockpile management Management of mud tracking on public roads 	<ul style="list-style-type: none"> CEMP ESCPs Toolbox and training Environmental Control Maps 	L Unlikely	C3 Major	Medium	Supervisor	/02/2022

Appendix K Sydney Metro Aboriginal Cultural Heritage Management Plan

Appendix L Sydney Metro Discharge and Reuse Procedure



Water Discharge & Reuse Procedure

SM-17-00000098

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Manager, Environment
System Owner:	Executive Director, Safety, Sustainability & Environment
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Table of contents

1.	Purpose & Scope	3
2.	Accountabilities	3
3.	Definitions.....	3
4.	Water Discharge and Reuse Procedure.....	5
4.1.	Water Management.....	5
4.2.	Legislative Requirements.....	5
4.3.	Water Management and Discharge	6
4.4.	Requirements for Discharge to Waters	7
4.5.	Calibration.....	8
4.5.1.	Treating Water Prior to Discharge	8
4.6.	Requirements for Discharge to Land	9
4.6.1.	Determining a Suitable Discharge Location.....	9
4.6.2.	Criteria for Discharge to Land	9
4.7.	Reuse on Site.....	10
4.7.1.	Criteria for Reuse on Site.....	10
4.8.	Discharging Water.....	10
4.8.1.	Monitoring and Maintenance.....	12
4.8.2.	Record Keeping	12
5.	Related documents and references	13
6.	Superseded documents	13
7.	Document history.....	13

Figures

Figure 1: Process for testing water to determine options for removal, reuse, treatment or discharge	11
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Tables

Table 1: POEO classification of offences.....	5
Table 2: Criteria for Discharge to Waters.....	7
Table 3: Salinity and TSS	7
Table 4: Treating water to discharge	8

1. Purpose & Scope

The purpose of this Procedure is to provide guidance to site personnel for managing, discharging and reusing excess water on Sydney Metro construction sites. This Procedure includes references to relevant industry guidelines but is not intended to replace them, nor does it override the relevant legislative and regulatory requirements.

Principle Contractors may be required to develop their own procedure that is consistent with this document via clause 3.1(f) of the Construction Environmental Management Framework (CEMF).

2. Accountabilities

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

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

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

3. Definitions

All terminology in this Procedure is taken to mean the generally accepted or dictionary definition. Terms and jargon specific to this Procedure are defined within the [Sydney Metro Glossary](#), or are listed below.

	Definitions
The Blue Book	<i>Managing Urban Stormwater: Soils & Construction</i> 2004, Landcom.
CEMP	<i>Construction Environmental management plan</i>
Environment Manager	Contractor Environment Manager.
EPA	NSW Environment Protection Authority
EPL	Environment protection licence issues in accordance with the POEO Act by the EPA
pH	The measure of the acidity or alkalinity of a solution.
POEO Act	Protection of the Environment Operations Act 1997.
NATA	National Association of Testing Authorities, Australia
NTUs	Nephelometric turbidity units
TSS	Total Suspended Solids.
Waters	(as defined in the POEO Act) means the whole or any part of: <ul style="list-style-type: none"> a) any river, stream, lake, lagoon, swamp, wetlands, unconfined surface water, natural or artificial watercourse, dam or tidal waters (including the sea), or b) any water stored in artificial works, any water in water mains, water pipes or water channels, or any underground or artesian water.

<p>Water pollution or Pollution of waters</p>	<p>As defined in the POEO Act water pollution or pollution of waters means:</p> <ul style="list-style-type: none"> a) placing in or on, or otherwise introducing into or onto, waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, so that the physical, chemical or biological condition of the waters is changed, or b) placing in or on, or otherwise introducing into or onto, the waters (whether through an act or omission) any refuse, litter, debris or other matter, whether solid or liquid or gaseous, so that the change in the condition of the waters or the refuse, litter, debris or other matter, either alone or together with any other refuse, litter, debris or matter present in the waters makes, or is likely to make, the waters unclean, noxious, poisonous or impure, detrimental to the health, safety, welfare or property of persons, undrinkable for farm animals, poisonous or harmful to aquatic life, animals, birds or fish in or around the waters or unsuitable for use in irrigation, or obstructs or interferes with, or is likely to obstruct or interfere with persons in the exercise or enjoyment of any right in relation to the waters, or c) placing in or on, or otherwise introducing into or onto, the waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, that is of a prescribed nature, description or class or that does not comply with any standard prescribed in respect of that matter, <p>and, without affecting the generality of the foregoing, includes:</p> <ul style="list-style-type: none"> d) placing any matter (whether solid, liquid or gaseous) in a position where: <ul style="list-style-type: none"> i. it falls, descends, is washed, is blown or percolates, or ii. it is likely to fall, descend, be washed, be blown or percolate, into in to any waters, onto the dry bed of any waters, or into any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted, or e) placing any such matter on the dry bed of any waters, or in any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted, <p>if the matter would, had it been placed in any waters, have polluted or have been likely to pollute those waters.</p>
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4. Water Discharge and Reuse Procedure

4.1. Water Management

During construction there is the potential for sediment laden water to be generated on construction sites. In particular in areas where there is no ground cover, where earthworks have been carried out and in low lying points on the site. It is essential that this sediment laden water is contained and managed on site through suitable erosion and sediment controls and only discharged once it has been treated and tested to ensure there is no harm caused to surrounding waterways and ecosystems.

4.2. Legislative Requirements

The Protection of the Environment Operations Act 1997 (POEO Act) is the key piece of environmental legislation in NSW administered by the Environment Protection Authority (EPA). Offences under this Act are classified into three tiers, with Tier 1 offences being the most serious – attracting up to \$5 million in the case of a corporation and \$1 million for an individual and seven years imprisonment for wilful or negligent harm to the environment.

Table 1: POEO classification of offences

Classification of offence	Description
Tier 1	These offences are the offences under Part 5.2 of the POEO Act 1997 and include the wilful or negligent disposal of waste causing or likely to cause harm to the environment (section 115), wilfully or negligently causing a substance to leak, spill or otherwise escape in a manner that harms or is likely to harm the environment (section 116), and the wilful or negligent emission of an ozone-depleting substance in breach of the Ozone Protection Regulations in a manner that harms or is likely to harm the environment (section 117).
Tier 2	Tier 2 offences are all other offences under this Act or the regulations. This includes carrying out a scheduled activity without an environment protection licence (EPL) (section 49(2)), failing to comply with a condition of an EPL (section 64(1)), pollution of waters (section 120) and failing to notify a pollution incident (section 152). The maximum penalties for the Tier 2 offence of failing to notify a pollution incident are \$2 million in the case of a corporation and \$500,000 in the case of an individual. The maximum penalties for Tier 2 offences other than failure to notify pollution incidents are \$1 million in the case of a corporation and \$250,000 in the case of an individual. Further daily penalties apply to continuing offences.
Tier 3	Tier 3 offences are tier 2 offences that may be dealt with under Part 8.2 by way of penalty notice

Under section 120 of this Act, any unlicensed water pollution event, no matter how minor, is illegal. It is a defence against prosecution under section 120 of the POEO Act if the pollution was regulated by an Environment Protection Licence (EPL) and the conditions of that EPL relating to pollution of waters were not contravened. In the absence of any specific EPL provision, however, to avoid causing pollution and breaches of Section 120, any water discharged from site must be of the same quality, or better, than the quality of the receiving waters at the time of discharge.

Offences attracting special executive liability are dealt with under Section 169 of the POEO Act. Section 169 specifically states that if a corporation wilfully or negligently causes any substance to leak, spill or otherwise escape (whether or not from a container) in a manner that harms or is likely to harm the environment or pollutes any waters each person who is a director of the corporation or who is concerned in the management of the corporation is taken to have contravened the same provision, unless the person satisfies the court that the person, if in such a position, used all Due Diligence to prevent the contravention by the corporation.

4.3. Water Management and Discharge

It is essential that the quality of the receiving waters is established through background monitoring and sampling, prior to any discharge from site, so that the potential impact of discharge water can be determined. Monitoring of the receiving waters must be undertaken prior to any land disturbance works (to establish a baseline) as well as during construction.

It is also essential that water management standards, and particularly erosion and sediment controls, are implemented to control and treat water. Landcom's Managing Urban Stormwater: Soils & Construction 2004 (The Blue Book) is considered a best practice guideline for erosion and sediment control on construction sites in NSW. If implemented, The Blue Book will help mitigate the impacts of land disturbance activities on soils, landforms and receiving waters and minimise the potential for water pollution events to occur.

The Water quality criteria and testing and treatment techniques in this procedure are based on The Blue Book. However, compliance with The Blue Book does not, of itself, provide any defence to an alleged breach of section 120 of the POEO Act. Examples of situations where compliance with The Blue Book could still lead to a breach of section 120 are as follows:

- Water discharged with TSS below 50mg/L may still cause pollution and breach section 120, if the receiving waters have a TSS less than 50mg/L at the time the discharge occurs.
- Appropriate erosion and sediment controls are in place, but a rainfall event occurs beyond the design capacity of those controls.
- Should a water pollution incident occur, being able to demonstrate due diligence in the implementation of environmental controls, and particularly erosion and sediment controls, may provide a defence against prosecution. Due diligence may be recognised if the proponent is able to demonstrate that erosion & sediment controls have been implemented in accordance with the requirements of The Blue Book. The Contractor must satisfy itself that appropriate management controls have been developed, implemented, maintained and documented to establish a due diligence defence.

All water discharges must be documented using the [Water Discharge or Reuse Approval Form](#) or site-specific equivalent. Discharge is not permitted until the Contractor Environment Manager or nominated representative has signed the discharge form. Note that in some cases the Sydney Metro Manager Environment or the Environmental Representative may be required to sign off the discharge form.

This procedure is not used for discharging water where the activity is covered by an EPL. The licence holder will have their own procedure covering the process for discharging water that addresses any site specific environmental conditions.

4.4. Requirements for Discharge to Waters

Water to be discharged must be tested and, if required, treated to ensure that it meets water quality criteria and that pollution of the receiving waters does not occur. Results of testing and details of any treatment undertaken must be noted on [Water Discharge or Reuse Approval Form](#).

Note that an EPL may authorise discharge of water from specific locations or premises, and establish criteria that differ from those given in this Procedure. In such circumstances the EPL, and any conditions and criteria of that EPL, take precedence over this Procedure. Before water can be discharged to any receiving waters (whether on or off site), it must as a minimum meet the following criteria.

Table 2: Criteria for Discharge to Waters

Parameter	Criterion	Method	Time prior to discharge
Oil and grease	No visible	Visual inspection	< 1 hour
pH	6.5-8.5	Probe/meter ¹	< 1 hour
Total Suspended Solids (TSS)	< 50mg/L ²	Meter/grab sample ³	< 1 hour/< 24 hours

If the criteria above are not met, the water will have to be treated and retested prior to discharge (see [Water Management and Discharge](#)). If all criteria above are met then the water may be authorised for discharge by the Manager Environment (refer to [Calibration](#)).

Table 3: Salinity and TSS

1. Salinity	<p>Salinity is determined by measuring the electrical conductivity (EC) of the water, using a meter. Setting an acceptable criteria range for salinity of discharge water is dependent on the salinity of the receiving waters and must be determined and applied on a site-specific basis following background water quality monitoring. Measuring discharge waters for salinity shall only be undertaken if required by:</p> <ul style="list-style-type: none"> the Conditions of Approval; an EPL; or the particular conditions of the site (soil or geology) or the receiving waters.
2. Correlating Total Suspended Solid (TSS) with Turbidity	<ul style="list-style-type: none"> Consideration may be given to establishing a site-specific relationship between total suspended solids concentration (TSS) and turbidity, measured in nephelometric turbidity units (NTU). This allows the TSS to be inferred from an NTU reading. The benefit of using NTU is that it can be quickly measured on site with a hand-held meter, whereas water quality meters that measure TSS are expensive and the results from samples sent for laboratory analysis will not be available immediately. However, the relationship between TSS and NTU is highly dependent on soil type and site activities (i.e. earthmoving, extractive works, rock cutting or grinding) and NTU is affected by factors other than suspended solids, such as colour (e.g. tannins may alter the NTU reading). As such, a correlation curve (i.e. across a range of readings) must be determined between TSS and NTU that is specific to the site and cannot be applied to other sites. The correlation must be determined via laboratory analysis, by a NATA-accredited laboratory. Thorough records of the site-specific correlation must be kept, and any recommendations and/or limitations should be documented as part of the CEMP (For further information and guidance on correlating TSS with NTU refer to Appendix E of <i>The Blue Book</i>).

¹ Litmus paper and pool testing kits are not to be used.

² As discussed in Section 4, a more stringent TSS criterion may need to be adopted in certain situations.

³ Samples must be analysed at a NATA accredited laboratory.

4.5. Calibration

The goal of calibration is to minimise any measurement uncertainty by ensuring the accuracy of testing equipment which may drift over time. To be confident in the results being measured there is an ongoing need to service and maintain the calibration of equipment for reliable, accurate and repeatable measurements.

Due to the variety of water quality instruments available, it is not practical to provide instrument specific advice on storage, calibration and maintenance in this procedure. Before taking an instrument into the field, the operator should be familiar with the contents of the operating manual for that specific instrument, and ensure that it is stored, calibrated, maintained and used as per manufacturer's instructions. Detailed records of calibration and maintenance must be kept.

4.5.1. Treating Water Prior to Discharge

In order to meet EPA guidelines, TSS, pH levels and oil and grease must meet the required levels listed in table 4 below. Further water treatment may be required for other impurities not listed which may exist due to soil contamination or other factors. Based on the volume of water output and levels of contamination, methods used to treat water can vary in complexity and should be risk assessed and implemented by a competent person.

Best practice methods for water treatment of stormwater for construction sites can be found in Managing Urban Stormwater Soils and Construction Volume 1 (the Blue Book). The method for water treatment selected by the contractor must be documented in a procedure which includes any relevant Safety Data Sheets and safe handling and storage requirements for the substances used. All hazardous substances and contaminants must be subject to a health risk assessment. For further details please refer to the Principal Contractor Health and Safety Standard for occupational health and hygiene requirements.

Table 4: Treating water to discharge

1. Oil and grease	<ul style="list-style-type: none"> Examine surface of water immediately prior to discharge for evidence of oil and grease (e.g. sheen, discolouration).
2. pH Levels	<ul style="list-style-type: none"> If pH is outside the range 6.5-8.5 the water will need to be neutralised. Re-test the water pH following treatment – repeat as necessary, until the acceptable pH 6.5 – 8.5 range is reached.
3. Total Suspended Solids (TSS)	<ul style="list-style-type: none"> If TSS are greater than 50mg/L, the sediments need to settle to the bottom or be removed. This can be achieved via the following methods: <ul style="list-style-type: none"> Natural settlement – this could take a long time or not occur at all (e.g. with dispersible clay soils). dependent on soil type and other characteristics, (refer to <i>The Blue Book</i>, Chapter 3 for further information). Flocculation – chemical treatment with a flocculant (e.g. gypsum). If the flocculant is being applied manually, an even application over the surface of the water is essential. If an automated dosing basin is used other flocculants such as Polyaluminium Chloride (PAC) and alum (aluminium sulphate) might also be suitable for use in this system. Only environmentally safe flocculants are to be used, based on the Environment Manager's review of Safety Data Sheet (SDS) information. Filtration – pumping or gravity feeding the water through a filter medium (e.g. geofabric) to another storage area (e.g. container or sediment basin) to remove sediment. The filter medium should be disposed of to a suitable facility. Re-testing of water is required once treatment has been undertaken to ensure criterion for TSS is met.

Following treatment and retesting to ensure compliance with the criteria the water may be authorised for discharge by the Environment Manager (see section 4.5).

4.6. Requirements for Discharge to Land

The objective of discharging water to land (within the site boundary) is to allow the water to infiltrate into the ground, thus avoiding direct discharge to, or pollution of, waters. Any suspended solids in the water are deposited either on the surface or retained in underlying soil layers, so the TSS criterion does not apply. However, to avoid impacts to vegetation or soil contamination pH testing and a visual inspection for oil or grease must be undertaken (refer to [Criteria for Discharge to Waters](#) for criteria and testing methods).

4.6.1. Determining a Suitable Discharge Location

Consideration must be given to the following factors when determining a suitable offsite location:

- (a) Direction of groundwater flow – recharging groundwater that will subsequently flow either back onto site, into excavations or low lying areas should be avoided. This information should be available in the contamination site investigation reports and groundwater monitoring data if undertaken as part of planning approval.
- (b) Erosion – the receiving area must have complete groundcover (e.g. grass) and established vegetation to minimise the risk of erosion. Guidance on best practice for reducing the risk of erosion can be found in Managing Urban Stormwater available here: <https://www.environment.nsw.gov.au/resources/water/BlueBookVol1.pdf>.
- (c) Flora and fauna – water must not be discharged to areas where there is potential to have an adverse effect on any flora or fauna species. Information on ecological surveys for flora and fauna can be found in the Environmental Impact Statement and the Fauna and Flora Management Plan.
- (d) Flooding – the receiving area must have the infiltration capacity to receive the volume of water to be discharged, without causing flooding or significantly increasing the risk of flooding should subsequent rainfall occur. This information can be found in the Flood Modelling undertaken for the Environmental Impact Statement.

4.6.2. Criteria for Discharge to Land

Discharge to land within the site boundary shall only occur if:

- (a) There is no visible oil or grease (otherwise treat in accordance with [Treating Water Prior to Discharge](#)).
- (b) The pH levels are between 6.5 and 8.5 (otherwise treat in accordance with [Treating Water Prior to Discharge](#)).
- (c) No surface runoff will be generated from the discharge and there is no potential for discharged water to reach any watercourse (within or outside the site).
- (d) No erosion is caused from the discharge and appropriate erosion and sediment control are installed in accordance with *The Blue Book*.

- (e) All discharge water can be wholly contained within the site boundary.

If all criteria above are met then the water may be authorised for discharge to land by the Environment Manager – go to [Reuse on Site](#).

4.7. Reuse on Site

Water may be reused on site, for example, for dust suppression, to assist with compaction or for watering landscape/bush regeneration areas. As with discharges to land, the TSS criterion does not apply as water will not be discharged to any watercourse. However, pH testing and a visual inspection for oil or grease must be undertaken (refer to [Criteria for Discharge to Waters](#) see section 4.4.1.1 for criteria and testing methods).

4.7.1. Criteria for Reuse on Site

Reuse on site shall only occur if:

- (a) There is no visible oil or grease (otherwise treat in accordance with [Treating Water Prior to Discharge](#)).
- (b) The pH levels are between 6.5 and 8.5 (otherwise treat in accordance with [Treating Water Prior to Discharge](#)).
- (c) No erosion is caused from the discharge.
- (d) Any runoff generated by the reuse is controlled entirely within the site boundary and appropriate sediment controls are installed and maintained in accordance with *The Blue Book*.

If all criteria above are met then the water may be authorised for reuse by the Environment Manager – go to [Reuse on Site](#).

4.8. Discharging Water

Once water has been tested and meets all the criteria for discharge to either waters or land, or for reuse on site, the Nominated Representative must authorise the discharge by signing the [Water Discharge or Reuse Approval Form](#). If required, the Sydney Metro Manager Environment or the Environmental Representative may also sign off the form prior to commencing the discharge.

Discharge can use a siphon system or a pump, with a priority on delivering low energy flows to downstream drainage lines, watercourses or land. The flow from the outlet must be directed onto a non-erodible surface or material and, for discharges to waters, sufficient energy must be dissipated before the flow enters the natural watercourse to ensure no erosion shall occur.

The pump inlet must be placed so that it will not disturb or take in any sediment or sediment laden water. The discharge must be monitored throughout to ensure that the water being syphoned or pumped:

- Complies with the discharge criteria.
- Does not come into contact with any soil or exposed surfaces before discharging.

- Does not mix with any sediment laden/untested water at either the inlet or outlet.

Water must never be discharged or reused onsite in a manner that exceeds the capacity of sediment controls and/or generates runoff with the potential to discharge from site.

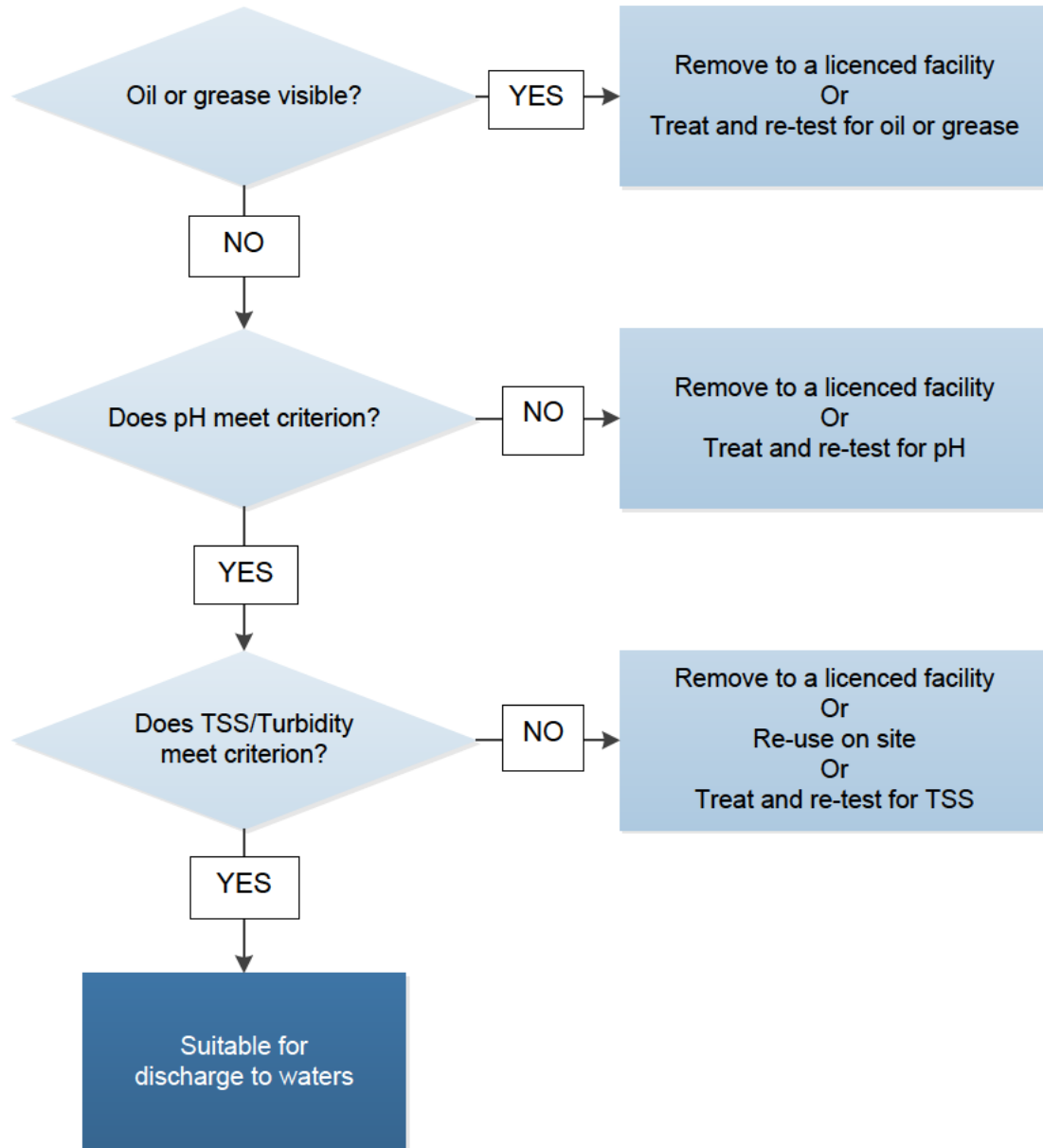


Figure 1: Process for testing water to determine options for removal, reuse, treatment or discharge

4.8.1. Monitoring and Maintenance

All sediment controls or areas that store water must be inspected to assess their integrity and capacity, as a minimum at the following times:

- Weekly during dry weather;
- Prior to forecast rainfall events; and
- During rainfall events (as often as possible), within 24 hours or as soon as possible following a rainfall event when the site is unattended (e.g. on weekends).

During any offsite or onsite discharge, regular monitoring must occur to ensure compliance with the requirements specified in this Procedure.

All rain event data shall be recorded for the site, including rainfall quantities from each rain event. Rainfall data should be gathered from the nearest monitoring station to the project.

4.8.2. Record Keeping

Records of all water discharges must be documented using the [Water Discharge or Reuse Approval Form](#) or site-specific equivalent. Records of all monitoring and maintenance measures must also be kept, on the site-specific environmental inspection checklist and other relevant document(s) (e.g. Site Foreman's diary).

5. Related documents and references

Related Documents and References

- [Sydney Metro Environment and Sustainability Policy](#)
- [Construction Environmental Management Framework](#)
- [Water Discharge or Reuse Approval Form](#)
- Due Diligence Standard (TBC)

6. Superseded documents

Superseded Documents

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

7. Document history

Version	Date of approval	Notes
1.0	31 March 2015	New document.
2.0	7 July 2016	IMS Review.
3.0	27 March 2019	IMS Review.

Water Discharge or Reuse Approval Form

Location, quantity of water and proposed action									
Location of water to be removed:								Reference No:	
Approval requested by:								Date:	
Proposed discharge/reuse:		<input type="checkbox"/> Discharge to waters		<input type="checkbox"/> Discharge to land		<input type="checkbox"/> Reuse on site		Quantity (L):	
Details of discharge/reuse: (method, location, controls, etc)									
Test method									
<input type="checkbox"/>	Probe/meter:				Test record/Laboratory report No:				
<input type="checkbox"/>	Grab sample:				Equipment calibration prior to test:		Yes <input type="checkbox"/> No <input type="checkbox"/> (if no state why below):		
Test performed/sample collected by:									
Test results									
Location (specific descriptor)	Date	Time	Is this a re-test?	Oil & grease visible (Y/N)	pH 6.5 – 8.5 Reading	TSS/Turbidity <50mg/L / ___ NTU1 Reading	Option 2 A,B,C,D,E	Notes, actions or treatment required	
1. Criteria for turbidity must be determined from site specific correlation between TSS and turbidity – refer to SM-17-00000098 Water Discharge and Reuse Procedure for details.									
2. Select one:		A = Remove to licensed facility		B = Reuse on site		C = Discharge to land		D = Discharge to waters	E = Treat and re-test

Option A: Remove to licensed facility			
Water to be collected and removed from site by:			
Water to be transported to (name & location of the licensed facility):			
Option B: Re-use on site (including into holding pits/tanks, dust suppression)			
Re-use will be applied to an area that is effectively secured with appropriate downstream sediment controls and will not generate off-site runoff.			Yes <input type="checkbox"/> No <input type="checkbox"/>
Option C: Discharge to land			
Discharge location has complete ground cover, such that erosion will not occur and sufficient infiltration capacity to receive quantity of water: Will discharge generate any runoff or create the potential for runoff to reach any watercourse (on or offsite)?			Yes <input type="checkbox"/> No <input type="checkbox"/>
Option D: Discharge to waters			
From visual inspection the quality of the water to be discharged is equally good or better than the quality of the receiving water?			Yes <input type="checkbox"/> No <input type="checkbox"/>
Flow from outlet can be directed onto a non-erodible surface and will not cause scouring or erosion: Could the water come into contact with any exposed soil or potential contaminants before it reaches the water course or discharge point?			Yes <input type="checkbox"/> No <input type="checkbox"/>
Option E: Treat the water then re-test			
Location to be treated (if not in situ):			
Parameter(s) to be treated:			
Detail the treatment to be used including products, quantities and methodology:			
Discharge authorised by:	Position/Organisation:	Signature	Date:
By signing this form the signatory confirms water to be discharged meets the relevant criteria as specified in accordance with the SM-17-0000098 Water Discharge & Reuse Procedure			

Copy to Manager Environment and Environmental Representative and any others as required. Attach site dewatering plan where applicable.

Appendix M Unexpected Contaminated Land and Asbestos Finds Procedure

Sydney Metro Western Sydney Airport, Power Enabling Works

Unexpected Contaminated Land and Asbestos Finds Procedure

4022-WSA-PRO-003

Revision 0.0

29 October 2021

CURRENT DOCUMENT REVISION			PROJECT NO.		4022
ISSUE	DATE	ISSUE DETAILS / REMARKS	AUTHOR	CHECKED	APPROVED
Rev 0.0	29/10/2021	No changes to document. Document issued for use.	██████████ ██████	██████████	██████████
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Document Revision History			PROJECT NO.		4022
ISSUE	DATE	ISSUE DETAILS / REMARKS	AUTHOR	CHECKED	APPROVED
Rev 0.0	29/10/2021	No changes to document. Document issued for use.	██████████ ██████	██████████	██████████

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Contents

1. Introduction	4
1.1 Context.....	4
1.2 Purpose.....	4
1.3 Scope.....	4
1.4 Responsibilities	5
1.5 Legislation, guidelines and standards	5
1.6 Requirements.....	5
2. Existing environment.....	Error! Bookmark not defined.
3. Unexpected Find Procedure.....	6
3.1 Removal of Asbestos	10
3.2 Waste tracking	10
3.3 External Reporting	10

Tables

Table 1 Relevant requirements	5
Table 2 Summary of known contamination	Error! Bookmark not defined.
Table 3 Unexpected finds procedure - general contamination (not asbestos)	8
Table 4 Unexpected finds procedure - asbestos and ACM.....	9

Figures

Figure 1 Sydney Metro Unexpected finds process flow chart.	7
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1. Introduction

1.1 Context

This Unexpected Contaminated Land and Asbestos and Finds Procedure (the Procedure) forms part of the Construction Environmental Management Plan (CEMP) for the Sydney Metro Western Sydney Airport Power Supply Works (the Project).

This Procedure required under Condition of Approval (MCoA) E98 details the actions to be taken and describes how Quickway will manage unexpected contamination and potential asbestos finds including asbestos containing material (ACM) discovered during construction activities. Implementation of this Procedure will fulfil the requirements of MCoA E99 and ensure that contamination and ACM is managed in such a way as to avoid harm to site personnel, visitors, the environment and the community.

This procedure has been developed in accordance with relevant legislation, EPA endorsed guidelines (including the waste guidelines) and industry standards detailed in Section 3.1 of the SWMP.

This procedure will form part of and be reviewed and updated in accordance with the procedures described in the Construction Environmental Management Plan (CEMP).

1.2 Purpose

The primary objective of this Procedure is to detail best practices for managing contaminated land discovered during construction. This Procedure describes a process to ensure that appropriate measures and controls are established and maintained to manage the discovery of contaminated land during construction of the Project.

There is the potential for previously unidentified contaminants to be uncovered during construction of the Project. Unexpected finds may include the discovery of hazardous materials, such as asbestos, Asbestos Containing Material (ACM), Acid Sulfate Soils (ASS) or contaminants that are not known to be occurring in that location.

For clarity, in this document bonded asbestos (or just 'asbestos') is where asbestos is mixed with other materials, such as cement. In this form, it is non friable. Unbonded asbestos is where the raw mineral is used generally as lagging or insulation – in this form it is friable, meaning it breaks easily and easily gives off dust. Within this document the term asbestos is intended to include bonded and unbonded asbestos. ACM is soil or some other matrix which contains asbestos (of any form) within it.

1.3 Scope

This Procedure is applicable to all activities undertaken for the Project that have the potential to uncover contamination.

The existence of this Procedure does not replace the need to prepare Environmental Work Method Statements and Safe Work Method Statements where required in accordance with the requirements outlined in the CEMP and the Safety Management Plan or Quickway Environmental Management Systems, for the management of contaminated materials.

This document describes the required management and controls of contaminated material in the context of waste handling from first identification onsite to removal to an appropriately licensed facility. This Procedure will be implemented for the duration of the Project as required under MCoA E99.

The scope of this Procedure does not include handling, monitoring and management measures to comply with Work Health and Safety legislation nor to provide management controls required to protect human safety or meet health and safety industry requirements. The management of the discovery, handling and removal of asbestos is the responsibility of the Occupational Hygienist under the direction of the Project Safety Team. Please refer to the Work Health and Safety Plan for guidance on these measures.

1.4 Responsibilities

The management of the discovery, handling and removal of asbestos is the responsibility of the Occupational Hygienist with overview by the Safety Team.

The management of other (not asbestos) contaminants is the responsibility of the environment team insofar as the prevention of spread (within or off-site) and engagement of the contaminated lands consultant for the collection and interpretation of materials and waste classification data.

The Environmental Team are responsible for the tracking and ensuring appropriate disposal of all waste, including contaminated waste and asbestos, in accordance with the Project Waste and Spoil Management Plan (included in the CEMP).

The construction workers would be informed of the potential of finding contaminated materials during construction activities within site EWMS, as well as the content of this Unexpected Finds Procedure.

1.5 Legislation, guidelines and standards

With the specific exclusion of health and safety obligations, relevant legislation, guidelines and standards pertaining to management of contaminated land are listed in [Section 2.1](#) of the SWMP.

1.6 Requirements

The requirements for the preparation of this unexpected finds procedure are listed in [Table 1](#) below.

Table 1 Relevant requirements

Requirement	Commitment	Timing	Document Reference
MCoA			
E98	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared before the commencement of construction and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	Pre-construction	This Procedure
E99	The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.	Construction	Section 1.3
CEMF			
12.2a)	Principal Contractors will develop and implement a Soil and Water Management Plan for their scope of works. The Soil and Water Management Plan will include as a minimum:	Pre-construction	Section 2.1

Requirement	Commitment	Timing	Document Reference
vi.	Management measures for contaminated material (soils, water and building materials) and a contingency plan to be implemented in the case of unanticipated discovery of contaminated material, including asbestos, during construction;		

2. Unexpected Find Procedure

An unexpected find of contamination is triggered in the event of identification or disturbance of contamination in any area of works that is not already under the management controls described in the CEMP (i.e. already being managed for contamination).

The process of disturbance of the existing ground in any location may result in the discovery of unexpected contamination, however the potential for contaminated land disturbance depends on a variety of factors including the location, nature, extent and magnitude of construction activities.

If contaminated land is discovered and not controlled appropriately there is potential for the contamination to impact soil, water and human health during construction, including:

- Contaminant exposure risk to construction personnel and the general public
- Contaminant exposure to environmental receptors
- Cross contamination associated with the incorrect handling or disposal of spoil/unexpected finds
- Contamination of previously uncontaminated areas

In order to ensure appropriate environmental management, the process described in the following tables implemented in the case of discovery of unexpected finds of potential contamination, until testing results or other confirmation that the contamination is false.

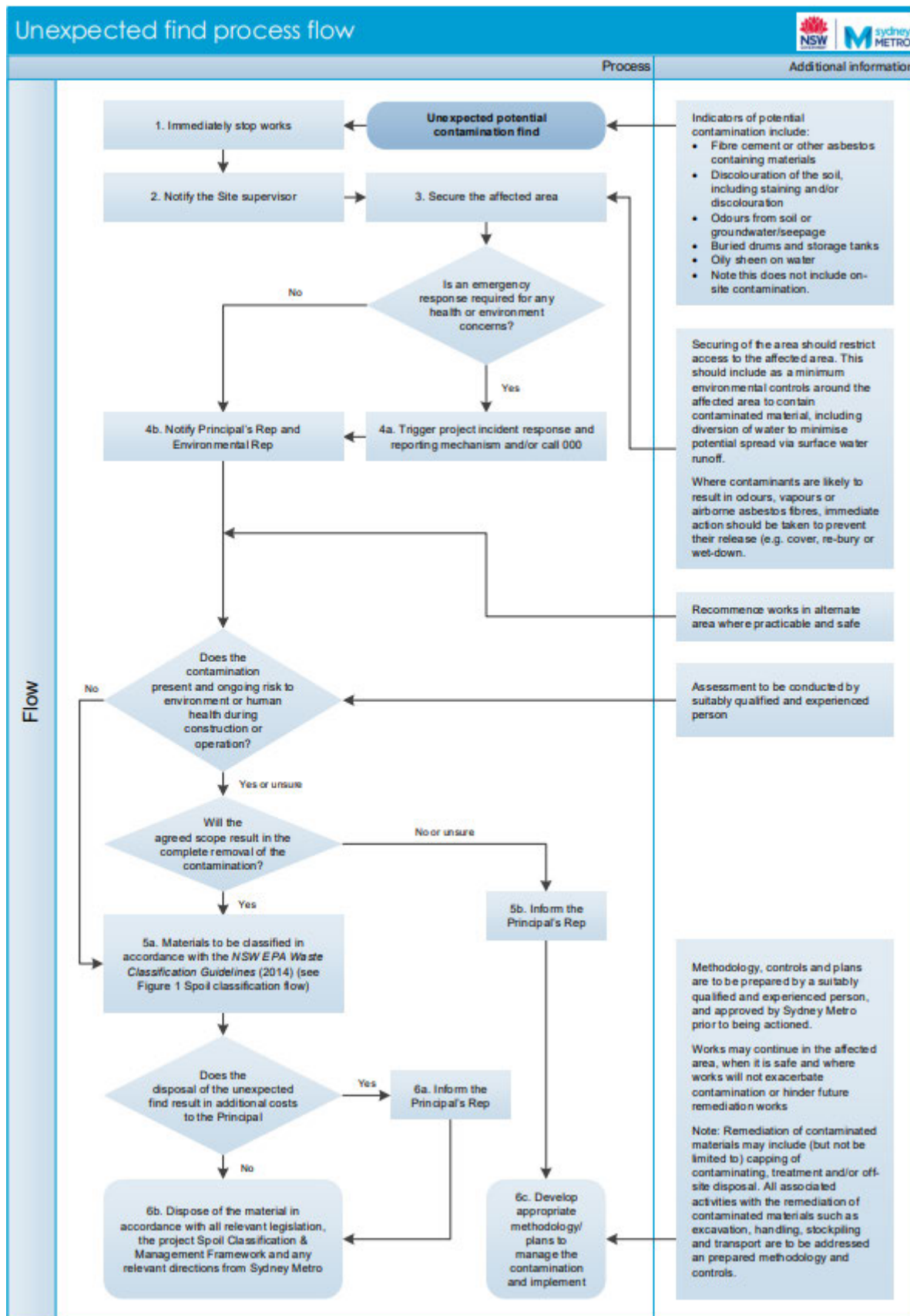


Figure 1 Sydney Metro Unexpected finds process flow chart.

Table 2 Unexpected finds procedure - general contamination (not asbestos)

Step	SM Process Ref	Action	Responsibility		
			Other	Enviro	Safety
1	1 2 3	Immediately Stop work in the area potentially impacted by contaminated material as soon as it is safe to do so and delineate the area using fencing and/or appropriate barriers and signage to prevent further works. Implement minimum environmental controls to contain material (ie water diversion, dust, odour)	√	√	√
2	4a	If the contaminant is an emergency and poses risk to health and/or environmental impacts. If so the Incident response procedure will be triggered and further remediation work will occur in accordance with this Procedure.	√	√	√
3	4b	Notify the Site Supervisor and Environmental Manager or delegate, who will notify Principals Representative (PR) and Environmental Representative (ER).	√	√	
4	4b	EM and/or Site supervisor (SS) to contact Contaminated Land Specialist (external consultant) for sampling of material and further advice.	√		
5		The EM will develop management options after guidance from the Contaminated Lands Specialist is received, in consideration of the type and level of contamination discovered and the proposed final land use.	√		
6		The Safety Manager (SM) will assess if works can recommence in alternate areas if safe and practicable to do so.	√		√
7a	5a 6c	The removed contaminated material will be managed in accordance with the Waste and Spoil Management Plan developed as part of the CEMP. Contaminated material will be disposed of off-site in accordance with the Waste Management Plan at a licensed waste facility or as otherwise identified within the Waste and Spoil Management Plan. Notification to EPA will be undertaken where required in line with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).		√	√
7b	5b 6b	If the agreed scope for management will not result in complete removal of the contamination, the PR will be informed to ensure an alternative management plan is developed for any remaining contamination. Following implementation of agreed management, work can recommence after clearance from EM.		√	
Process complete - works can commence without further control					

Table 3 Unexpected finds procedure - asbestos and ACM

Step	SM Process Ref.	Action	Responsibility		
			Other	Enviro	Safety
1	1 2 3	Immediately Stop work in the area potentially impacted by asbestos containing material as soon as it is safe to do so and delineate the area using fencing and/or appropriate barriers and signage to prevent further works. Implement minimum environmental controls to contain material (ie water diversion, dust, odour)	√	√	√
2	4a	If the contaminant is an emergency and poses risk to health and/or environmental impacts. If so the Incident response procedure will be triggered and further remediation work will occur in accordance with this Procedure.	√	√	√
3	4b	Notify the Site Supervisor and Environmental Manager or delegate, who will notify Principals Representative (PR) and Environmental Representative (ER).	√	√	
4	4b	Safety Manager (SM) or delegate to contact Occupational Hygienist for sampling of material and further advice regarding required management actions and securing the area as required.	√		√
5		On confirmation of actual asbestos or ACM that requires removal for the continuation of work, install appropriate signage warning that the area is undertaking asbestos removal in accordance with the SafeWork NSW: Code of Practice: How to safely remove asbestos (August 2019)			√
6		The SM will assess if works can recommence in alternate areas if safe and practicable to do so.	√		√
7a	5a 6c	The removed material will be managed in accordance with the Waste and Spoil Management Plan developed as part of the CEMP. Removal of ACM to be undertaken by the Project's nominated licensed occupational hygienist or licensed delegate. Removed ACM to be transported to a licensed waste facility in accordance with the Waste and Spoil Management Plan for classification and disposal. Records of waste disposal will be maintained (Section 3.2). Notification to EPA will be undertaken where required in line with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).	√	√	√
7b	5b 6b	If the agreed scope for management will not result in complete removal of the asbestos or ACM, the PR will be informed to ensure an alternative management plan is developed for any remaining contamination. A clearance inspection would be undertaken by the Occupational Hygienist upon completion of management, and copy of clearance report received.			√
Process complete - works can commence without further control					

2.1 Removal of Asbestos

Removal of asbestos or ACM would be undertaken in accordance with NSW Government regulations.

Quickway will engage an external Occupational Hygienist who holds Certification with the Australian Institute of Occupational Hygienists (AIOH), along with experience in the assessment and control of occupational health hazards, relevant to the activities and processes inherent to the works.

Waste Classification reports will be authored or reviewed and approved by a Certified Contaminated Land Consultant that holds certification under a scheme endorsed by the Contaminated Land Consultant Certification Policy (NSW EPA, Version 2, November 2017) and will have at least 5 years' experience in the management of contamination on linear infrastructure projects.

Should an event where any material exhibiting indicators of asbestos or ACM be unexpectedly encountered during excavation works, senior full time members of Quickway's project delivery team, inclusive of Site Supervisors, Superintendents, Senior Project Engineer(s) and Project Manager(s) will be responsible for engaging the Occupational Hygienist and Certified contaminated Land Consultant, as required.

The Occupational Hygienist will provide any further advice on the management of the encountered material from an occupational health and hygiene perspective. The Certified Contaminated Land Consultant will author or review and approve the waste classification prior to disposal, and provide any further advice as required on the encountered material.

This process will be detailed in relevant Project safety documentation. Any removal of asbestos will be conducted in accordance with the following relevant legislation and their associated regulations; Contaminated Land Management Act (1997), Protection of Environment Operations Act (1997), POEO Waste Regulation 2014, Work Health and Safety Act (2017).

2.2 Waste tracking

All waste removal regardless of type will be tracked by the Project and evidence of receipt at appropriate waste facilities will be obtained from the waste removal contractor.

Asbestos transporters and facilities receiving asbestos waste in NSW weighing more than 100 kilograms, or consisting of more than 10 square metres of asbestos sheeting in one load must track and report this waste to the EPA using WasteLocate. Additionally, people transporting asbestos contaminated soil in NSW, weighing more than 100 kilograms, must track and report this waste to the EPA using WasteLocate.

WasteLocate tracks each load of applicable waste from pick up to disposal using the GPS and generates a unique consignment number. Records evidencing the use of WasteLocate will be retained as required.

2.3 External Reporting

Sydney Metro would be informed immediately when encountering of a potential or actual contaminant which may require a Duty to Report. In the case of an unexpected find triggering the process described in [Table 2](#) and [Table 3](#), notification and reporting to authorities such as the EPA and Environmental Representative (ER) will be undertaken by the Environmental Manager in accordance with the NSW EPA Guidelines on the Duty to Report Contamination (2015) and the CLM Act (1997).

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 of the CEMP.

Under section 148 of the POEO Act, anyone causing a pollution incident are required to report the incident 'immediately' to the relevant authorities. 'Immediately' is defined as promptly and without delay, after the person becomes aware of the incident.

Appendix N Compliance Tables – MCoA, REMMs and CEMF

Table 1: Minister for Planning and Public Space’s conditions of approval for the Project (MCoA)

Type	Condition Classification	Condition Reference	Description	Responsibility	Quickway Compliance (Y/N/Not Triggered)	CEMP Compliance Reference - Where Addressed
MCoA	General	A1	The Proponent must carry out the CSSI in accordance with the terms of this approval and generally in accordance with the: (a) Sydney Metro – Western Sydney Airport Environmental Impact Statement dated 21 October 2020; and (b) Sydney Metro – Western Sydney Airport Submissions Report submitted April 2021.	Full Compliance	Yes	Noted
MCoA	General	A2	The CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	Full Compliance	Yes	Noted
MCoA	General	A3	In the event of an inconsistency between: (a) the conditions of this approval and any document listed in Condition A1, the conditions of this approval will prevail to the extent of the inconsistency; and (b) any document listed in Condition A1, the most recent document will prevail to the extent of the inconsistency. Note: For the purpose of this condition, there is an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.	Full Compliance	Yes	Noted
MCoA	General	A4	In the event that there are differing interpretations of the conditions of this approval, including in relation to a condition of this approval, the Planning Secretary’s interpretation is final.	Full Compliance	Yes	Noted
MCoA	General	A5	The Proponent must comply with all written requirements or directions of the Planning Secretary, including in relation to: (a) the environmental performance of the CSSI; (b) any document or correspondence in relation to the CSSI; (c) any notification given to the Planning Secretary under the terms of this approval; (d) any audit of the construction or operation of the CSSI; (e) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval); (f) the carrying out of any additional monitoring or mitigation measures; and (g) in respect of ongoing monitoring and management obligations, compliance with an updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under the terms of this approval.	Full Compliance	Yes	Noted
MCoA	General	A6	Where the terms of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; (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; (d) outline of the issues raised by the identified party(s) and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.	Full Compliance, except that Sydney Metro will make all submissions of evidence of the consultation undertaken to the Planning Secretary.	Not Triggered	No monitoring programs are required to be developed for the Power Enabling Work
MCoA	General	A7	This approval lapses five (5) years after the date on which it is granted, unless work has physically commenced on or before that date.	Full Compliance	Yes	Work will commence within 5 years of the approval date.
MCoA	General	A8	References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, standards or policies in the form they are in as at the date of this approval.	Full Compliance	Yes	Noted
MCoA	General	A9	Any document that must be submitted or action taken within a timeframe specified in or under the conditions of this approval may be submitted or undertaken within a later timeframe agreed with the Planning Secretary. This condition does not apply to the written notification required in respect of an incident under Condition A41.	Full Compliance, except that Sydney Metro will facilitate, and involve as necessary, the Contractor in any negotiations with the Planning Secretary on extended timeframes for submissions for conditions and make all submissions to the Planning Secretary.	Not Triggered	No requests have been made yet.
MCoA	Staging	A10	The CSSI may be constructed and operated in stages. Where staged construction and/or operation is proposed, a Staging Report must be prepared. The Staging Report must be submitted to the Planning Secretary for information no later than one (1) month before the lodgement of any CEMP or CEMP sub plan for the first of the proposed stages of construction (or if only staged operation is proposed, one (1) month before the commencement of operation of the first of the proposed stages of operation), unless otherwise agreed with the Planning Secretary.	Not Applicable		N/A
MCoA	Staging	A11	The Staging Report must: (a) set out how construction of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish; (b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including details of each stage and the general timing of when operation of each stage will commence; (c) specify conditions that apply to each stage of construction and operation including how compliance with conditions will be achieved across and between each of the stages of the CSSI; (d) set out mechanisms for managing any cumulative impacts arising from the proposed staging; and (e) for the purposes of informing Conditions C2, C7 and C17, include an assessment of the predicted level of environmental risk and potential level of community concern posed by the construction activities required to construct each stage of the CSSI. With respect to (e) above, the risk assessment must use an appropriate process consistent with AS/NZS ISO 31000: 2018; Risk Management - Guidelines and must be endorsed by the ER. Note: 1. A Staging Report may reflect the staged construction and operation of the project through geographical activities, temporal activities or activity-based staging. 2. The risk matrix must reflect the stages of construction identified in the Staging Report	Not Applicable		N/A
MCoA	Staging	A12	The CSSI must be staged in accordance with the Staging Report, as submitted to the Planning Secretary for information.	Full Compliance to the extent required by the Staging Report	Yes	Section 2.2 of the CEMP discusses how QW will comply with Staging Report.
MCoA	Staging	A13	Where staging is proposed, the terms of this approval that apply or are relevant to the work or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.	Full Compliance to the extent required by the Staging Report	Yes	Section 2.2 of the CEMP discusses how QW will comply with Staging Report.
MCoA	Staging	A14	Where changes are proposed to the staging of construction or operation, a revised Staging Report must be prepared and submitted to the Planning Secretary for information before the commencement of changes to the stage of construction or the stage of operation.	Sydney Metro	N/A	N/A
MCoA	Staging	A15	Where changes are proposed to the risk assessment related to the staging of construction or operation, a revised Staging Report must be submitted to the Planning Secretary for information one (1) month before the lodgement of any CEMP or CEMP sub plan associated with the stage where change in risk assessment is proposed.	Sydney Metro	N/A	N/A

MCoA	Staging	A16	The Proponent may submit any strategies, plans or programs required by this approval on a progressive basis, within each stage of the CSSI. Notes: 1. While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing activities on site are covered by suitable strategies, plans or programs at all times; and 2. If the submission of any strategy, plan or program is to be submitted on a progressive basis, then the relevant strategy, plan or program must clearly describe the activities to which the strategy, plan or program applies, the relationship of this activity to any future activities within the stage, and the trigger for updating the strategy, plan or program. 3. The staged submission of strategies, plans or programs may reflect the construction and operation of the project through geographical activities, temporal activities or activity-based staging.	Full Compliance, except that Sydney Metro will make all submissions to the Planning Secretary.	Yes	Noted. CEMP and associated documents have been developed in accordance with the Stagig Report
MCoA	Ancillary Facilities	A17	Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 can only be established and used in each case if: (a) they are located within or immediately adjacent to the Construction Boundary of the CSSI; and (b) they are not located next to sensitive land use(s) (including where an access road is between the facility and the receiver), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and (c) they have no impacts on Heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and (d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts. Note: This condition does not apply to any ancillary facilities or work that are exempt or complying development, established before the commencement of construction under this approval or minor ancillary facilities established under Condition A22.	Full Compliance	Yes	CEMP Section 4.2
MCoA	Ancillary Facilities	A18	Before establishment of any ancillary facility (excluding exempt or complying development, minor ancillary facilities determined by the ER to have minimal environmental impact and those established under Condition A22 and those considered in an approved CEMP), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the ancillary facilities. The Site Establishment Management Plan must be prepared in consultation with the Relevant Council(s) and relevant government agencies. The Site Establishment Management Plan must include: (a) a description of activities to be undertaken during establishment of the ancillary facility (including scheduling and duration of work to be undertaken at the site); (b) figures illustrating the proposed operational site layout and the location of the closest sensitive land use(s); (c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of site establishment work; (d) details of how the site establishment activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in Condition A1; and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and (e) a program for monitoring the performance outcomes, including a program for construction noise monitoring, where appropriate or required. Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each ancillary facility.	Full Compliance	Not Triggered	SEMP requirement not triggered, as the size and scale of the ancillary facilities for the Power Enabling Work can be established in accordance with the ER endorsed CEMP.
MCoA	Ancillary Facilities	A19	With the exception of a Site Establishment Management Plan expressly nominated by the Planning Secretary to be endorsed by the ER, all Site Establishment Management Plans must be submitted to the Planning Secretary for approval one (1) month before the establishment of any ancillary facilities.	Full Compliance, except that the Sydney Metro must make submissions of Site Establishment Management Plans to the Planning Secretary. The Contractor must provide the Site Establishment Management Plan to the Sydney Metro 6 weeks before the establishment of any construction ancillary facility.	Not Triggered	SEMP requirement not triggered, as the size and scale of the ancillary facilities for the Power Enabling Work can be established in accordance with the ER endorsed CEMP.
MCoA	Ancillary Facilities	A20	A Site Establishment Management Plan expressly nominated by the Planning Secretary to be endorsed by the ER must be submitted to the ER for endorsement one (1) month before the establishment of that ancillary facility or as otherwise agreed with the ER.	Full Compliance, except that the Sydney Metro must make submissions of Site Establishment Management Plans to the Planning Secretary. The Contractor must provide the Site Establishment Management Plan to the Sydney Metro 6 weeks before the establishment of any construction ancillary facility.	Not Triggered	N/A
MCoA	Ancillary Facilities	A21	The use of ancillary facility for construction must not commence until the CEMP required by Condition C1 relevant CEMP Sub-plans required by Condition C5 and relevant Construction Monitoring Programs required by Condition C13 have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable). Note: This condition does not apply to Condition A22 or where the use of an ancillary facility is Low Impact Work or for Low Impact Work.	Full Compliance, except that the Sydney Metro will notify the Contractor when the relevant CEMP, CEMP Sub-plans and Construction Monitoring Programs have been approved by the Planning Secretary.	Yes	CEMP Section 4.2
MCoA	Ancillary Facilities	A22	Lunch sheds, office sheds, portable toilet facilities and the like, can be established and used where they have been assessed in the documents listed in Condition A1 or satisfy the following criteria: (a) are located within or adjacent to the Construction Boundary; and (b) have been assessed by the ER to have - (i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the ICNG, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and (ii) minimal environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and Heritage items beyond those already approved under other terms of this approval.	Full Compliance	Not Triggered	N/A
MCoA	Boundary Screening	A23	Boundary screening must be erected around ancillary facilities that are adjacent to sensitive land use(s) for the duration that the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners.	Full Compliance	Yes	CEMP Section 4.2 and 7.8.4 Boundary Screening is not required to be installed around the ancillary facilities for noise or visual amenity as there are no sensitive land-uses adjacent to the ancillary sites. Screening may be implemented for security purposes. Screening may also be implemented at the Lawson St compound if requested as part of the lease with the private landholder.
MCoA	Boundary Screening	A24	Boundary screening required under Condition A23 must minimise visual impacts on adjacent sensitive land use(s).	Full Compliance	Yes	CEMP Section 4.2 and 7.8.4 Boundary Screening is not required to be installed around the ancillary facilities for noise or visual amenity as there are no sensitive land-uses adjacent to the ancillary sites. Screening may be implemented for security purposes. Screening may also be implemented at the Lawson St compound if requested as part of the lease with the private landholder.

MCoA	Independent Appointments	A25	All Independent Appointments required by the terms of this approval must have regard to the Department's guideline Seeking approval from the Department for the appointment of independent experts (DPIE, 2020) and hold current membership of a relevant professional body, unless otherwise agreed by the Planning Secretary.	Full Compliance (with A25) to facilitate and assist the Planning Secretary in any such audit. Sydney Metro must make it a term of their engagement of an Independent Appointment that the Independent Appointment facilitate and assist the Planning Secretary in any such audit.	Yes	Independent appointment nominations will be made by Syd Metro.
MCoA	Independent Appointments	A26	The Planning Secretary may at any time commission an audit of how an Independent Appointment has exercised their functions. The Proponent must: (a) facilitate and assist the Planning Secretary in any such audit; and (b) make it a term of their engagement of an Independent Appointment that the Independent Appointment facilitate and assist the Planning Secretary in any such audit.	Sydney Metro	N/A	N/A
MCoA	Independent Appointments	A27	Upon completion of an audit under Conditions A26 above, the Planning Secretary may withdraw its approval of an Independent Appointment should they consider the Independent Appointment has not exercised their functions in accordance with this approval. Note: Conditions A26 and A27 apply to all Independent Appointments including the ER and Independent Auditor.	Sydney Metro	N/A	N/A
MCoA	Environmental Representative	A28	Work must not commence until an Environmental Representative (ER) has been nominated by the Proponent and approved by the Planning Secretary.	Full Compliance, except that Sydney Metro will notify the Contractor when an ER has been approved.	Yes	CEMP Section 6.3.1
MCoA	Environmental Representative	A29	The proposed ER must be a suitably qualified and experienced person(s) who was not involved in the preparation of the documents listed in Condition A1 and is independent from the design and construction personnel for the CSSI and those involved in the delivery of it.	Not Applicable	N/A	N/A
MCoA	Environmental Representative	A30	The Proponent may engage more than one ER for the CSSI, in which case the functions to be exercised by an ER under the terms of this approval may be carried out by any ER that is approved by the Planning Secretary for the purposes of the SSI.	Not Applicable	N/A	N/A
MCoA	Environmental Representative	A31	The ER must meet the requirements of the Department's Environmental Representative Protocol (DPE, 2018).	Not Applicable	N/A	N/A
MCoA	Environmental Representative	A32	For the duration of the work until the commencement of operation, or as agreed with the Planning Secretary, the approved ER must: (a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI; (b) consider and inform the Planning Secretary on matters specified in the terms of this approval; (c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review documents identified in Conditions A10, A18, A20, C1, C5 and C13 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so: (i) endorse the documents before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or (ii) endorse the documents before the implementation of such documents (if those documents are only required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary / Department); (iii) provide a written statement to the Planning Secretary advising the documents have been endorsed; (e) for documents that are required to be submitted to the Planning Secretary / Department for information under (d)(ii) above, the documents must be submitted as soon as practicable to the Planning Secretary / Department after endorsement by the ER, unless otherwise agreed by the Planning Secretary; (f) regularly monitor the implementation of the documents listed in Conditions A10, A18, A20, C1, C5 and C13 to ensure implementation is being carried out in accordance with the document and the terms of this approval; (g) as may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A36; (h) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints received directly by the Department; (i) consider or assess the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities and the like as required by Condition A22; and (j) consider any minor amendments to be made to the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs without increasing impacts to nearby sensitive land use(s), and are consistent with the terms of this approval and the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs approved by the Planning Secretary and if satisfied such amendment is necessary, approve the amendment. This does not include any	Full Compliance to the extent that it applies to the Principal Contractor's obligation to comply with Condition A32.	Yes	Section 6.3 of the CEMP addresses the role and responsibilities of the ER.
MCoA	Environmental Representative	A33	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 A32 (including preparation of the ER monthly report), as well as: (a) the Complaints Register (to be provided on a weekly basis or as requested); and (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).	Full Compliance	Yes	CEMP Section 6.3.1
MCoA	Notification of Commencement	A34	The Department, and relevant Councils must be notified in writing of the date of commencement of construction at least seven (7) days before the commencement of construction.	Sydney Metro	N/A	N/A
MCoA	Notification of Commencement	A35	If construction of the CSSI is to be staged, the Department, Liverpool City Council and Penrith City Council must be notified in writing at least seven (7) days before the commencement of each stage, of the date of the commencement of that stage.	Sydney Metro	N/A	N/A
MCoA	Auditing	A36	Independent Audits of the CSSI must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (DPIE, 2020).	Sydney Metro	N/A	N/A
MCoA	Auditing	A37	Notwithstanding Condition A36, the Proponent may prepare an audit program to outline the scope and timing of each independent audit that will be undertaken during construction. If prepared, the audit program must be developed in consultation with, and approved by, the Planning Secretary prior to commencement of the first audit and implemented throughout construction.	Sydney Metro will arrange and pay for the Independent Audits and the Contractor will participate in the Independent Audit process of the CSSI.	Yes	QW will be available to be involved in independent audits.
MCoA	Auditing	A38	Proposed independent auditors must be approved by the Planning Secretary before the commencement of an Independent Audit.	Sydney Metro	N/A	N/A
MCoA	Auditing	A39	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.	Sydney Metro will arrange and pay for the Independent Audits and the Contractor will participate in the Independent Audit process of the CSSI.	Yes	QW will be available to be involved in independent audits.
MCoA	Auditing	A40	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.	Full Compliance, except that Sydney Metro will submit Independent Audit Reports to the Planning Secretary.	Yes	QW will be available to be involved in independent audits.
MCoA	Incident Notification and Reporting	A41	The Planning Secretary must be notified via phone or in writing via the Major Projects website as soon as possible and no later than 12 hours 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. 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.	Full Compliance, except that Sydney Metro will submit Independent Audit Reports to the Planning Secretary.	Not Triggered	CEMP Section 6.8.2.3
MCoA	Incident Notification and Reporting	A42	Any incident that affects or could reasonably affect the WaterNSW Pipelines corridor must also be reported to WaterNSW on the 24-hour Incident Notification Number 1800 061 069 within the same timeframes.	Not Applicable	N/A	N/A
MCoA	Incident Notification and Reporting	A43	Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix A.	Not Applicable	N/A	N/A
MCoA	Incident Notification and Reporting	A44	The Planning Secretary must be notified in writing via the Major Projects website within seven (7) days after the Proponent becomes aware of any non-compliance with the terms of this approval.	The Principal Contractor shall provide Sydney Metro with the written notification to allow for Sydney Metro to report to the Planning Secretary.	Not Triggered	CEMP Section 6.8.2

MCoA	Incident Notification and Reporting	A45	A non-compliance notification must identify the CSSI (including the application number for it), set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Sydney Metro will raise and expect investigation and actions to be carried out by the Principal Contractor. The Principal Contractor shall provide Sydney Metro with the Incident Report required under Condition A45.	Not Triggered	CEMP Section 6.8.2
MCoA	Identification of Workforce Compounds	A46	All Heavy Vehicles used for spoil haulage must be clearly marked on the sides and rear with the project name and application number to enable immediate identification by a person viewing the Heavy Vehicle standing 20 metres away.	Full Compliance where spoil haulage is undertaken.	Yes	Section 7.9 of CEMP and CTMPs
MCoA	Identification of Workforce Compounds	A47	The CSSI name, application number, telephone number, postal address and email address required under Condition B3 must be available on site boundary fencing / hoarding at each ancillary facility before the commencement of construction. This information must also be provided on the website required under Condition B11.	Full Compliance, except that Sydney Metro will submit the project identification markings to the Planning Secretary for approval and will confirm approval to the Principal Contractor.	Yes	Noted
MCoA	Community Information, Consultation and Involvement	B1	The Overarching Community Communication Strategy as provided in the documents listed in Condition A1, or updated Strategy must be implemented for the duration of the work. Should the Overarching Community Communication Strategy be updated, a copy must be provided to the Planning Secretary for information.	The Principal Contractor must meet any obligation required of them by the OCCS.	Yes	QW will comply with the obligations of the Overarching CCS.
MCoA	Community Information, Consultation and Involvement	B2	A Complaints Management System must be prepared and implemented before the commencement of any work and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the CSSI.	The Principal Contractor must participate in the implementation of the Complaints Management System and provide Sydney Metro with all information it requires to comply with Condition B2.	Yes	QW will participate in the implementation of the complaints management system
MCoA	Community Information, Consultation and Involvement	B3	The following information must be available to facilitate community enquiries and manage complaints before the commencement of work and for 12 months following the completion of construction: (a) a 24- hour telephone number for the registration of complaints and enquiries about the CSSI; (b) a postal address to which written complaints and enquires may be sent; (c) an email address to which electronic complaints and enquiries may be transmitted; and (d) a mediation system for complaints unable to be resolved. This information must be accessible to all in the community regardless of age, ethnicity, disability or literacy level.	The Principal Contractor must participate in the implementation of the Complaints Management System and provide the Sydney Metro with all information it requires to comply with Condition B3.	Yes	QW will participate in the implementation of the complaints management system
MCoA	Community Information, Consultation and Involvement	B4	A Complaints Register must be maintained recording information on all complaints received about the CSSI during the carrying out of any work and for a minimum of 12 months following the completion of construction. The Complaints Register must record the: (a) number of complaints received; (b) date and time of the complaint; (c) number of people (in the household) affected in relation to a complaint, if relevant; (d) method by which the complaint was made; (e) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; (f) issue of the complaint; (g) means by which the complaint was addressed and whether resolution was reached, with or without mediation; and (h) if no action was taken, the reason(s) why no action was taken.	The Principal Contractor must participate in the implementation of the Complaints Management System and provide Sydney Metro with all information it requires to comply with Condition B4 until substantial portion completion.	Yes	QW will participate in the implementation of the complaints management system
MCoA	Community Information, Consultation and Involvement	B5	Complainants must be advised of the following information before, or as soon as practicable after, providing personal information: (a) the Complaints Register may be forwarded to government agencies, including the Department (Department of Planning Industry and Environment, 4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150), to allow them to undertake their regulatory duties; (b) by providing personal information, the complainant authorises the Proponent to provide that information to government agencies; (c) the supply of personal information by the complainant is voluntary; and (d) the complainant has the right to contact government agencies to access personal information held about them and to correct or amend that information (Collection Statement). The Collection Statement must be included on the Proponent or development website to make prospective complainants aware of their rights under the Privacy and Personal Information Protection Act 1998 (NSW). For any complaints made in person, the complainant must be made aware of the Collection Statement.	The Principal Contractor must participate in the implementation of the Complaints Management System and provide Sydney Metro with all information it requires to comply with Condition B5.	Yes	QW will participate in the implementation of the complaints management system
MCoA	Community Information, Consultation and Involvement	B6	The Complaints Register must be provided to the Planning Secretary upon request, within the timeframe stated in the request. Note: Complainants must be advised that the Complaints Register may be forwarded to Government agencies to allow them to undertake their regulatory duties.	The Principal Contractor must participate in the implementation of the Complaints Management System and provide Sydney Metro with all information it requires to comply with Condition B6 until substantial portion completion.	Yes	QW will participate in the implementation of the complaints management system
MCoA	Community Information, Consultation and Involvement	B7	A Community Complaints Mediator that is independent of the design and construction personnel must be engaged by the Proponent, upon the referral of the complaint by the ER in accordance with the Overarching Community Communication Strategy.	Sydney Metro	N/A	N/A
MCoA	Community Information, Consultation and Involvement	B8	The role of the Community Complaints Mediator is to provide independent mediation services for any reasonable and unresolved complaint referred by the ER where a member of the public is not satisfied by the Proponent's response. Where a Community Complaints Mediator is required, a mediator accredited under the National Mediator Accreditation System (NMAS), administered by the Mediator Standards Board must be appointed.	The Principal Contractor must facilitate the Community Complaints Mediation process and provide the Community Complaints Mediator with any information or documentation they require to meet their obligations under the CSSI approval.	Yes	QW will participate in the implementation of the complaints mediation process.
MCoA	Community Information, Consultation and Involvement	B9	The Community Complaints Mediator will: (a) review any unresolved disputes, referred by the ER in accordance with the Overarching Community Communication Strategy; (b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes; and (c) provide a copy of the recommendations, and the Proponent's response to the recommendations, must be submitted to the Planning Secretary within one month of the recommendations being made.	The Principal Contractor must facilitate the Community Complaints Mediation process and provide the Community Complaints Mediator with any information or documentation they require to meet their obligations under the CSSI approval.	Yes	QW will participate in the implementation of the complaints mediation process.
MCoA	Community Information, Consultation and Involvement	B10	Community Complaints Mediation will not be enacted before the Complaints Management System required by Condition B2 has been executed for a complaint and will not consider issues such as property acquisition, where other dispute processes are provided for in this approval, statute or clear government policy and resolution processes are available, or matters which are not within the scope of this CSSI.	Sydney Metro	N/A	N/A

MCoA	Community Information, Consultation and Involvement	B11	<p>A website or webpage providing information in relation to the CSSI must be established before commencement of work and maintained for the duration of construction, and for a minimum of 24 months following the completion of all stages of construction of the CSSI. Up-to-date information (excluding confidential, private, commercial information or other documents as agreed to by the Planning Secretary) must be published before the relevant work commencing and maintained on the website or dedicated pages including:</p> <p>(a) information on the current implementation status of the CSSI;</p> <p>(b) a copy of the documents listed in Condition A1, and any documentation relating to any modifications made to the CSSI or the terms of this approval;</p> <p>(c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval, or links to the referenced documents where available;</p> <p>(d) a copy of each statutory approval, licence or permit required and obtained in relation to the CSSI, or where the issuing agency maintains a website of approvals, licences or permits, a link to that website;</p> <p>(e) a current copy of each document required under the terms of this approval, which must be published within one (1) week of its approval or before the commencement of any work to which they relate or before their implementation, as the case may be; and</p> <p>(f) a copy of the audit reports required under this approval.</p> <p>Where the information / document relates to a particular work or is required to be implemented, it must be published before the commencement of the relevant work to which it relates or before its implementation. All information required in this condition is to be provided on the website or webpage, and easy to navigate.</p>	The Principal Contractor will comply with B11 (a), (b) and (c) and provide a link on Sydney Metro's website to the Principal Contractors website. Any documentation, statutory approval, licence or permit required to be produced or obtained by the Principal Contractor that is also required to be on a website under this condition, must be uploaded or linked to the Principal Contractors website.	Yes	QW will comply with the obligations of this condition in discussion and consultation with SM.
MCoA	Construction Environmental Management	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 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	Full Compliance	Yes	CEMP Section 3.1 CEMP Section 5.3 CNVMP WRMP
MCoA	Construction Environmental Management	C2	With the exception of any CEMP's expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP's must be submitted to the Planning Secretary for approval. Note: The Planning Secretary will consider the assessment of the predicted level of environmental risk and potential level of community concern required under Condition A11(e) when deciding whether any CEMP's may be endorsed by the ER.	The Principal Contractor, except Sydney Metro will submit the CEMP to the Planning Secretary and will confirm approval to the Principal Contractor.	Yes	CEMP Section 5.3
MCoA	Construction Environmental Management	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 staged no later than one (1) month before the commencement of that stage. 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.	The Principal Contractor, except Sydney Metro will submit the CEMP to the ER and will confirm approval to the Principal Contractor.	Yes	CEMP Section 5.3
MCoA	Construction Environmental Management	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 staged no later than one (1) month before the commencement of that stage.	The Principal Contractor, except Sydney Metro will submit the CEMP to the Planning Secretary/ER and will confirm approval to the Principal Contractor.	Yes	CEMP Section 5.3
MCoA	Construction Environmental Management	C5	<p>Of the CEMP Sub-plans required under Condition C1, 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 (as required by Condition A6) must be provided with the relevant CEMP Sub-plan when submitted to the Planning Secretary / ER (whichever is applicable). 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.</p> <p>Required CEMP Sub-plan Relevant government agencies to be consulted for each CEMP Sub-plan</p> <p>a) Noise nad Vibration - Relevant Councils and WaterNSW (in relation to its assets)</p> <p>b) Flora and Fauna- DPIE EES, DPI Fisheries, and Relevant Councils</p> <p>c) Soil and Water- DPI Fisheries, and Relevant Councils</p> <p>d) Non-Aboriginal heritage- Relevant Councils, WaterNSW and Heritage NSW</p> <p>Note: CEMP Sub-plan(s) may reflect the construction of the project through geographical activities, temporal activities or activity based staging.</p>	The Principal Contractor, except Sydney Metro will submit the CEMP to the Planning Secretary/ER and will confirm approval to the Principal Contractor.	Not Triggered	<p>N/A - No Sub-Plans required as stated in Staging Report.</p> <p>NVMP and WRMP have been prepared for ease rather than as a result of an increased risk or requirement of the Staging Report.</p>
MCoA	Construction Environmental Management	C6	<p>The CEMP Sub-plans must state how:</p> <p>(a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;</p> <p>(b) the mitigation measures identified in the documents listed in Condition A1 will be implemented;</p> <p>(c) the relevant terms of this approval will be complied with; and</p> <p>(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.</p>	Full Compliance	Yes	CNVMP Section 7
MCoA	Construction Environmental Management	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.	The Principal Contractor, except Sydney Metro will submit the CEMP to the Planning Secretary/ER and will confirm approval to the Principal Contractor.	Yes	<p>N/A - No Sub-Plans required as stated in Staging Report.</p> <p>NVMP and WRMP have been prepared for ease rather than as a result of an increased risk or requirement of the Staging Report.</p>
MCoA	Construction Environmental Management	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. 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 staged no later than one (1) month before the commencement of that stage.	The Principal Contractor, except Sydney Metro will submit the CEMP to the ER and will confirm endorsement to the Principal Contractor.	Yes	<p>N/A - No Sub-Plans required as stated in Staging Report.</p> <p>NVMP and WRMP have been prepared for ease rather than as a result of an increased risk or requirement of the Staging Report.</p> <p>ER will endorse sub-plans prior to commencement of construction.</p>
MCoA	Construction Environmental Management	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 staged no later than one (1) month before the commencement of that stage.	The Principal Contractor, except the Sydney Metro will submit the CEMP to the Planning Secretary and will confirm approval to the Principal Contractor.	Not Triggered	N/A
MCoA	Construction Environmental Management	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.	The Principal Contractor, except Sydney Metro will confirm approval to the Principal Contractor.	Yes	CEMP Section 5.3 CEMP and appendices will be endorsed by the ER prior to construction commencing.
MCoA	Construction Environmental Management	C11	<p>In addition to the relevant requirements of the CEMF, the Flora and fauna CEMP Sub-plan must include, but not be limited to:</p> <p>(a) details of how the requirements of Condition E11 will be met;</p> <p>(b) details of a dewatering plan of farm dams including:</p> <p>(i) supervision of dewatering by a suitably qualified ecologist;</p> <p>(ii) a methodology for the transfer of native fauna species known to inhabit and/or use the dam;</p> <p>(iii) the location and suitability of the proposed relocation sites; and</p> <p>(iv) any potential impacts of relocating the fauna to the relocation sites</p> <p>(c) protocols for incidental finds of threatened species and ecological communities within the construction boundary.</p>	Full Compliance to Parts a) and c) only	Yes	(a) CEMP Section 7.1.4 (c) CEMP Section 7.1.4
MCoA	Construction Environmental Management	C12	<p>In addition to the relevant requirements of the CEMF, the Soil and Water CEMP Sub- Plan must include but not be limited to:</p> <p>(a) details how the requirements of Conditions E127, E128 and E129 will be met; and</p> <p>(b) the unexpected contaminated finds protocol required by Condition E98.</p>	Full Compliance	Yes	CEMP Section 7.3

MCoA	Construction Environmental Management	C13	<p>The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies (as required by Condition A6) identified for each to compare actual performance of construction of the CSSI against the performance predicted in the documents listed in Condition A1 or in the CEMP. 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.</p> <p>Required Construction Monitoring Programs Relevant government agencies to be consulted for each Construction Monitoring Program</p> <p>a) Noise and Vibration- Relevant Councils and WaterNSW (in relation to its assets)</p> <p>b) Surface water quality- DPIE Water, DPI Fisheries, and Relevant Councils</p> <p>c) Groundwater- DPIE Water</p> <p>d) Air Quality- Relevant Councils</p>	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C14	<p>Each Construction Monitoring Program must provide:</p> <p>(a) details of baseline data available including the period of baseline monitoring;</p> <p>(b) details of baseline data to be obtained and when;</p> <p>(c) details of all monitoring of the project to be undertaken;</p> <p>(d) the parameters of the project to be monitored;</p> <p>(e) the frequency of monitoring to be undertaken;</p> <p>(f) the location of monitoring;</p> <p>(g) the reporting of monitoring results and analysis results against relevant criteria;</p> <p>(h) details of the methods that will be used to analyse the monitoring data;</p> <p>(i) procedures to identify and implement additional mitigation measures where the results of the monitoring indicated unacceptable project impacts;</p> <p>(j) a consideration of SMART principles;</p> <p>(k) any consultation to be undertaken in relation to the monitoring programs; and</p> <p>(l) any specific requirements as required by Conditions C15 to C16.</p>	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C15	<p>The Noise and Vibration Construction Monitoring Program must include:</p> <p>(a) noise and vibration monitoring at representative residential and other locations (including at the worst-affected residences), subject to property owner approval, to confirm construction noise and vibration levels;</p> <p>(b) monitoring undertaken during the day, evening and night-time periods throughout the construction period and cover the range of activities being undertaken;</p> <p>(c) method and frequency for reporting monitoring results; and</p> <p>(d) a process to undertake real time noise and vibration monitoring.</p> <p>The results of the monitoring must be readily available to the construction team, the Proponent and ER. The Planning Secretary and EPA must be provided with access to the results on request.</p>	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C16	<p>Groundwater Construction Monitoring Program must include:</p> <p>(a) groundwater monitoring networks at each construction excavation site predicted to intercept groundwater in the documents listed in Condition A1;</p> <p>(b) detail of the location of all monitoring bores with nested sites to monitor both shallow and deep groundwater levels and quality;</p> <p>(c) define the location of saltwater interception monitoring where sentinel groundwater monitoring bores will be installed between the saline sources of the estuary or river and that of the stations or shafts;</p> <p>(d) results from existing monitoring bores;</p> <p>(e) monitoring and gauging of groundwater inflow to the excavations, appropriate trigger action response plan for all predicted groundwater impacts upon each noted neighbouring groundwater system component for each excavation Ancillary facility;</p> <p>(f) trigger levels for groundwater quality, salinity and groundwater drawdown in monitoring bores and / or other groundwater users;</p> <p>(g) daily measurement of the amount of water discharged from the water treatment plants;</p> <p>(h) water quality testing of the water discharged from treatment plants;</p> <p>(i) management and mitigation measures and criteria including measures to address impacts on groundwater dependent ecosystems;</p> <p>(j) groundwater inflow to the excavations to enable a full accounting of the groundwater take from the Sydney Basin Central Groundwater Source; and</p> <p>(k) reporting of groundwater gauging at excavations, groundwater monitoring, groundwater trigger events and action responses; and</p> <p>(l) methods for providing the data collected to Sydney Water where discharges are directed to their assets.</p>	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C17	With the exception of any Construction Monitoring Programs expressly nominated by the Planning Secretary to be endorsed by the ER, all Construction Monitoring Programs must be submitted to the Planning Secretary for approval.	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C18	The Construction Monitoring Programs not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all undertakings made in the documents listed in Condition A1. Any of these Construction Monitoring Programs must be submitted to the ER for endorsement at least one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C19	Any of the Construction Monitoring Programs which require Planning Secretary approval must be endorsed by the ER and then submitted to the Planning Secretary for approval at least one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C20	Unless otherwise agreed with the Planning Secretary, construction must not commence until the Planning Secretary has approved, or the ER has endorsed (whichever is applicable), all of the required Construction Monitoring Programs and all relevant baseline data for the specific construction activity has been collected.	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C21	The Construction Monitoring Programs, as approved by the Planning Secretary or the ER has endorsed (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary or the ER (whichever is applicable), whichever is the greater.	Not Applicable	N/A	N/A
MCoA	Construction Monitoring Programs	C22	<p>The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, ER and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.</p> <p>Note: Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.</p>	Not Applicable	N/A	N/A
MCoA	Operational Environmental Management	D1	An Operational Environmental Management Plan (OEMP) must be prepared having regard to the Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment 2020). The OEMP must detail how the performance outcomes, commitments and mitigation measures made and identified in the documents listed in Condition A1 will be implemented and achieved during operation. This condition (Condition D1) does not apply if Condition D2 of this approval applies.	Not Applicable	N/A	N/A
MCoA	Operational Environmental Management	D2	<p>An OEMP is not required for the CSSI if the Proponent has an Environmental Management System (EMS) or equivalent as agreed with the Planning Secretary, and demonstrates, to the satisfaction of the Planning Secretary, that through the EMS or equivalent:</p> <p>a. the performance outcomes, commitments and mitigation measures, made and identified in the documents listed in Condition A1, and specified relevant terms of this approval can be achieved;</p> <p>b. issues identified through ongoing risk analysis can be managed; and</p> <p>c. procedures are in place for rectifying any non-compliance with this approval identified during compliance auditing, incident management or any other time during operation.</p>	Not Applicable	N/A	N/A

MCoA	Operational Environmental Management	D3	Where an OEMP is required, the Proponent must include the following OEMP Sub- plans in the OEMP: Required OEMP Sub-plan - Relevant government agencies to be consulted for each OEMP Sub-plan (a) Groundwater Management - DPIE Water (b) Bushfire Management Plan - NSW Rural Fire Service (c) Flood Emergency Management Plan - EES Group, DPIE Water, SES and Relevant Council(s)	Not Applicable	N/A	N/A
MCoA	Operational Environmental Management	D4	Each of the OEMP Sub-plans must include the information set out in Condition D2 of this approval.	Not Applicable	N/A	N/A
MCoA	Operational Environmental Management	D5	The OEMP Sub-plans must be developed in consultation with relevant government agencies as identified in Condition D3 and must include information requested by an agency to be included in an OEMP Sub-plan during such consultation. Details of all information requested by an agency to be included in an OEMP Sub-plan as a result of consultation, including copies of all correspondence from those agencies, must be provided with the relevant OEMP Sub-Plan.	Not Applicable	N/A	N/A
MCoA	Operational Environmental Management	D6	The OEMP Sub-plans must be submitted to the Planning Secretary as part of the OEMP.	Not Applicable	N/A	N/A
MCoA	Operational Environmental Management	D7	The OEMP or EMS or equivalent as agreed with the Planning Secretary, must be submitted to the Planning Secretary for information no later than one (1) month before the commencement of operation.	Not Applicable	N/A	N/A
MCoA	Operational Environmental Management	D8	The OEMP or EMS or equivalent as agreed with the Planning Secretary, as submitted to the Planning Secretary and amended from time to time, must be implemented for the duration of operation and the OEMP or EMS or equivalent must be made publicly available before the commencement of operation.	Not Applicable	N/A	N/A
MCoA	Air Quality	E1	All reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction.	Full Compliance	Yes	CEMP Section 7.7.6
MCoA	Biodiversity	E2	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.	Full Compliance	Yes	CEMP Section 7.1.3
MCoA	Biodiversity	E3	Impacts to plant community types must not exceed those identified in the documents listed in Condition A1 of this Exhibit, 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 E4 below, if required, must be provided.	The Principal Contractor must provide Sydney Metro with any assessments of additional impacts to plant community types and updated ecosystem and/or species credit requirements. Sydney Metro will submit all requests to the Planning Secretary under Condition E3	Yes	CEMP Section 7.1.4
MCoA	Biodiversity	E4	Prior to impacts on the biodiversity values set out in Table 3 and Table 4, the number and classes of ecosystem credits and species credits (like-for-like) must be retired. Ecosystem Credits Plant Community Type (PCT) ID and name 724: Broad-leaved Ironbark- Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin Bioregion - 246 835: Forest Red Gum- Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion- 217 849: Grey Box- Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion- 204 1800: Swamp OAk open forest on riverflats of Cumberland Plain and Hunter Valley- 181 (Total 848) <i>Acacia bynoeana</i> (Bynoe's Wattle)- 31 <i>Acacia pubescens</i> (Downy Wattle) - 54 <i>Allocasuarina glareicola</i> - 47 <i>Cynanchum elegans</i> (White-flowered Wax Plant)- 18 <i>Dillwynia tenuifolia</i> - 72 <i>Grevillea juniperina subsp . juniperina</i> (Juniper-leaved Grevillea) - 153 <i>Grevillea parviflora subsp . parviflora</i> (Small-flower Grevillea) - 32 <i>Marsdenia viridiflora subsp . viridiflora</i> (Endangered population - 137 <i>Marsdenia viridiflora R . Br. subsp viridiflora</i> <i>Micromyrtus minutiflora</i> - 47 <i>Pimlea curvilora var. curvilora</i> - 18 <i>Pimlea spicata</i> (Spiked Rice-flower)- 22 <i>Pultenaea parviflora</i> - 31 <i>Meridolum corneovirens</i> Cumberland Plain Land Snail - 159 <i>Myotis Macropus</i> (Southern Myotis) - 292 Total - 1,113 Table 4: Species credits required Note: Credits have been calculated using the Biodiversity Assessment Method.	Sydney Metro will retire credits specified in the EIS.	N/A	N/A
MCoA	Biodiversity	E5	The requirement to retire like-for-like ecosystem credits and species credits in Condition E4 may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the number and classes of ecosystem credits and species credits.	Sydney Metro	N/A	N/A
MCoA	Biodiversity	E6	Where evidence of compliance with the Ancillary rules: Reasonable steps to seek like- for-like biodiversity credits for the purpose of applying the variation rules has been provided to the Planning Secretary, variation rules may be applied to retire the relevant ecosystem credits and species credits as set out in the BAM Biodiversity Credit Report (Variation)	Sydney Metro	N/A	N/A
MCoA	Biodiversity	E7	Evidence of the retirement of credits in satisfaction of Condition E4 or payment to the Biodiversity Conservation Fund in satisfaction of Condition E5 must be provided to the Planning Secretary prior to commencement of works.	Sydney Metro	N/A	N/A
MCoA	Key Fish Habitat	E8	The Proponent must minimise impacts to Key Fish Habitat (KFH) as defined in Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013 update). Residual impacts to KFH, following the implementation of habitat rehabilitation or other environmental compensation measures, must be offset at a ratio of 2:1 habitat offset requirement in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013 update) and in consultation with DPI Fisheries.	Not Applicable	N/A	N/A
MCoA	Key Fish Habitat	E9	Where offsets are required in accordance with Condition E8, payment of the habitat offset requirement must be made to the DPI Fish Conservation Trust Fund prior to the commencement of Work that impacts KFH	Not Applicable	N/A	N/A
MCoA	Key Fish Habitat	E10	Where offsets are required in accordance with Condition E8, the Proponent must submit to the Planning Secretary a receipt confirming payment to the DPI Fish Conservation Trust Fund within one (1) month of making the payment.	Not Applicable	N/A	N/A
MCoA	Nest Boxes	E11	Nest Boxes must be installed one (1) month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna.	Full Compliance	Yes	CEMP Section 7.1.4
MCoA	Re-use of Timber	E12	Prior to vegetation clearing, the Proponent must identify where it is practicable for the CSSI to reuse native trees and vegetation that are to be removed. If it is not possible for the CSSI to reuse removed native trees and vegetation, the Proponent must consult with the relevant council(s), NSW National Parks & Wildlife Service, Western Sydney Parklands Trust, Greater Sydney Local Land Services, Landcare groups, DPI Fisheries and any additional relevant government agencies to determine if: (a) hollows, tree trunks (greater than 25-30 centimetres in diameter and 2-3 metres in length), mulch, bush rock and root balls salvaged from native vegetation impacted by the CSSI; and (b) collected plant material, seeds and/or propagated plants from native vegetation impacted by the CSSI, could be used by others in habitat enhancement and rehabilitation work, before pursuing other disposal options.	Full Compliance	Yes	CEMP Section 7.1.4

MCoA		E13	<p>Revegetation and the provision of replacement trees must be informed by a Tree Survey undertaken during detailed design. The Tree Survey must identify the number, type and location of any trees to be removed, except for trees that are offset under Condition E4. The Tree Survey must be submitted to the Planning Secretary for information with the Place, Urban Design and Corridor Landscape Plan required under Condition E79.</p> <p>Where trees are to be removed, the Proponent must provide a net increase in the number of replacement trees at a ratio of 2:1, except trees that are offset under Condition E4. Replacement trees must have a minimum pot size consistent with the relevant authority's plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant authority(ies).</p> <p>Note: For the purposes of this condition, the relevant authority is that State or local government authority that owns or manages the land on which the replacement trees will be planted.</p>	Principal Contractor is responsible for undertaking Tree Surveys during detailed design and providing these to the Sydney Metro prior to vegetation removal.	Yes	If trees are proposed to be removed, they will be documented in pre-clearing reports, which will be provided to SM prior to the removal of these trees.
MCoA	Biodiversity	E14	<p>The Proponent must design the watercourse crossings and the east-west regional corridor (Patons Lane) crossing to achieve the following objectives:</p> <p>(a) design of viaducts to retain and minimise clearing/disturbance of native vegetation and maximise native plant growth under the structures,</p> <p>(i) maintain and/or improve riparian/terrestrial connectivity under the viaduct and bridge structures to maximise the corridor function;</p> <p>(ii) maximise the viaduct and bridge structures span over the riparian corridor and/or remnant native vegetation which-ever is the widest;</p> <p>(iii) minimise the clearing/disturbance of native vegetation and native riparian vegetation; and</p> <p>(iv) maximise light and moisture penetration under the viaduct and bridge structures to support native plant growth;</p> <p>(b) design of culverts and other crossings incorporate the following into the design to provide for movement of aquatic and terrestrial fauna,</p> <p>(i) elevated "dry" cells to encourage terrestrial movement, and recessed "wet" cells to facilitate the movement of aquatic fauna;</p> <p>(ii) maximise light penetration into the culvert structures;</p> <p>(iii) a naturalised base along the bed of the culvert; and fauna furniture' (such as rocks, logs, ropes and ledges) to facilitate fauna movement to maintain connectivity and provide fauna passage;</p> <p>(c) design of scour protection using natural solutions such as the revegetation of banks with local native species; and</p> <p>(d) details of remnant native vegetation including riparian vegetation.</p> <p>Note: These design objectives must form part of the Place Design and Corridor Landscape Plan required under Condition E79.</p> <p>The Proponent must consult with DPIE EES, DPI Fisheries and engage suitably qualified experts in fauna crossing design to achieve the outcomes of this condition.</p>	Not applicable	N/A	N/A
MCoA	Flooding	E15	<p>The CSSI must be designed and constructed with the objective of not exceeding the flood impacts presented in the documents listed in Condition A1 or with the objective of not exceeding the flood impact criteria in Table 5 whichever is greater, within and in the vicinity of the CSSI for all flood events up to and including the one (1) per cent Annual Exceedance Probability (AEP) flood event</p> <p>Table 5: Flood Impact Criteria</p> <p>Parameter Location Criteria</p> <p>Afflux - Land zoned as residential, industrial or commercial, and critical infrastructure (Maximum 10mm to buildings that are flood prone in existing condition, No new above floor flooding, Maximum 50mm below floor level) Roads: (Maximum 50mm), Land zoned as rural, primary production, environment or public recreation (Maximum 100mm)</p> <p>Velocity - All areas (Velocities are to remain below 1 metre per second, Where existing velocities exceed 1 metre per second increased by less than 10%)</p> <p>Flood Hazard - Residential and commercial land (No increase in the flood hazard or risk to life) Roads: (No increase in the flood hazard or risk to life).</p> <p>Flood Duration - Residential and commercial buildings (No increase to duration of above floor flooding) Roads: (No more than 1 hour increase) Crown land, open space, farming, grazing and cropping land (No more than 1 hour increase).</p> <p>Measures identified in the documents listed in Condition A1 to limit flooding impacts or measures that achieve the same outcome must be incorporated into the detailed design of the CSSI.</p>	Not Applicable	N/A	N/A
MCoA	Flooding	E16	<p>Updated modelling that incorporates these measures and is calibrated and validated with consideration of the results of the Wianamatta-South Creek Catchment Flood Assessment prepared by Infrastructure NSW as part of Stage 2 of the South Creek Sector Review must be prepared by a suitably qualified flood consultant. The modelling must identify changes in post-development flood behaviour including cumulative flood impacts associated with Western Sydney International Airport and the M12, where this information is available, prior to detailed design being finalised.</p> <p>Note: Independent persons are defined in the Seeking approval from the Planning Secretary for the appointment of independent experts (DPIE, 2020).</p>	Not Applicable	N/A	N/A
MCoA	Flooding	E17	<p>Where flooding characteristics exceed the levels identified in Condition E15 above the Proponent must undertake the following:</p> <p>(a) consult with affected landowners for properties adversely flood affected as a result of the CSSI regarding appropriate mitigations; and</p> <p>(b) consult with the NSW State Emergency Service (SES) and Relevant Council(s) regarding the management of any continuous and residual flood risk from rarer flood events larger than the 1 per cent AEP and up to the probable maximum flood.</p> <p>In the event that the Proponent and the affected landowner cannot agree on the measures to mitigate the impact as described in Condition E15, the Proponent must engage a suitably qualified and experienced independent person to advise and assist in determining the impact and relevant mitigation measures.</p>	Not Applicable	N/A	N/A
MCoA	Flooding	E18	<p>Flood information including flood reports, models and geographic information system outputs must be provided to the DPIE PDPS, Relevant Council(s), DPIE EES and the SES in order to assist in preparing relevant documents and to reflect changes in flood behaviour as a result of Stage 1 of the CSSI. The DPIE PDPS, Relevant Council(s), DPIE EES and the SES must be notified in writing that the information is available no later than one (1) month following the completion of construction.</p> <p>Information requested by the DPIE PDPS, Relevant Council(s), DPIE EES or the SES must be provided no later than six (6) months following the completion of construction or within another timeframe agreed with the DPIE PDPS, Relevant Council(s), DPIE EES and the SES. The project flood models and data must be uploaded to the NSW Flood Data Portal and access must be provided to the DPIE PDPS, Relevant Council(s), DPIE EES and SES no later than one (1) month following the completion of construction.</p>	Not Applicable	N/A	N/A
MCoA	Heritage	E19	<p>The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1. Unexpected heritage finds identified by the CSSI must be managed in accordance with the Unexpected Finds Protocol outlined in Conditions E34 to E36. Consideration of avoidance and redesign to protect unexpected finds of state heritage significance must be addressed where this condition applies.</p>	Full Compliance	Yes	CEMP Section 7.5.4
MCoA	Non Aboriginal Heritage	E20	<p>The dismantling and reassembly of the jib crane at St Marys Station, if required, must only be undertaken under the supervision of a consultant experienced in the conservation of heritage machinery.</p>	Not Applicable	N/A	N/A
MCoA	Non Aboriginal Heritage	E21	<p>The St Marys Goods Shed must not be destroyed, modified or otherwise adversely affected, except as identified in the documents listed in Condition A1.</p>	Not Applicable	N/A	N/A
MCoA	Heritage	E22	<p>The Archaeological Research Design included in the documents listed in Condition A1 must be implemented during construction.</p>	Not Applicable	N/A	N/A

MCoA	Non Aboriginal Heritage	E23	Before commencement of archaeological excavation, the Proponent must, in consultation with Heritage NSW, 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. 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 Archaeological Research Design and Excavation Methodology(s) identified in the documents listed in Condition A1. More than one Excavation Director may be engaged for CSSI to exercise the functions required under the conditions of this approval.	Full Compliance	Not Triggered	No non-Aboriginal Heritage items are expected to be impacted as part of the Power Enabling Works.
MCoA	Heritage	E24	Archival photographic digital recording must be undertaken for all listed heritage items which will be affected by the CSSI. The recordings must be undertaken prior to the commencement of Work which may impact the items and documented in an Archival Recording Report. The recordings must include buildings, structures and landscape features and detailed maps showing the location of features. The archival recording must be prepared in accordance with How to Prepare Archival Records of Heritage Items (NSW Heritage Office, 1998) and Photographic Recording of Heritage Items Using Film or Digital Capture (NSW Heritage Office, 2006).	Full Compliance	Not Triggered	No non-Aboriginal Heritage items are expected to be impacted as part of the Power Enabling Works.
MCoA	Heritage	E25	The Archival Recording Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Archival Recording Report must also be provided to relevant local historical societies.	Full Compliance	Not Triggered	No non-Aboriginal Heritage items are expected to be impacted as part of the Power Enabling Works.
MCoA	Heritage	E26	Following completion of all work described in the documents listed in Condition A1 in relation to heritage items, a non-Aboriginal Archaeological Excavation Report including the details of further historical research either undertaken or to be carried out and archaeological excavations (with artefact analysis and identification of a final repository for finds) and addressing the research design, must be prepared in accordance with any guidelines and standards required by the Heritage Council of NSW and Heritage NSW.	Full Compliance	Not Triggered	No non-Aboriginal Heritage items are expected to be impacted as part of the Power Enabling Works.
MCoA	Non Aboriginal Heritage	E27	The non-Aboriginal Archaeological Excavation Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all Work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Report must also be provided to relevant local historical societies and local libraries.	Full Compliance	Not Triggered	No non-Aboriginal Heritage items are expected to be impacted as part of the Power Enabling Works.
MCoA	Aboriginal Heritage	E28	All reasonable steps must be taken so as not to harm, modify or otherwise impact Aboriginal objects or places of cultural significance except as authorised by this approval.	Full Compliance	Not Triggered	No Aboriginal Heritage items are expected to be impacted as part of the Power Enabling Works.
MCoA	Aboriginal Heritage	E29	The Registered Aboriginal Parties (RAPs) must be kept regularly informed about the CSSI. The RAPs must continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of the CSSI throughout construction.	Sydney Metro	N/A	N/A
MCoA	Aboriginal Heritage	E30	The Aboriginal Cultural Heritage Management Plan included in the documents listed in Condition A1 must be updated to include: (a) a methodology for the completion of pedestrian surveys for all areas within the project footprint yet to be surveyed; (b) procedures for undertaking further test excavation and, if necessary, salvage excavations prior to the commencement of works in areas subject to further test excavation; (c) mapping that clearly outlines all areas yet to be subject to survey, test excavations, and salvage excavations; (d) a procedure to update mapping following the completion of survey, test excavations, and salvage excavations that detail the archaeological works conducted across the project footprint; (e) a procedure for updating the predictive model following the identification of new Aboriginal heritage items; and (f) a procedure to report and update the effectiveness of the Aboriginal Cultural Heritage Management Plan following the completion of survey, test excavation activities or significant artefact finds. The updated Plan must be submitted to the Planning Secretary for information prior to works in areas identified for further test excavations. Note: Salvage excavations in the areas identified for salvage in documents in Condition A1, may occur prior to additional test excavations occurring.	Sydney Metro	N/A	N/A
MCoA	Aboriginal Heritage	E31	The updated Aboriginal Cultural Heritage Management Plan must be implemented for the duration of construction.	Not Applicable	N/A	N/A
MCoA	Aboriginal Heritage	E32	At the completion of Aboriginal cultural heritage test and salvage excavations, an Aboriginal Cultural Heritage Excavation Report(s) must be prepared by a suitable qualified expert. The Aboriginal Cultural Heritage Excavation Report(s), must: (a) be prepared in accordance with the Guide to Investigation, assessing and reporting on Aboriginal cultural heritage in NSW, OEH 2011 and the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, DECCW 2010; and (b) document the results of the archaeological test excavations and any subsequent salvage excavations (with artefact analysis and identification of a final repository for finds). The RAPs must be given a minimum of 28 days to consider the report and provide comments before the report is finalised. The final report must be provided to the Planning Secretary, Heritage NSW, the relevant Councils, Gandangara LALC and Deerubbin LALC, the RAPs and local libraries within 24 months of the completion of the Aboriginal archaeological excavations (both test and salvage).	Not Applicable	N/A	N/A
MCoA	Aboriginal Heritage	E33	Where previously unidentified Aboriginal objects or places of cultural significance are discovered, all work must immediately stop in the vicinity of the affected area. Works potentially affecting the previously unidentified objects must not recommence until Heritage NSW has been informed. The measures to consider and manage this process must be specified in the Unexpected Heritage Finds and Human Remains Procedure required by Condition E34 and include registration in the Aboriginal Heritage Information Management System (AHIMS).	Full Compliance	Yes	CEMP Appendix G
MCoA	Unexpected Finds and Human Remains	E34	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.	Full Compliance	Yes	CEMP Appendix G
MCoA	Unexpected Finds and Human Remains	E35	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.	Full Compliance	Yes	CEMP Appendix G
MCoA	Unexpected Finds and Human Remains	E36	The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction. Where archaeological investigations have been undertaken as a result of Unexpected Finds notifications then a Final Archaeological Report must be provided in accordance with Heritage Council guidance and standard requirements for final reporting under Excavation Permits. 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 conditions prevents separate procedures for the Unexpected Heritage Finds and Human Remains Procedure.	Full Compliance	Yes	CEMP Appendix G
MCoA	Noise and vibration	E37	A detailed land use survey must be undertaken to confirm sensitive land use(s) (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration and construction ground-borne noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Detailed Noise and Vibration Impact Statements required under Condition E47.	Full Compliance	Yes	CNVMP Appendix A

MCoA	Noise and vibration	E38	Work must only be undertaken during the following hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays.	Full Compliance	Yes	CNVMP Section 5.2
MCoA	Noise and vibration	E39	Except as permitted by an EPL or approved in accordance with the Out of Hours Works Protocol required by Condition E42, highly noise intensive work that result in an exceedance of the applicable NML at the same receiver must 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 (3) hours, with a minimum cessation of work of not less than one (1) hour. For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work.	Full Compliance	Yes	CNVMP Section 5.2
MCoA	Noise and Vibration	E40	This approval does not permit blasting.	Not Applicable	N/A	N/A
MCoA	Noise and Vibration	E41	Notwithstanding Conditions E38 and E39 work may be undertaken outside the hours specified in the following circumstances: (a) Safety and Emergencies, including: (i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (ii) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or (b) Low impact, including: (i) construction that causes LAeq(15 minute) noise levels: • no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s); and (ii) construction that causes: • continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), or • intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or (c) By Approval, including: (i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (ii) works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E42; or (iii) negotiated agreements with directly affected residents and sensitive land user(s); or (d) By Prescribed Activity, including: (i) tunnelling and ancillary support activities (excluding cut and cover tunnelling and surface works not directly supporting tunneling) are permitted 24 hours a day, seven days a week; or (ii) grout batching at the Orchard Hills construction site is permitted 24 hours per day, seven days per week; or (iii) delivery of material that is required to be delivered outside of standard construction hours in Condition E38 to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to / from the Orchard Hills ancillary facility; or (iv) haulage of spoil generated through tunnelling is permitted 24 hours per day, seven days per week <u>except between the hours of 10:00 pm and 7:00 am to / from the Orchard Hills construction site; or</u>	Full Compliance	Yes	CNVMP Section 5.2
	Out-of-Hours Work Protocol – Work not subject to an EPL	E42	An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of work (not subject to an EPL) which are outside the hours defined in Conditions E38 and E39. The Protocol must be approved by the Planning Secretary before commencement of the out-of-hours work. The Protocol must be prepared in consultation with the ER. The Protocol must provide: (a) justification for why out-of-hours work need to occur; (b) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: (i) the ER review all proposed out-of-hours activities and confirm their risk levels; (ii) low risk activities can be approved by the ER; and (iii) high risk activities that are approved by the Planning Secretary; (c) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria; (d) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods consistent with the requirements of Condition E56. The measures must take into account the predicted noise levels and the likely frequency and duration of the out- of-hours works that sensitive land user(s) would be exposed to, including the number of noise awakening events; (e) procedures to facilitate the coordination of out-of-hours work including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided; and (f) notification arrangements for affected receivers for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works. This condition does not apply if the requirements of Condition E41 are met. Note: Out-of-hours work is any work that occurs outside the construction hours identified in Condition E38 and E39.	Sydney Metro will submit the Out of Hours Protocol to the Planning Secretary for Approval.	Yes	CNVMP Section 5.2
MCoA	Noise and Vibration	E43	Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria: (a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009); (b) preferred vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure); (c) Australian Standard AS 2187.2 - 2006 "Explosives - Storage and Use - Use of Explosives" (for human exposure); (d) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and (e) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage). Any work identified as exceeding the noise management levels and / or vibration criteria must be managed in accordance with the Noise and Vibration CEMP Sub-plan. Note: The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.	Full Compliance	Yes	CNVMP Section 5.2
MCoA	Noise and Vibration	E44	All reasonable and feasible mitigation measures must be applied when the following residential ground-borne noise levels are exceeded: (a) evening (6:00 pm to 10:00 pm) — internal LAeq(15 minute): 40 dB(A); and (b) night (10:00 pm to 7:00 am) — internal LAeq(15 minute): 35 dB(A). The mitigation measures must be outlined in the Noise and Vibration CEMP Sub-plan, including in any Out-of-Hours Work Protocol, required by Condition E42.	Full Compliance	Yes	CNVMP Section 5.4.1 CNVMP Appendix B
MCoA	Noise and Vibration	E45	Noise generating work in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	Full Compliance	Yes	CNVMP Section 7.3 CNVMP Appendix B

MCoA	Noise and Vibration	E46	Industry best practice construction methods must be implemented where reasonably practicable to ensure that noise and vibration levels are minimised around sensitive land use(s). Practices may include, but are not limited to: (a) use of regularly serviced low sound power equipment; (b) at source control, temporary noise barriers (including the arrangement of plant and equipment) around noisy equipment and activities such as rock hammering and concrete cutting; (c) use of acoustic sheds to minimise tunnelling and station box exactions noise impacts; (d) use of non-tonal reversing alarms; and (e) use of alternative construction and demolition techniques.	Full Compliance	Yes	CNVMP Section 7.1 CNVMP Appendix B
MCoA	Noise and vibration	E47	Detailed Noise and Vibration Impact Statements (DNVIS) must be prepared for any work that may exceed the NMLs, vibration criteria and / or ground-borne noise levels specified in Conditions E43 and E44 at any residence outside construction hours identified in Condition E38, or where receivers will be highly noise affected or subject to vibration levels as above those otherwise determined as appropriate by a suitably qualified structural engineer under Condition E87. The DNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the works. A copy of the DNVIS must be provided to the ER before the commencement of the associated works. The Planning Secretary and the EPA may request a copy (ies) of the DNVIS.	Full Compliance	Yes	CNVMP Section 6.4.1 CNVMP Appendix B
MCoA	Noise and Vibration	E48	Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers must be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the Noise and Vibration CEMP Sub-plan.	Full Compliance	Yes	CNVMP Section 7
MCoA	Noise and Vibration	E49	Where sensitive land use(s) are identified in Appendix B the highly noise affected criteria during typical case construction, at-path barrier controls such as acoustic sheds and/or noise walls, or at-property treatment, or a combination of at-path and at-property treatment implemented must be implemented to reduce typical case construction noise below the highly noise affected criteria at each relevant sensitive landuse(s). Activities that would exceed highly noise affected criteria must not commence until the measures identified in this condition have been implemented, unless otherwise agreed with the Planning Secretary.	Full Compliance	Yes	CNVMP Section 7
MCoA	Noise and vibration	E50	For all construction sites where acoustic sheds are installed, the sheds must be designed, constructed and operated to minimise noise emissions. This would include the following considerations: (a) all significant noise producing equipment that would be used during the night-time would be inside the sheds, where feasible and reasonable; (b) noise generating ventilation systems such as compressors, scrubbers, etc, would be located inside the sheds and external air intake/discharge ports would be appropriately acoustically treated; and (c) the doors of acoustic sheds would be kept closed during the night-time period. Where night-time vehicle access is required at sites with nearby residences, the shed entrances would be designed and constructed to minimise noise breakout.	Not Applicable	N/A	N/A
MCoA	Noise and Vibration	E51	Where Condition E49 determines that at-property treatment (temporary or permanent) is the appropriate measure to reduce noise impacts, this at-property treatment must be offered to landowners of residential properties for habitable living spaces, unless other mitigation or management measures are agreed to by the landowner. Landowners must be advised of the range of options that can be installed at or in their property and given a choice as to which of these they agree to have installed. A copy of all guidelines and procedures that will be used to determine at-property treatment at their residence must be provided to the landowner.	Full Compliance	Not Triggered	At-property treatment has not been identified as being required for the Power Enabling Works.
MCoA	Noise and Vibration	E52	Any offer for at-property treatment or the application of other noise mitigation measures in accordance with Condition E51, does not expire until the noise impacts specified in Condition E49, affecting that property are completed, even if the landowner initially refuses the offer. Note: If an offer has been made but is not accepted, this does not preclude the commencement of construction under Condition E49.	Full Compliance	Not Triggered	At-property treatment has not been identified as being required for the Power Enabling Works.
MCoA	Noise and Vibration	E53	The implementation of at-property treatment does not preclude the application of other noise and vibration mitigation and management measures including temporary and long term accommodation.	Full Compliance	Not Triggered	At-property treatment has not been identified as being required for the Power Enabling Works.
MCoA	Noise and Vibration	E54	Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to verify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques.	Full Compliance	Yes	CEMP Section 7.5.4.1 CNVMP Section 8.3.3
MCoA	Noise and Vibration	E55	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.	Full Compliance	Yes	CEMP Section 7.5.4.1 CNVMP Section 8.3.3
MCoA	Noise and Vibration	E56	All work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must: (a) reschedule any work to provide respite to impacted noise sensitive land use(s) so that the respite is achieved in accordance with Condition E57; or (b) consider the provision of alternative respite or mitigation to impacted noise sensitive land use(s); and (c) provide documentary evidence to the ER in support of any decision made by the Proponent in relation to respite or mitigation. The consideration of respite must also include all other approved Critical SSI, SSI and SSD projects which may cause cumulative and / or consecutive impacts at receivers affected by the delivery of the CSSI.	Full Compliance	Yes	CNVMP Section 7
MCoA	Noise and Vibration	E57	In order to undertake out-of-hours work outside the work hours specified under Condition E38, appropriate respite periods for the out-of-hours work must be identified in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with: (a) a progressive schedule for periods no less than three (3) months, of likely out-of-hours work; (b) a description of the potential work, location and duration of the out-of-hours work; (c) the noise characteristics and likely noise levels of the work; and (d) likely mitigation and management measures which aim to achieve the relevant NMLs under Condition E43 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers). The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour work must be provided to the ER, EPA and the Planning Secretary prior to the out-of-hours work commencing. Note: Respite periods can be any combination of days or hours where out-of-hours work would not be more than 5 dB(A) above the RBL at any residence.	Sydney Metro will provide the Planning Secretary with the outcomes of community engagement, the identified respite periods and the scheduling of the likely out-of-hours works. The Principal Contractor will provide Sydney Metro with all information and documentation it requires to provide the Planning Secretary with the outcomes of community engagement, the identified respite periods and the scheduling of the likely out-of-hours works.	Yes	CNVMP Section 7

MCoA	Noise and Vibration	E58	<p>The Proponent must prepare an Operational Noise and Vibration Review (ONVR) to confirm noise and vibration mitigation measures that would be implemented for the Operation of the CSSI for the ultimate service. The ONVR must be prepared as part of the iterative design development and in consultation with the EPA, relevant council(s), other relevant stakeholders and must:</p> <ul style="list-style-type: none"> (a) identify appropriate Operational noise and vibration objectives and levels for surrounding development, including existing and potential future (as known at the time of ONVR preparation) sensitive land use(s); (b) confirm the operational noise and vibration predictions based on the expected final design. Confirmation must be based on an appropriately calibrated noise model; (c) identify sensitive landuses that are predicted to exceed: <ul style="list-style-type: none"> (i) noise criteria set out in the Rail Infrastructure Noise Guideline (EPA, 2013), Noise Policy for Industry (EPA, 2017); and (ii) vibration goals for human exposure for existing sensitive land use(s), as presented in Assessing Vibration: a Technical Guideline (DECC, 2006); (d) identify all noise and vibration mitigation measures including location, type and timing of mitigation measures, with a focus on: <ul style="list-style-type: none"> (i) source control and design; (ii) at the receiver (if relevant); and (iii) 'best practice' achievable noise and vibration outcome for each activity; (e) describe how the final suite of mitigation measures will achieve: <ul style="list-style-type: none"> (i) the noise criteria outlined in the Rail Infrastructure Noise Guideline (EPA, 2013) and Noise Policy for Industry (EPA, 2017); and (ii) vibration goals for human exposure for existing sensitive land use(s), as presented in Assessing Vibration: a Technical Guideline (DECC, 2006); (f) include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures being offered; (g) include procedures for operational noise and vibration complaints management, including investigation and monitoring (subject to complainant agreement). <p>The ONVR must be verified by an independent acoustic expert and submitted to the Planning Secretary for approval before the implementation of any operational noise mitigation measures.</p> <p>The Proponent must implement the identified noise and vibration control measures and make the ONVR publicly available.</p> <p>Note: The design of noise barriers and the like must be undertaken in consultation with the relevant stakeholders, including affected landowners and businesses (or a representative of a business), Western Parklands City Authority and relevant council(s) as part of the Place, Urban Design and Corridor Landscape</p>	Not Applicable	N/A	N/A
MCoA	Noise and Vibration	E59	<p>Operational noise mitigation measures as identified in Condition E58 that will not be physically affected by work, must be implemented within six months of submitting the ONVR, unless otherwise agreed by the Planning Secretary. Where implementation of operational noise mitigation measures are not proposed to be implemented in accordance with this requirement, the Proponent must submit to the Planning Secretary a report providing justification as to why, along with details of temporary measures that would be implemented to reduce construction noise impacts, until such time that the operational noise mitigation measures are implemented.</p> <p>The report must be submitted to the Planning Secretary within six months of submitting the ONVR.</p> <p>Note: Not having finalised detailed design is not sufficient justification for not implementing the proposed mitigation measures.</p>	Not applicable	N/A	N/A
MCoA	Noise and Vibration	E60	<p>Within 12 months of the commencement of operation of the CSSI, the Proponent must undertake monitoring of operational noise to compare actual noise performance of the CSSI against the noise performance predicted in the review of noise mitigation measures required by Condition E58. An Operational Noise and Vibration Compliance Report (ONVCR) must be prepared to document this monitoring and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> (a) noise and vibration monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under Condition E58; (b) methodology, location and frequency of noise and vibration monitoring undertaken, including monitoring sites at which CSSI noise and vibration levels are ascertained, with specific reference to locations indicative of impacts on receivers; (c) a review of the performance of the CSSI against the: <ul style="list-style-type: none"> (i) operational noise levels in terms of criteria and noise goals established in the NSW Rail Infrastructure Noise Guideline (EPA 2013) and Noise Policy for Industry (EPA, 2017); (ii) vibration goals for human exposure for existing sensitive land use(s), as presented in Assessing Vibration: a Technical Guideline (DECC, 2006); (d) details of any complaints and enquiries received in relation to Operational noise and vibration generated by the CSSI (between the date of commencement of Operation and the date the report was prepared); (e) an assessment of the performance and effectiveness of applied noise and vibration mitigation measures together with a review and if necessary, reassessment of mitigation measures; (f) identification of: <ul style="list-style-type: none"> (i) additional measures to meet the criteria outlined in the NSW Rail Infrastructure Noise Guideline (EPA 2013) and Noise Policy for Industry (EPA, 2017), (ii) additional measures to meet the vibration goals for human exposure for existing sensitive land, as presented in Assessing Vibration: a Technical Guideline (DECC, 2006); (iii) when these measures are to be implemented; and (iv) how their effectiveness is to be measured and reported to the Planning Secretary and the EPA. <p>The ONVCR must be submitted to the Planning Secretary and the EPA within 60 days of completing the Operational noise and vibration monitoring and made publicly available.</p> <p>Note: Refer to Condition B5 about how personal information will be handled.</p>	Not applicable	N/A	N/A
MCoA	Traffic, Transport, and Access	E61	Wayfinding information must be incorporated on temporary hoardings to guide pedestrians around the St Marys construction site and enhance their understanding and experience of the locality and space.	Not applicable	N/A	N/A
MCoA	Traffic, Transport, and Access	E62	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, 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.	Full Compliance	Yes	CEMP Section 7.8.4
MCoA	Lighting and security	E63	<p>The CSSI must be designed with consideration of:</p> <ul style="list-style-type: none"> (a) the design objectives, principles and guidelines identified in documents listed in Condition A1; (b) the principles and objectives of the draft Connecting with Country Framework; (c) relevant land use changes, masterplans and initiatives, where this information is known and/or available; (d) existing and proposed future local context and character; and (e) transport and land use integration and system functionality in the context of precincts, to the extent it is known and/or defined. <p>Responses to items (a) – (e) must be reviewed by the Design Review Panel (DRP) to inform the design of permanent built works and landscape design of the CSSI. The outcome of the DRP review must be provided to the Planning Secretary prior to the submission of the Place, Urban Design and Corridor Landscape Plan (PUDCLP).</p> <p>Note: In accordance with Condition A10 and Condition A16, the requirements of this condition can be staged.</p>	Not applicable	N/A	N/A
MCoA	Active Transport	E64	<p>The CSSI must be constructed and operated with the objective of minimising light spill to surrounding properties. All lighting associated with the CSSI must be consistent with the requirements of:</p> <ul style="list-style-type: none"> (a) ASINZS 4282:2019 Control of the obtrusive effects of outdoor lighting, relevant Australian Standards in the series ASINZS 1158 - Lighting for Roads and Public Spaces; (b) NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports; and (c) NASF Guideline C: Managing the risk of wildlife strikes in the vicinity of airports. <p>Mitigation measures must be provided to manage residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.</p>	Full Compliance	Yes	CEMP Section 7.8.4
MCoA	Design Guidance and Standards - Active Transport	E65	Designs must have regard to the Movement and Place Framework relevant guidance including the 'Walking Space Guide: Towards Pedestrian Comfort and Safety' (TfNSW 2020) and the 'Cycleway Design Toolbox: Designing for Cycling and Micromobility' (TfNSW 2020).	Not Applicable	N/A	N/A

MCoA		E66	Active transport facilities must be designed, constructed and/or rectified in accordance with the Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads, 2017) and relevant Australian Standards (AS) such as AS 1428.1-2009 Design for access and mobility. The active transport links must also incorporate relevant Crime Prevention Through Environmental Design principles.	Not Applicable	N/A	N/A
MCoA	Design Review Panel and Design Review - Panel Membership	E67	The Proponent must establish an independent Design Review Panel (DRP) to provide advice and recommendations to the Proponent during the CSSI's design development and construction to facilitate quality design and place outcomes. The DRP must be formed and hold its first meeting within six months of the date of this approval, or as otherwise agreed with the Planning Secretary. Note: Nothing in this approval prevents the use of an existing design panel as the Design Review Panel convened for this project where the function and composition of that panel complies with the terms of this approval.	Not Applicable	N/A	N/A
MCoA	Design Review Panel and Design Review - Panel Membership	E68	The responsibilities of the Design Review Panel include: (a) providing advice and recommendations to the Proponent for consideration in the design development of the CSSI (b) provide advice on the application of Sydney Metro – Western Sydney Airport Submissions Report – Appendix D Design Guidelines to key design elements in relation to place making, architecture, heritage, urban and landscape design and artistic aspects of the CSSI; and (c) reviewing and endorsing any updates to the Sydney Metro – Western Sydney Airport Submissions Report – Appendix D Design Guidelines. The Panel's advice must be consistent with the CSSI as approved.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E69	The DRP must be chaired by the NSW Government Architect (or their nominee), and must be comprised of, where relevant, by suitably qualified, experienced and independent professional(s) in each of the fields of: (a) urban design and place making; (b) landscape architecture; and (c) architecture. The Panel may seek advice from suitably qualified, experienced independent professionals in other fields as required, including but not limited to sustainability, active transport and non-Aboriginal heritage. The Panel must also seek appropriate expertise to ensure Aboriginal cultural heritage and cultural values inform its advice.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E70	Panel members must be sourced from the NSW State Design Review Panel Pool, or otherwise be approved by the NSW Government Architect.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E71	Prior to forming the DRP, a Design Review Panel Terms of Reference is to be developed and endorsed by the NSW Government Architect. The Terms of Reference must be submitted to the Planning Secretary once it is endorsed by the NSW Government Architect and: (a) must be generally consistent with the NSW State Design Review Panel Terms of Reference (version 5); (b) outline the frequency of DRP meetings, coordinated with the Proponent's program requirements, as outlined in Condition E76, to ensure timely advice and design adjustment; and (c) identify cessation arrangements.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E72	The DRP must be operated and managed in accordance with the Design Review Panel Terms of Reference.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E73	The NSW Government Architect must, after consultation with the Proponent, appoint an appropriately qualified and experienced design advisor to the DRP and may appoint an alternate design advisor. The advisor must attend meetings of the Panel. The advisor may also be invited by the Panel to assist with decisions regarding the Panel's recommendations and record the Panel's advice and recommendations.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E74	The relevant council may be invited to the meetings of the Panel as observers or to provide feedback on key design elements of the CSSI.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E75	DRP advice and recommendations, as issued by the Panel, and the Proponent's response to each recommendation must be included when submitting the final PUDCLP to the Planning Secretary for information.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E76	The Proponent must provide the design development schedule to the DRP prior to its first meeting, including details of when relevant elements of the detailed design will be available for review by the Panel. The schedule must be updated every three months until the detailed design process is complete.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E77	A Place, Urban Design and Corridor Landscape Plan (PUDCLP) must be prepared to document and illustrate the permanent built works and landscape design of the CSSI and how these works are to be maintained. The PUDCLP must be: (a) prepared by a suitably qualified and experienced person(s) in consultation with the community (including the affected landowners and businesses or a representative of the businesses), Western Parklands City Authority, Western Sydney Planning Partnership and relevant council(s); (b) reviewed by an independent and suitably qualified and experienced person nominated by the DRP; (c) submitted to the Planning Secretary prior to the construction of permanent built surface works and/or landscaping, excluding those elements which for ecological requirements, or technical requirements, or requirements as agreed by the Planning Secretary do not allow for alternate design outcomes; and (d) implemented during construction and operation of the CSSI. Note: The PUDCLP may be developed and considered in stages to facilitate design progression and construction. Any such staging and associated approval would need to facilitate a cohesive final design and not limit final design outcomes.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E78	The PUDCLP must document how the following matters have been considered in the design and landscaping of the project: (a) the requirements of Conditions E63 to E65, and (b) advice and recommendations from the DRP.	Not Applicable	N/A	N/A
MCoA	Urban Design and Placemaking	E79	The PUDCLP must include descriptions and visualisations (as appropriate) of: (a) design of the permanent built elements of the CSSI, including stabling and maintenance and ancillary facilities, service facilities and tunnel portals; (b) plans for station precincts including but not limited to (i) justification of the spatial scope of each station precinct plan; (ii) provision for public art and heritage interpretation installations; (iii) placemaking opportunities, having regard to placemaking initiatives in Western Sydney Aerotropolis planning documents; (iv) interchange access plans developed in consultation with the Traffic and Transport Liaison Group; (v) active transport connections and end of trip facilities, design of pedestrian and cycle access, facilities and fixtures; (vi) design of commuter car parking elements, where relevant; (c) landscaping and building design opportunities to mitigate visual impacts and minimise light spill on the nearby residences; (d) the design of watercourse crossings and east-west corridor movements to give to effect of Condition E14; (e) landscaping: (i) landscape plan, hard and soft elements, for the corridor and the station precincts (ii) use of native species from the relevant native vegetation community (or communities), where identified as appropriate; (iii) water sensitive urban design initiatives (vii) management and routine maintenance standards and regimes for design elements and landscaping work (including weed management) to ensure the success of the design; (viii) measures to prevent wildlife strike risk in proximity to Western Sydney International Airport; (f) details of strategies to rehabilitate, regenerate or revegetate disturbed areas, where relevant; (g) management and routine maintenance standards and regimes for design elements and landscaping work (including weed management) to ensure the success of the design; (h) operational maintenance standards; and (i) the timing and responsibilities for implementation of elements included within the PUDCLP.	Not Applicable	N/A	N/A

MCoA	Operational maintenance	E80	The ongoing maintenance and operation costs of urban design, open space, landscaping and recreational items and work implemented as part of this approval remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Before the transfer of assets, the Proponent must maintain items and work to at least the design standards established in the PUDCLP, required by Condition E79. The Planning Secretary must be advised prior to the transfer of the asset(s) to the relevant authority.	Not Applicable	N/A	N/A
MCoA	Operational maintenance	E81	Should any plant loss occur during the maintenance period the plants must be replaced by the same plant species unless it is determined by a suitably qualified person that a different species is more suitable for that location.	Not Applicable	N/A	N/A
MCoA	Socio-Economic Land Use and Property	E82	The CSSI must be designed and constructed with the objective of minimising impacts to, and interference with third party property, and that such infrastructure and property is protected during construction.	Full Compliance	Noted	Noted NVMP vibration mitigation measures
MCoA	Socio-Economic Land Use and Property	E83	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.	Full Compliance	Yes	Section 6.7.4 Complaints Management CEMP
MCoA	Property, Land use and Socio-Economic Impacts	E84	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 and the further assessment carried out under mitigation measure GW1 of the Submissions Report as being at risk of damage before commencement of any work that could impact on the subject surface / subsurface structure. The results of the surveys must be documented in a Pre-construction Condition Survey Report for each item surveyed. Copies of Pre-construction Condition Survey Reports must be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, and no later than one (1) month before the commencement of the work that could impact on the subject surface / subsurface structure.	Not Applicable	N/A	N/A
MCoA	Property, Land use and Socio-Economic Impacts	E85	Condition surveys of all items for which condition surveys were undertaken in accordance with Condition E84 must be undertaken by a suitably qualified and experienced person after completion of the work identified in Condition E84. 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.	Not Applicable	N/A	N/A
MCoA	Property, Land use and Socio-Economic Impacts	E86	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 E84 unless another timeframe is agreed with the owner of the affected surface or sub-surface structure or recommended by the Independent Property Impact Assessment Panel (IPIAP).	Full Compliance for any damage associated with the Works	Noted	Noted
MCoA	Property, Land use and Socio-Economic Impacts	E87	Appropriate equipment to monitor areas in proximity of ancillary facilities and the tunnel route must be installed during construction has stabilised with particular reference to at risk buildings, structures and utilities identified in the condition surveys required by Condition E84 and / or geotechnical analysis as required. If monitoring during construction indicate exceedance of the vibration criteria identified in the DNVIS prepared under Condition E47, or levels otherwise determined as appropriate by a suitably qualified structural engineer, then all construction affecting settlement must cease immediately and must not resume until fully rectified or a revised method of construction is established that will ensure protection of affected buildings.	Not Applicable	N/A	N/A
MCoA	Property, Land use and Socio-Economic Impacts	E88	An IPIAP must be established prior to tunnelling activities commencing. The Planning Secretary must be informed of the members of the IPIAP and must comprise geotechnical and engineering experts independent of the design and construction team. The IPIAP will be responsible for independently verifying condition surveys undertaken under Conditions E84 and E85, the resolution of property damage disputes and the establishment of ongoing settlement monitoring requirements.	Not Applicable	N/A	N/A
MCoA	Property, Land use and Socio-Economic Impacts	E89	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.	Not Applicable	N/A	N/A
MCoA	Property, Land use and Socio-Economic Impacts	E90	Settlement must be monitored for any period beyond the minimum timeframe requirements of Condition E91 if directed so by the IPIAP following its review of the monitoring data from the period not less than six (6) months after settlement has stabilised, consistent with Condition E87. The results of the monitoring must be made available to the Planning Secretary upon request.	Not Applicable	N/A	N/A
MCoA	Small Business Owners Engagement Plan(s)	E91	Small Business Owners Engagement Plan(s) must be prepared for St Marys and implemented in accordance with the Overarching Community Communication Strategy to minimise impact on small businesses directly affected by construction activities at St Marys during construction. The plan must be prepared and submitted to the Planning Secretary for information before the commencement of construction at St Marys.	Not Applicable	N/A	N/A
MCoA	Soil and contamination	E92	Before commencement of any construction that would result in the disturbance of medium to high risk contaminated sites as identified in the documents identified in Condition A1, Detailed Site Investigations (for contamination) must be conducted to determine the full nature and extent of the contamination. The Detailed Site Investigation Report(s) and the subsequent report(s), must be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. The Detailed Site Investigations must be undertaken in accordance with guidelines made or approved under section 105 of Contaminated Land Management Act 1997 (NSW). Note: Nothing in this condition prevents the Proponent from preparing individual Detailed Site Investigation Reports (for contamination) for separate sites.	Full Compliance	N/A	Due to the scope and scale of the works, DSI's are not proposed. In-situ sampling and waste classification will occur prior to ground disturbance within any AEC to determine extent of contamination. Results will guide management during construction in consultation with Contaminated Land Consultant.
MCoA	Soil and contamination	E93	Should remediation be required to make land suitable for the final intended land use, a Remedial Action Plan must be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. The Remedial Action Plan must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997 (NSW) and must include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use when the Remedial Action Plan is implemented. Note: Nothing in this condition prevents the Proponent from preparing individual Remedial Action Plans for separate sites.	Full Compliance	N/A	N/A
MCoA	Soil and contamination	E94	Before commencing remediation, a Section B Site Audit Statement(s) must be prepared by an NSW EPA-accredited Site Auditor that certifies that the Remedial Action Plan(s) is/are appropriate and that the site can be made suitable for the proposed use. The Remedial Action Plan(s) must be implemented and any changes to the Remedial Action Plan(s) must be approved in writing by the NSW EPA-accredited Site Auditor. Note: Nothing in this condition prevents the Proponent from engaging an NSW EPA-accredited Site Auditor to prepare individual Site Audit Statements for Remedial Action Plans for separate sites.	Full Compliance	N/A	N/A
MCoA	Soil and contamination	E95	Validation Report(s) must be prepared in accordance with Consultants Reporting on Contaminated Land: Contaminated Land Guidelines (EPA, 2020) and relevant guidelines made or approved under section 105 of the Contaminated Land Management Act 1997 (NSW). Note: Nothing in this condition prevents the Proponent from preparing individual Validation Reports for separate sites.	Full Compliance	N/A	N/A

MCoA	Soil and contamination	E96	A Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, must be submitted to the Planning Secretary and the Relevant Council(s) after remediation and before the commencement of operation of the CSSI. Note: Nothing in this condition prevents the Proponent from obtaining Section A Site Audit Statements for individual parcels of remediated land.	Full Compliance, except Sydney Metro will submit documents to the Planning Secretary	N/A	N/A
MCoA	Soil and contamination	E97	A copy of Detailed Site Investigation Report(s), Remedial Action Plan(s), Validation Report(s), Site Audit Report(s) and Site Audit Statement(s) must be submitted to the Planning Secretary and the Relevant Council(s) for information	Full Compliance, except Sydney Metro will submit documents to the Planning Secretary	N/A	N/A
MCoA	Soil and contamination	E98	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared before the commencement of construction and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	Full Compliance	Yes	CEMP Section 7.3.4 CEMP Appendix M
MCoA	Soil and contamination	E99	The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.	Full Compliance	Yes	CEMP Section 7.3.4
MCoA	Sustainability	E100	A Sustainability Plan must be prepared to achieve an Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability rating of +75 (Version 1.2) (or equivalent level of performance using a demonstrated equivalent rating tool) or a 5- Star Green Star rating (or equivalent level of performance using a demonstrated equivalent rating tool).	Sydney Metro		N/A
MCoA	Sustainability	E101	The Sustainability Plan must be submitted to the Planning Secretary for information within six (6) months of the date of this approval and must be implemented throughout construction and operation. Note: Nothing in this condition prevents the Proponent from preparing separate Sustainability Strategies for the construction and operational stages of the CSSI.	Sydney Metro		N/A
MCoA	Sustainability	E102	A Water Reuse Strategy must be prepared, which sets out options for the reuse of collected stormwater and groundwater during construction and operation. The Water Reuse Strategy must include, but not be limited to: (a) evaluation of reuse options; (b) details of the preferred reuse option(s), including volumes of water to be reused, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required; (c) measures to avoid misuse of recycled water as potable water; (d) consideration of the public health risks from water recycling; and (e) time frame for the implementation of the preferred reuse option(s). The Water Reuse Strategy must be prepared based on best practice and advice sought from relevant agencies, as required. The Strategy must be applied during construction. Justification must be provided to the Planning Secretary if it is concluded that no reuse options prevail. A copy of the Water Reuse Strategy must be made publicly available. Note: Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational stages of the CSSI.	Not Applicable	N/A	N/A
MCoA	Traffic and Transport	E103	Construction Traffic Management Plans (CTMPs) must be prepared in accordance with the Construction Traffic Management Framework. A copy of the CTMPs must be submitted to the Planning Secretary for information before the commencement of any construction in the area identified and managed within the relevant CTMP.	Full Compliance	Yes	Table 7-31 CEMP
MCoA	Management of Heavy Vehicle Movements	E104	The locations of all Heavy Vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction.	Full Compliance	Yes	Table 7-31 CEMP
MCoA	Management of Heavy Vehicle Movements	E105	Local roads proposed to be used by Heavy Vehicles to directly access ancillary facilities / construction sites that are not identified in the documents listed in Condition A1 must be approved by the Planning Secretary and be included in the CTMP.	Full Compliance	Yes	Table 7-31 Section 1.1.3.1 CEMP
MCoA	Management of Heavy Vehicle Movements	E106	All requests to the Planning Secretary for approval to use local roads under Condition E105 above must include the following: (a) a swept path analysis; (b) demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two-way traffic flow on two-way roadways; (c) details as to the date of completion of the road dilapidation surveys for the subject local roads; and (d) measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times; and (e) written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items (a) to (d) of this condition.	Full Compliance	Yes	Table 7-31 Section 1.1.3.1 CEMP
MCoA	Management of Heavy Vehicle Movements	E107	Before any local road is used by a Heavy Vehicle for the purposes of construction of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the Relevant Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of the CSSI.	Full Compliance	Yes	Table 7-31 CEMP
MCoA	Road Dilapidation	E108	If damage to roads occurs as a result of the construction of the CSSI, the Proponent must either (at the Relevant Road Authority's discretion): (a) compensate the Relevant Road Authority for the damage so caused; or (b) rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report.	Full Compliance	Yes	CEMP Section 7.9.4
MCoA	Construction Parking and Access Management	E109	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to: (a) minimise parking on public roads; (b) minimise idling and queueing on state and regional roads; (c) not carry out marshalling of construction vehicles near sensitive user(s); (d) not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided; and (e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMP.	Full Compliance	Yes	CEMP Section 7.9.4
MCoA	Property Access	E110	Access to all utilities and properties must be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier.	Full Compliance	Yes	CEMP Section 7.9.4
MCoA	Property Access	E111	The Proponent must maintain access to properties during the entirety of works unless an alternative access is agreed in writing with the landowner(s) whose access is impacted by the CSSI works.	Full Compliance	Yes	CEMP Section 7.9.4
MCoA	Property Access	E112	Where construction of the CSSI restricts a property's access to a public road, the Proponent must, until their primary access is reinstated, provide the property with temporary alternate access to an agreed road decided through consultation with the landowner, at no cost to the property landowner, unless otherwise agreed with the landowner.	Full Compliance	Yes	CEMP Section 7.9.4
MCoA	Property Access	E113	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access must be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier.	Full Compliance	Yes	CEMP Section 7.9.4
MCoA	Property Access	E114	During construction, all reasonably practicable measures must be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian, cyclist and vehicular access, and parking arrangements must be developed in consultation with affected businesses and landowners and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	Full Compliance	Yes	CEMP Section 7.9.4
MCoA	Pedestrian and Cyclist Access	E115	Safe pedestrian and cyclist access must be maintained around the St Marys construction site during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternate route which complies with the relevant standards, must be provided and signposted before the restriction or removal of the impacted access.	Full Compliance	Yes	CEMP Section 7.9.4

MCoA	Road Traffic and Safety	E116	A Traffic and Transport Liaison Group(s) must be established in accordance with the Construction Traffic Management Framework to inform the development of CTMP.	Sydney Metro will establish the TTLG. The Principal Contractor will participate as part of the TTLG and provide the TTLG with any information or documentation it requires to meet its obligations under this approval.	Yes	CEMP Section 7.9.4
MCoA	Road Safety	E117	Supplementary analysis and modelling as required by TfNSW and / or the Traffic and Transport Liaison Group(s) must be undertaken to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations including changes to and the management of pedestrian, bicycle and public transport networks, public transport services, and pedestrian and cyclist movements. Revised traffic management measures must be incorporated into the CTMP. Permanent road works included in the CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and, accessibility of the network. Design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken: (a) in consultation with, and to the reasonable requirements of the relevant Traffic and Transport Liaison Group; (b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements; (c) to minimise and manage local area traffic impacts; (d) to, where possible and appropriate, retain or reinstate parking in St Marys; (e) to ensure access is maintained to property and infrastructure (f) place and movement outcomes from precinct plans and design guidelines; and (g) to meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, Sydney Metro – Western Sydney Airport Submissions Report – Appendix D Design Guidelines and TfNSW requirements. Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation during design development and before completion of construction of the CSSI.	Full Compliance, except that Revised traffic management measures do not need to be incorporated into Interchange Access Plans or Station Design and Precinct Plans.	Yes	CEMP Section 7.9.4
MCoA	Road Safety	E118	As part of Condition E117 the Traffic and Transport Liaison Group(s) is to identify opportunities to improve the intersection performance during operation at: (a) Queen Street/Great Western Highway/Mamre Road in St Marys; (b) Glossop Street/ Forrester Road in St Marys; and (c) Glossop Street / Great Western highway in St Marys. Any identified improvements must be implemented prior to the commencement of operation.	Not Applicable	N/A	N/A
MCoA	Road Safety	E119	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the relevant Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Planning Secretary upon request.	Full Compliance.	Yes	CEMP Section 7.9.4
MCoA	Road Safety	E120	The CSSI must be designed and constructed with the objective of minimising impacts to, and interference with utilities infrastructure, and that such infrastructure and property is protected during construction. 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.	Full Compliance	Noted	Quickway will work with SM comms to minimise impacts, and consult utilities providers prior to any proposed impacts
MCoA	Utilities Warragamba to Prospect Water Supply Pipeline	E121	The proponent must consult with WaterNSW regarding design, construction and operational management where the proposal interacts with the Warragamba to Prospect Water Supply Pipeline, and ensure that proposed construction and operational agreements are consistent with the “Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines” and implement all practical measures to protect the Warragamba to Prospect Water Supply Pipelines infrastructure, or as otherwise agreed to by WaterNSW.	Not Applicable	N/A	N/A
MCoA	Waste	E122	Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	Full Compliance	Yes	a) WRMP Section 5.2 b) WRMP Section 5.6 c) WRMP Section 5.5
MCoA	Waste	E123	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	Full Compliance	Yes	WRMP Section 5.3 and 5.4
MCoA	Waste	E124	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	Full Compliance	Yes	WRMP Section 5.5
MCoA	Waste	E125	All waste must be classified in accordance with the EPA’s Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	Full Compliance	Yes	WRMP Section 5.2
MCoA	Water	E126	The CSSI must be designed and constructed so as to maintain the NSW Water Quality Objectives (NSW WQO) where they are being achieved as at the date of this approval, and contribute towards achievement of the NSW WQO over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the CSSI contains different requirements in relation to the NSW WQO, in which case those requirements must be complied with.	Full Compliance	Yes	CEMP Section 7.3.4
MCoA	Construction requirements	E127	The Proponent must consider the Guidelines for controlled activities on waterfront land riparian corridors (Department of Industry 2018) when carrying out work within 40 metres of a watercourse, including its bed.	Not Applicable	N/A	N/A
MCoA	Construction requirements	E128	Before undertaking any works and during maintenance or construction activities, erosion and sediment controls must be implemented and maintained to prevent water pollution consistent with Managing Urban Stormwater: Soils and Construction Vol 1 4th ed. by Landcom, 2004 (The Blue Book).	Principal Contractor	Yes	CEMP Section 7.3.4
MCoA	Construction requirements	E129	Unless an EPL is in force in respect of the CSSI and that licence specifies alternative criteria, discharges from construction wastewater treatment plants to surface waters must not exceed: (a) the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 (ANZG (2018)) default guideline values for toxicants at the 95 per cent species protection level; (b) for physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC/ARMCANZ); and (c) for bioaccumulative and persistent toxicants, the ANZG (2018) guidelines values at a minimum of 99 per cent species protection level. Where the ANZG (2018) does not provide a default guideline value for a particular pollutant, the approaches set out in the ANZG (2018) for deriving guideline values, using interim guideline values and/or using other lines of evidence such as international scientific literature or water quality guidelines from other countries, must be used.	Not Applicable	N/A	N/A

MCoA	Construction requirements	E130	If construction stage stormwater discharges are proposed, a Water Pollution Impact Assessment will be required to inform licensing consistent with section 45 of the POEO Act. Any such assessment must be prepared in consultation with the EPA and be consistent with the National Water Quality Guidelines, with a level of detail commensurate with the potential water pollution risk.	Full Compliance	N/A	N/A. No stormwater discharges proposed and EPL is not required for this scope of work.
MCoA	Construction requirements	E131	Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be carried out in accordance with relevant guidelines and designed by a suitably qualified and experienced person.	Full Compliance	N/A	N/A No intention or requirement for watercourse crossings or stream diversions
MCoA	Operational Requirements	E132	Unless an EPL is in force in respect to the CSSI and that licence specifies alternative criteria, discharges from operation water treatment plants to surface waters must not exceed: (a) the ANZG 2018 default guideline values for toxicants at the 95 per cent species protection level; (b) for physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000); and (c) for bioaccumulative and persistent toxicants, the ANZG 2018 guideline values at a minimum of 99 per cent species protection level. Where the ANZG 2018 does not provide a default guideline value for a particular pollutant, the approaches set out in the ANZG 2018 for deriving guideline values, using interim guideline values and/or using other lines of evidence such as international scientific literature or water quality guidelines from other countries, must be used.	Not Applicable	N/A	N/A
MCoA	Groundwater	E133	Make good provisions for groundwater users must be provided in the event of a material decline in water supply levels, quality or quantity from registered existing bores associated with groundwater changes from either construction and/or ongoing operational dewatering caused by the CSSI.	Not Applicable	N/A	N/A
MCoA	Groundwater	E134	The Proponent must submit a revised Groundwater Modelling Report to the Planning Secretary for information before bulk excavation at the relevant construction location. The Groundwater Modelling Report must include: (a) for each construction site where excavation will be undertaken, cumulative (additive) impacts from nearby developments, parallel transport projects and nearby excavation associated with the CSSI; (b) predicted incidental groundwater take (dewatering) including cumulative project effects; (c) potential impacts for all latter stages of the CSSI or detail and demonstrate why these later stages of the CSSI will not have lasting impacts to the groundwater system, ongoing groundwater incidental take and groundwater level drawdown effects; (d) actions required to minimise the risk of inflows (including in the event latter stages of the CSSI are delayed or do not progress) and a strategy for accounting for any water taken beyond the life of the operation of the CSSI; (e) saltwater intrusion modelling analysis, from saline groundwater in shale, into metro station sites; and (f) a schematic of the conceptual hydrogeological model.	Not Applicable	N/A	N/A
MCoA		Appendix A	<p>WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS</p> <p>1. A written incident notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven (7) days after the Proponent becomes aware of an incident. Notification is required to be given under this condition even if the Proponent fails to give the notification required under Condition A41 or, having given such notification, subsequently forms the view that an incident has not occurred.</p> <p>2. Written notification of an incident must:</p> <p>(a) identify the CSSI and application number;</p> <p>(b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);</p> <p>(c) identify how the incident was detected;</p> <p>(d) identify when the Proponent became aware of the incident;</p> <p>(e) identify any actual or potential non-compliance with conditions of approval;</p> <p>(f) describe what immediate steps were taken in relation to the incident;</p> <p>(g) identify further action(s) that will be taken in relation to the incident; and</p> <p>(h) identify a project contact for further communication regarding the incident.</p> <p>3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.</p> <p>4. The Incident Report must include:</p> <p>(a) a summary of the incident;</p> <p>(b) outcomes of an incident investigation, including identification of the cause of the incident;</p> <p>(c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and</p> <p>(d) details of any communication with other stakeholders regarding the incident.</p>		N/A	Section 6.8.2.3 Section 6.8.2.4 CEMP

Table 2: CEMF Conditions relevant to the Project

Type	Condition Classification	CEMF Section Reference	Description	Responsibility	Quickway Compliance (Y/N/Not Triggered)	CEMF Compliance Reference Where Addressed
CEMF	Sydney Metro Environment and Sustainability Statement of Commitment	1.3	The Sydney Metro Environment and Sustainability Statement of Commitment (Appendix A) which applies to all Sydney Metro projects. Principal Contractors are required to undertake their works in accordance with this document. The Statement of Commitment reflects a commitment in the delivery of the project to: <ul style="list-style-type: none"> Optimise sustainability outcomes transport service quality and cost effectiveness. Develop effective and appropriate responses to the challenges of climate change carbon management resource and waste management land use integration customer and community expectation and heritage and biodiversity conservation. Be environmentally responsible by avoiding pollution enhancing the natural environment and reducing the project ecological footprint while complying with all applicable environmental laws regulations and statutory obligations. Be socially responsible by delivering a workforce legacy which benefits individuals communities the project and industry and is achieved through collaboration and partnerships. 	AEW Contractor	Yes	Section 2.1 CEMP
CEMF	Legislative and Other Requirements	2	The Project is characterised into components that are located outside Western Sydney International (off-airport) and components that are located within Western Sydney International (on-airport) to align with their different planning approval pathways required under State and Commonwealth legislation. In certain circumstances NSW legislative requirements may be applicable within the on-airport site. This will be reflected within the relevant Construction Environmental Manager Plan (CEMP) and sub-plans. Table 1.1 identifies key NSW environmental legislative requirements and their application to SMWSA construction works off-airport current as at the date of this document. Sydney Metro and its Contractors must regularly review their legislative and other requirements. (See CEMP for Table 1.1)	AEW Contractor	Yes	Section 2.1 CEMP
CEMF	Planning Approvals	2.2	There are three principal statutory schemes that govern the planning and assessment process for the Project which relate to works that are located outside the boundaries of Western Sydney International Airport (off-airport); and works that are located within the boundaries of Western Sydney International (on-airport). The off-airport components of the Project are subject to assessment and approval under the provisions of both State and potentially the Commonwealth environmental planning requirements being the Environmental Planning and Assessment Act (EP&A Act) (NSW) and the Environment Protection and Biodiversity Conservation Act (EPBC Act) (Cth) respectively. The Project is State significant infrastructure (SSI) under section 5.12 of the EP&A Act and has sought a declaration to be critical State significant infrastructure under section 5.13 of the EP&A Act. Therefore the Project is subject to assessment and approval by the NSW Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act. Approval under the EP&A Act and EPBC Act for impacts on Matters of National Environmental Significance (MNES) and Commonwealth land is not required for the on-airport elements of the Project. The on-airport elements of the Project however trigger requirements to vary the current Airport Plan for Western Sydney International under the Airports Act 1996 (Airports Act) (Cth). The proposed variation must be referred to the Commonwealth Minister for the Environment for advice and agreement as relevant in respect of the variation before the Commonwealth Infrastructure Minister may vary the Airport Plan. The requirements of the relevant approvals are required to be complied with by Sydney Metro. Responsibility for implementing performance outcomes mitigation measures and conditions of approval will be allocated between Sydney Metro and Principal Contractors as appropriate.	AEW Contractor except the Principal will seek approval for the Project and the AEW Contractor is to meet the requirements of these approvals.	Yes	Section 1.2 CEMP
CEMF	Planning Approvals	2.2	Typically for projects approved under the EP&A Act Sydney Metro are required to produce a Staging Report which sets out the applicability and allocation of NSW approval requirements within the project's program of works. For the purposes of SMWSA Sydney Metro is expecting this requirement for the off-airport works as well as a requirement to prepare a Construction (Rail) Plan for the on-airport works. Sydney Metro will prepare a combined Staging Report / Construction (Rail) Plan to identify the stages of construction of the project as well as the applicability and allocation of all NSW and Commonwealth requirements for each stage including the: <ul style="list-style-type: none"> Performance outcomes identified in the planning documentation Mitigation measures identified in the planning documentation Any Conditions of Approval of the SSI approval Any conditions of the Airport Plan as varied The requirements of this CEMP. 	AEW Contractor except the Principal will develop and gain approval for the staging report Construction (Rail) Plan and the on airport CEMPs. The AEW Contractor is to meet the requirements.	Yes	SM developed staging report CEMP developed by Quickway accordance with staging Report Section 2.2 CEMP
CEMF	Environment Protection Licence Requirements (off-airport works)	2.3	Contractors for SMWSA need to review the applicability of Schedule Activities and assess the need to obtain an Environment Protection Licence (EPL) for off-airport works associated with SMWSA. In other circumstances work may be undertaken under an existing EPL held by Sydney Trains.	AEW Contractor	N/A	N/A
CEMF	Environment Protection Licence Requirements (off-airport works)	2.3	Where required Sydney Metro Principal Contractors undertaking off-airport works will: <ol style="list-style-type: none"> Apply for and be granted an EPL from the EPA. Hold an EPL which covers their scope of works as necessary under the POEO Act. Undertake their scope of works in accordance with the conditions of the applicable EPLs as issued by the EPA. Work under the existing Sydney Trains EPL. 	AEW Contractor	N/A	N/A
CEMF	Building Approvals (on airport works)	2.4	Following variation of the Airport Plan and prior to construction for on-airport works the Airports Act provides a regime requiring building approvals to be obtained from the Airport Building Controller (ABC) in respect of building activities on the airport site. WSA is required to provide its consent to any applications for building approvals. Applications for building approvals must satisfy the requirements of the Airports (Building Control) Regulations 1996. Once construction is complete a certificate of compliance must be issued by the ABC before a building can be occupied or works used.	AEW Contractor	N/A	N/A
CEMF	Other Licences and Permits	2.5	EPBC Act Part 13 permits may be required in specific areas across the project noting that such a permit is already in place for the impacts of the Stage 1 development of the Airport Site.	AEW Contractor except where the Principal will develop applications and obtain Part 13 Permits.	N/A	N/A
CEMF	Environmental and Sustainability Management System	3.1	a. Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2016.	AEW Contractor	Yes	Section 2.1 CEMP
CEMF	Environmental and Sustainability Management System	3.1	b. Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will: <ol style="list-style-type: none"> Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2016; Be supported by a process for identifying and responding to changing legislative or other requirements; Include processes for assessing design or construction methodology changes for consistency against the planning approvals; Include processes for tracking and reporting performance against sustainability and compliance targets; Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and Be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment. 	AEW Contractor	Yes	Section 2.1 CEMP
CEMF	Environmental and Sustainability Management System	3.1	c. All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's Environment and Sustainability Management System.	AEW Contractor	Yes	Section 2.1 CEMP
CEMF	Environmental and Sustainability Management System	3.1	d. The relationship between the Sydney Metro Environment and Sustainability Management System and the Principal Contractor's Environment and Sustainability Management System is shown in Figure 1.	AEW Contractor	Yes	Section 2.1 CEMP
CEMF	Sustainability Management Plan	3.2	a. Principal Contractors are required to prepare and implement a Sustainability Management Plan (SMP) relevant to the scale and nature of the Project Works.	AEW Contractor	Yes	Sustainability Management Plan

CEMF	Sustainability Management Plan	3.2	<p>b. The SMP must as a minimum address and detail:</p> <p>SMP1: The relevant requirements of the TfNSW Environment and Sustainability Policy and the Sydney Metro – Western Sydney Airport Sustainability Plan</p> <p>SMP2: A sustainability policy statement</p> <p>SMP3: The sustainability management team structure including key personnel authority and roles of key personnel lines of responsibility and communication minimum skill levels of each role and interfaces with the overall project organisation structure</p> <p>SMP4: N/A</p> <p>SMP5: The carbon and energy mitigation measures as detailed in the planning approval documentation that are applicable to the Project Works</p> <p>SMP6: The low carbon strategies and initiatives that will be implemented to minimise the carbon emissions</p> <p>SMP7: The energy efficiency strategies and initiatives that will be implemented to minimise energy use</p> <p>SMP8: Support innovative and cost effective approaches to energy efficiency low carbon / renewable energy sources and energy procurement</p> <p>SMP9: N/A</p> <p>SMP10: The processes and methodologies (including frequency) for assurance monitoring auditing corrective action continuous improvement and reporting on sustainability performance</p> <p>SMP11: A process (or processes) for compliance record generation and management</p> <p>SMP12: The processes and methodologies which will be used to achieve the required scores under rating systems identified in General Specification for Sustainability</p> <p>SMP13: N/A</p> <p>SMP14: The strategies and initiatives that will be implemented to reduce overall water use and wastewater discharge and maximise the availability and use of non-potable water sources</p> <p>SMP15: N/A</p> <p>SMP16: N/A</p> <p>SMP17: The strategy to reduce material use throughout the project life-cycle</p> <p>SMP18: The strategies and initiatives that will be implemented to maximise the use of recycled materials</p> <p>SMP19: The strategies and initiatives that will be implemented to recycle and reuse materials onsite</p> <p>SMP20: The strategies and initiatives to prioritise the use of materials with a lower environmental and social embodied impact</p> <p>SMP21: N/A</p> <p>SMP22: The strategies and initiatives to prioritise the use of low-VOC low emission materials</p> <p>SMP23: The use of sustainably sourced and certified timber and wood products</p> <p>SMP24: N/A</p> <p>SMP25: N/A</p> <p>SMP26: N/A</p> <p>SMP27: Estimates of Scope 1' Scope 2' Scope 3' and total carbon emissions (Carbon Emission Targets) that incorporates direct and indirect emissions associated with electricity and fuel consumption on-site process emissions and embodied emissions for all main materials used and undertaken in accordance with ISO 14064-1 ISO 14064-2 & ISO 14064-3.</p> <p>SMP28: Reporting of carbon and energy will be undertaken in accordance with the National Greenhouse and Energy Reporting Act 2007.</p> <p>SMP29: The strategy and initiatives to influence subcontractors and materials suppliers to adopt sustainability objectives in their works and procurement</p> <p>SMP30: A Sustainable Procurement Policy that must as a minimum include:</p> <ul style="list-style-type: none"> - The processes and procedures that will be used to provide environmental and social improvement - The responsibilities of key project personnel with respect to the implementation of the policy - Compliance record generation and management - The processes and environmental and social criteria that will be used for the selection of Subcontractors - The processes that will be used to ensure ethical sourcing of labour and materials - Local sourcing - Where equipment materials or labour are procured from locations outside Australia the processes that will be used to ensure human rights impacts and risks are identified and mitigated as well as processes to ensure compliance with modern slavery and modern slavery reporting - Engagement with social enterprises and local businesses <p>SMP31: The retention of records detailing the consideration of sustainability in the procurement of all materials</p>	AEW Contractor	Yes	Sustainability Management Plan
CEMF	Construction Workforce Development and Industry Participation Plan	3.3	<p>a. The Workforce Development and Industry Participation Plan will address and detail:</p> <p>i. The proposed response to State and Commonwealth requirements including but not limited to:</p> <ul style="list-style-type: none"> o NSW Aboriginal Participation in Construction Policy o NSW Infrastructure Skills Legacy Program o Australian Jobs Act – Australian Industry Participation Plan o Western Sydney City Deal <p>ii. Indigenous Participation Plan – National Partnerships Agreement Proposed</p> <p>appropriately skilled key personnel to support delivery of the workforce development and industry participation requirements;</p> <p>iii. Implementation approach processes and systems to ensure delivery and reporting of workforce development and industry participation priority areas:</p> <ul style="list-style-type: none"> - Jobs and Industry Participation; - Skills Development; - Diversity and Inclusion including Aboriginal Participation; and - Inspiring Future Talent. 	AEW Contractor	Yes	WDIPP
CEMF	Construction Environmental Management Plan(s)	3.4	a. Sydney Metro will develop the Construction Environmental Management Plans (CEMPs) for the on-airport construction of the rail. These on-airport CEMPs will be developed in consultation with WSA and be consistent with existing WSA CEMPs. Figure 2 displays the relationship between the planning documentation and the environmental documentation required for SMWSA.	Principal	N/A	N/A
CEMF	Construction Environmental Management Plan(s)	3.4	b. Sydney Metro will submit the on-airport CEMPs to the Commonwealth for approval. The approved SMWSA on-airport CEMPs will be implemented for all on-airport rail construction works and inform the Principal Contractor's environmental documentation where working on the airport site.	Principal	N/A	N/A
CEMF	Construction Environmental Management Plan(s)	3.4	c. Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their off airport 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. The CEMP will address the specific requirements of scope of works and address the off-airport environmental requirements.	AEW Contractor	Yes	CEMP Section 2.2
CEMF	Construction Environmental Management Plan(s)	3.4	d. Depending on the scope and scale of the works Sydney Metro may decide to streamline the CEMP and sub-plan requirements for off-airport works. 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. The CEMP and sub-plan requirements from this CEMP for each construction stage / contract will be detailed in the Staging Report / Construction (Rail) Plan for the project.	Principal	Note	Note
CEMF	Construction Environmental Management Plan(s)	3.4	e. Environmental documentation prepared for works within the on-airport site will be in accordance with the approved SMWSA on-airport CEMPs	AEW Contractor	N/A	N/A
CEMF	Construction Environmental Management Plan(s)	3.4	f. The Principal Contractor 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.	AEW Contractor.	Yes	CEMP Section 2
CEMF	Construction Environmental Management Plan(s)	3.4	<p>g. As a minimum the Principal Contractor CEMP will:</p> <p>i. Include a contract specific environmental policy;</p> <p>ii. Include a description of activities to be undertaken during construction;</p> <p>iv. For each plan under the CEMP set objectives and targets and identify measurable key performance indicators in relation to these;</p> <p>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;</p> <p>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;</p> <p>vii. Identify communication requirements including liaison with stakeholders and the community;</p> <p>viii. Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.11(b);</p> <p>ix. Management strategies for environmental compliance and review of the performance of environmental controls;</p> <p>x. Procedures for environmental inspections and monitoring auditing and review and reporting on environmental performance including environmental compliance tracking;</p> <p>xi. Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;</p> <p>xii. Include procedures for emergency and incident management non-compliance management and corrective and preventative action; and</p> <p>xiii. Include procedures for the control of environmental records.</p>	AEW Contractor.	Yes	<p>i) CEMP Appendix A</p> <p>ii) CEMP Section 4</p> <p>iii) This Table / Tables within CEMP</p> <p>iv) CEMP Section 7</p> <p>v) CEMP Section 6.3</p> <p>vi) CEMP Section 6.3</p> <p>vii) CEMP Section 5.2 and 6.7</p> <p>viii) CEMP Section 6.5</p> <p>ix) CEMP Section 6.9</p> <p>x) CEMP Section 6.9</p> <p>xi) CEMP Section 6.9</p> <p>xii) CEMP Section 6.9</p> <p>xiii) CEMP Section 6.10</p>

CEMF	Construction Environmental Management Plan(s)	3.4	h. The Principal Contractor CEMP and associated sub-plans will be reviewed by Sydney Metro prior to any construction works commencing. For off-airport works approved under the CSSI the independent environmental representative (see Section 3.13) will also review the CEMP. i. 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.		Yes Note	h) CEMP Section 5 i) Note
CEMF	Off-Airport Construction Environmental Management Sub-Plans	3.5	a. Subject to Section 3.4(b) the Principal Contractors 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 as a minimum: i. Spoil management; ii. Groundwater management; iii. Traffic and transport management; iv. Noise and vibration management; v. Heritage management; vi. Flora and fauna management; vii. Visual amenity management; viii. Soil and water management; ix. Air quality management; and x. Waste management. Some of these sub plans may also be informed by other environmental management documents included in the planning approval for example the Construction Traffic Management Framework or Construction Noise and Vibration Standard.	AEW Contractor	N/A	N/A
CEMF	Off-Airport Construction Environmental Management Sub-Plans	3.5	b. Additional detail on the minimum requirements for these sub plans is provided in Sections 6 to 14 of this CEMP.	AEW Contractor	N/A	N/A
CEMF	Environmental Procedures and Control Maps	3.6	a. The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should supplement environmental management sub plans but may substitute for sub plans in agreement with Sydney Metro if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.	AEW Contractor	Yes	CEMP Sub-plans / Appendices
CEMF	Environmental Procedures and Control Maps	3.6	b. The procedures will include: i. A breakdown of the work tasks relevant to the specific activity and indicate responsibility for each task; ii. Potential impacts associated with each task; iii. A risk rating for each of the identified potential impacts; iv. Mitigation measures relevant to each of the work tasks; and v. Responsibility to ensure the implementation of the mitigation measures.	AEW Contractor	Yes	CEMP Sub-plans EWMS
CEMF	Environmental Procedures and Control Maps	3.6	c. The Principal Contractor will prepare and implement site based progressive Environmental Control Maps (ECMs) which as a minimum: i. Depicting the current representation of the site; ii. Indicate which environmental procedures environmental approvals or licences are applicable; iii. Illustrate the site showing significant structures work areas and boundaries; iv. Illustrate the environmental control measures and environmentally sensitive receivers; v. Is endorsed by the Principal Contractors Environmental Manager or delegate; vi. Include all the training and competency requirements for relevant workers; and vii. Be communicated to relevant workers including sign off of the appropriate procedures prior to commencing works on the specific site and / or activity.	AEW Contractor	Yes	Appendix C CEMP
CEMF	Additional Environmental Assessments	3.7	d. Where the requirement for an additional environmental assessment is identified this will be undertaken prior to undertaking any construction activities. The environmental assessment will include: i. A description of the existing surrounding environment; ii. Details of the ancillary works and construction activities required to be carried out including the hours of works; iii. An assessment of the environmental impacts of the works including but not necessarily limited to traffic noise and vibration air quality soil and water ecology and heritage; iv. Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts; and v. Identification of the timing for completion of the construction works and how the sites would be reinstated (including any necessary rehabilitation).		Note	Note
CEMF	Cumulative Impacts	3.8	a. A cumulative construction impacts management plan would be developed. The plan would detail co-ordination and consultation requirements with the following stakeholders (as relevant) would occur where required to manage the interface of projects under construction at the same time: i. Transport for NSW ii. Department of Planning Industry and Environment iii. Western Parkland City Authority (and their contractors) iv. Emergency service providers v. Utility providers	AEW Contractor except the Principal will develop and obtain approval of the Cumulative Impacts Plan.	N/A	N/A
CEMF	Cumulative Impacts	3.8	b. Co-ordination and consultation requirements with these stakeholders would be detailed in the plan to include: i. provision of regular updates to the detailed construction program construction sites and haul routes ii. identification of key interfaces with other construction projects iii. Development of mitigation strategies to manage cumulative impacts associated with these interfaces.	AEW Contractor except the Principal will develop and obtain approval of the Cumulative Impacts Plan.	N/A	N/A
CEMF	Condition Surveys	3.9	e. Prior to the commencement of construction the Principal Contractors are to offer Pre construction Building Condition Surveys in writing to the owners of buildings where there is a potential for construction activities to cause any damage (regardless of severity). If accepted the Principal Contractor will produce a comprehensive written and photographic condition report produced by an appropriate professional prior to relevant works commencing.	AEW Contractor	N/A	N/A No expected impacts
CEMF	Condition Surveys	3.9	f. Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles. Dilapidation reports are to include other road infrastructure such as signs curbs applicable driveways and pedestrian paths.	AEW Contractor		Table 7-31 CEMP Section 1.1.3.1
CEMF	Register of Hold Points	3.1	a. Principal Contractors will identify hold points beyond which approval is required to proceed with a certain activity. Example activities include vegetation removal and water discharge. Hold points will be documented in relevant CEMPs	AEW Contractor	Yes	Section 2.1 CEMP
CEMF	Register of Hold Points	3.1	g. Table 1.4 provides the structure for the register of hold points as well as a preliminary list of hold points which will be implemented.	AEW Contractor	Yes	Section 3.4 CEMP
CEMF	Training Awareness and Competence	3.11	a. Principal Contractors are responsible for determining the training needs of their personnel. As a minimum this will include site induction regular toolbox talks and topic specific environmental training as follows: i. The site induction will be provided to all site personnel and will include as a minimum: - Training purpose objectives and key issues; - Contractor's environmental and sustainability policy(s) and key performance indicators; - Due diligence duty of care and responsibilities;	AEW Contractor	Yes	Section 6.5 CEMP
CEMF	Training Awareness and Competence	3.11	b. Principal Contractors will conduct a Training Needs Analysis which: i. Identifies that all staff are to receive an environmental training; ii. Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans; iii. Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements; and iv. Implements and documents as part of the CEMP a training schedule that plans attendance at environmental training events provides mechanisms to notify staff of their training requirements and identifies staff who do not attend scheduled training events or who have overdue training requirements.	AEW Contractor	Yes	Section 6.5 CEMP
CEMF	Emergency and Incident Response	3.12	a. Principal Contractors undertaking off-airport work in accordance with an EPL must develop and implement a Pollution Incident Response Management Plan in accordance with the requirements of the POEO Act. Contractor's emergency and incident response procedures will also be consistent with any relevant Sydney Metro procedures and for on-airport works consistent with the environmental incident and emergency management requirements identified in the Western Sydney Airport Site Environmental Management Framework and will include: i. Categories for environmental emergencies and incidents; ii. Notification protocols for each category of environmental emergency or incident including notification to Sydney Metro WSA (where required for on-airport works) and notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details; iii. Identification of personnel who have the authority to take immediate action to shut down any activity or to affect any environmental control measure (including as directed by an authorised officer of any regulator or government department); iv. A process for undertaking appropriate levels of investigation for all incidents and the identification implementation and assessment of corrective and preventative actions; and v. Notification protocols of incidents to relevant regulators and stakeholders including (but not limited to) the EPA DPIE the AEO WSA and DITRDC for incidents that are made by the Contractor or Sydney Metro.	AEW Contractor	N/A	N/A
CEMF	Emergency and Incident Response	3.12	b. The Contractor will make all personnel aware of the plan and their responsibilities.	AEW Contractor	N/A	N/A

CEMF	Independent Environmental Representatives	3.13	a. Sydney Metro will engage Independent Environmental Representatives (ERs) as required under the SSI approval for off-airport works to undertake the following along with any additional roles as required: i. Review provide comment on and endorse (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation planning approval conditions Environment Protection Licences relevant standards and this CEMF; ii. Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation; iii. Provide independent guidance and advice to Sydney Metro and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions; iv. Be the principal point of advice for the DPIE in relation to all questions and complaints concerning the environmental performance of the project; v. Ensure that environmental auditing is undertaken in accordance with all relevant project requirements; and vi. Recommend reasonable steps including 'stop works' to be taken to avoid or minimise adverse environmental impacts.	Not Applicable except that the Principal will communicate approval of the Secretary of any ER.	Note SM engages ER	Section 6.3.1 CEMP
CEMF	Airport Environment Officer	3.14	An Airport Environment Officer (AEO) is responsible for the day to day regulatory oversight of compliance with the Airports (Environment Protection) Regulations 1997 (AEPRs) at Western Sydney International and will have a role in relation to the on airport works for SWMG. The responsibilities of the AEO in relation to on-airport works of SMWSA include: i. Monitoring compliance with the AEPRs ii. Facilitate an understanding of the obligations of the AEPRs iii. Ensure the best possible outcomes are achieved iv. Complete site inspections to review monitoring requirements and completion of works v. Review and comment on incidents and remedial activities vi. Issue an environment protection order in accordance with Part 7 of the AEPR vii. Issue an infringement notice in response to an offence against the AEPR.	Not Applicable except that the Principal will provide communications between both parties to address AEO role and that of the AEW Contractor.	N/A	N/A
CEMF	Roles and Responsibilities	3.15	a. In relation to Roles and Responsibilities the Principal Contractor CEMP will: i. Describe the relationship between the Principal Contractor Sydney Metro key regulatory stakeholders the independent environmental representative and the independent certifier; ii. For each role that has environmental accountabilities or responsibilities including key personnel provide a tabulated description of the authority and roles of key personnel lines of responsibility and communication minimum skill level requirements and their interface with the overall project organisation structure; iii. Provide details of each specialist environment sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work; and iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative the Independent Certifier and other regulatory stakeholders.	AEW Contractor.	Yes	i) CEMP Section 6.3 ii) CEMP Section 6.3 iii) CEMP Section 6.3 iv) CEMP Section 6.3
CEMF	Roles and Responsibilities	3.15	b. All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.	AEW Contractor.	Yes	Section 6.2.2 Section 3.3.3 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	h. Issue specific environmental monitoring will be undertaken as required or as additionally required by any approval permit or licence conditions.	AEW Contractor.	Yes	Section 6.9 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	i. The results of any monitoring undertaken as a requirement of a license or permit that is required to be published will be published on the Principal Contractor's or a project specific website within 14 days of obtaining the results.	AEW Contractor will provide the information to the Principal for publishing on the project website.	Yes	N/A
CEMF	Environmental Monitoring Inspections and Auditing	3.16	j. Environmental inspections will include:	AEW Contractor.	Yes	Section 6.9 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	Surveillance of environmental mitigation measures by the Site Foreman; and	AEW Contractor.	Yes	Section 6.9.2 Section 6.9.3 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record.	AEW Contractor.	Yes	Section 6.9.3 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	k. Regular site inspections by Sydney Metro the ER for off-airport works and the AEO for on-airport works will be undertaken at a frequency to be agreed with the Principal Contractor based on the risk of activity but as a minimum monthly.	Principal will organise inspections in consultation with the co-operation of the AEW Contractor.	Yes	Section 6.9.3 Section 6.9.4 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	l. Principal Contractors must undertake internal environmental audits. The scope will include:	AEW Contractor.	Yes	Section 6.9 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	Compliance with any approval permit or licence conditions	AEW Contractor.	Yes	Table 6-4 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	Compliance with the E&SMS CEMP SMP sub-plans and procedures;	AEW Contractor.	Yes	Section 2.1 Section 6.9 Table 6-4 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	Community consultation and complaint response;	AEW Contractor.	Yes	Section 6.7.4 CEMP Section 7.4 CNVMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	Environmental training records; and	AEW Contractor.	Yes	Section 6.5 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	Environmental monitoring and inspection results.	AEW Contractor.	Yes	Section 6.9.3 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	m. Sydney Metro will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation including this CEMF. These audits would cover both on- and off-airport works.	Principal will organise with co operation of the AEW Contractor.	Yes	Section 6.9 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	n. Off-airport works approved under the SSI approval will be subjected to audits undertaken by the independent environmental auditor. Independent environmental audits will focus on compliance with the planning approval and the conditions of approval. The independent auditor is approved by DPIE and an audit schedule will be developed in consultation with the Principal Contractor and Sydney Metro.	Principal will organise with co operation of the AEW Contractor.	Yes	Section 6.9 CEMP
CEMF	Environmental Monitoring Inspections and Auditing	3.16	o. On-airport works approved under the Airport Plan as varied will be subject to environmental audits and compliance audits noting unscheduled audits may also be undertaken. The environmental audits would audit the environmental systems and on-site performance of the on-airport works of SMWSA and be undertaken on a 6 monthly basis.	Principal will organise with co operation of the AEW Contractor.	Yes	Section 6.9 CEMP
CEMF	Environmental Non compliances	3.17	a. Principal Contractors will document and detail any non-compliances arising out of the above monitoring inspections and audits. Sydney Metro will be made aware of all non-compliances in a timely manner.	The AEW Contractor shall provide the Principal with the Incident Report required in a SA1360 compatible format.	Yes	Section 6.8.2.4 CEMP
CEMF	Environmental Non compliances	3.17	b Principal Contractors will develop and implement corrective actions to rectify the non-compliances and preventative actions in order to prevent a re-occurrence of the non-compliance. Contractors will also maintain a register of non-compliances corrective actions and preventative actions.	AEW Contractor.	Yes	Section 6.8.2.4 CEMP
CEMF	Environmental Non compliances	3.17	c Sydney Metro may raise non-compliances against environmental requirements. The Environmental Representative and Airport Environmental Officer also have the authority to raise a non-compliance for their respective areas of work.	Principal will raise and expect investigation and actions to be carried out by the AEW Contractor.	Yes	Section 6.10 CEMP
CEMF	Environmental Records and Compliance Reporting	3.18	p. Principal Contractors will maintain appropriate records of the following:	AEW Contractor.	Yes	Section 6.10 CEMP
CEMF	Environmental Records and Compliance Reporting	3.18	Site inspections audits monitoring reviews or remedial actions;	AEW Contractor.	Yes	Section 6.10 CEMP
CEMF	Environmental Records and Compliance Reporting	3.18	Documentation as required by performance conditions approvals licences and legislation;	AEW Contractor.	Yes	Section 6.10 CEMP

CEMF	Environmental Records and Compliance Reporting	3.18	Modifications to site environmental documentation (e.g. CEMP sub-plans and procedures); and	AEW Contractor.	Yes	Section 6.10 CEMP
CEMF	Environmental Records and Compliance Reporting	3.18	Other records as required by this Construction Environmental Management Framework.	AEW Contractor.	Yes	Section 6.10 CEMP
CEMF	Environmental Records and Compliance Reporting	3.18	q. Records must be accessible onsite for the duration of works.	AEW Contractor.	Yes	Section 6.10.2 CEMP
CEMF	Environmental Records and Compliance Reporting	3.18	r. Records will be retained by the Principal Contractor for a period of no less than 7 years. Records will be made available in a timely manner to Sydney Metro (or their representative) upon request.	AEW Contractor.	Yes	Section 6.10 CEMP
CEMF	Environmental Records and Compliance Reporting	3.18	s. Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.14) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to Sydney Metro at an agreed frequency.	AEW Contractor.	Yes	Table 6-4 Section 6.10 CEMP
CEMF	Review and Improvement of the Environment & Sustainability Management Systems	3.19	t. Principal Contractors will ensure the continual review and improvement of the management systems. This will generally occur in response to: i. Issues raised during environmental surveillance and monitoring; ii. ii. Expanded scope of works; iii. Environmental incidents; and iv. Environmental non-conformances.	AEW Contractor.	Yes	Section 6.3.3 CEMP
CEMF	Review and Improvement of the Environment & Sustainability Management Systems	3.19	u. A formal review of the management systems by the Principal Contractor's Senior Management Team will also occur on an annual basis as a minimum. This review shall generate actions for the continual improvement of the systems and supporting management plans.	AEW Contractor.	Yes	Section 6.11 CEMP
CEMF	Stakeholder and Community Involvement Overview	4.1	v. Throughout construction Sydney Metro and the Principal Contractors will work closely with stakeholders and the community to ensure they are well informed regarding the construction works.	AEW Contractor.	Yes	Section 5.2 Section 6.7 CEMP
CEMF	Stakeholder and Community Involvement Overview	4.1	w. Stakeholders and the community will be informed of significant events or changes that affect or may affect individual properties residences and businesses. These will include: i. Significant milestones; ii. Design changes; iii. Changes to traffic conditions and access arrangements for road users and the affected public; and iv. Construction operations which will have a direct impact on stakeholders and the community including noisy works interruptions to utility services or construction work outside of normal work hours.	The Principal Contractor must meet any obligation required of them by the CCS.	Yes	Section 5.2 Section 6.7 CEMP
CEMF	Community Communication Strategy	4.2	a. An Overarching Community Communication Strategy (OCCS) has been developed for SMWSA. The OCCS incorporates both on and off-airport works with the on-airport components being developed in consultation with WSA.	The Principal Contractor must meet any obligation required of them by the OCCS	Yes	Section 6.7
CEMF	Community Communication Strategy	4.2	x. Each Principal Contractor would be responsible for implementing their own Community Communication Strategy prepared in accordance with this overarching strategy.	The Principal Contractor must meet any obligation required of them by the CCS.	Yes	Section 6.7
CEMF	Community Communication Strategy	4.2	y. Key elements of the Community Communication Strategy which will be implemented at appropriate times in the construction process include: i. Notification (including targeted letterbox drops and email) of any works that may disturb local residents and businesses (such as noisy activities and night works) at least seven days prior to those works commencing; ii. Notification (including targeted letterbox drops and email) of works that may affect transport (such as road closures changes to pedestrian routes and changes to bus stops); iii. Traffic alerts (via email) to all key traffic and transport stakeholders advising of any changes to access and local traffic arrangements (at least seven days prior to significant events); iv. Print and radio advertisements regarding major traffic changes; v. 24-hour toll-free community project information phone line; vi. Complaints management process; vii. Community information sessions as required; viii. Regular updates to the Sydney Metro website (sydnymetro.info) including uploading of all relevant documents and contact details for the stakeholder and community relations team; ix. Provision of information to the Sydney Metro Community Information Centre including community newsletters information brochures and fact sheets and interactive web-based activities; x. Clear signage at the construction sites; xi. Regular newspaper advertisements in local and metropolitan papers; xii. Regular inter-agency group meetings; xiii. Community business and stakeholder satisfaction surveys and feedback forms; xiv. Translator and interpreter services; and xv. The Principal Contractor's Community Relations Team will liaise with the Sydney Metro Project Communications team as the point of contact for the community.	The Principal Contractor must meet any obligation required of them by the CCS.	Yes	Section 6.7
CEMF	Complaint Handling	4.3	a. Community liaison and complaints handling will be undertaken in accordance with the Construction Complaints Management System and will include: i. Principal Contractors will deal with complaints in a responsive manner so that stakeholders' concerns are managed effectively and promptly; and ii. A verbal response will be provided to the complainant as soon as possible and within a maximum of two hours from the time of the complaint (unless the complainant requests otherwise). A detailed written response will then be provided if required to the complainant within one week. iii. Community liaison and complaints handling for construction of on-airport works will be undertaken in accordance with the Integrated Complaint Handling Procedure. This Procedure will include a single integrated complaint handling telephone line and email address for all works on the airport site which will be managed so that any contact made by a stakeholder will be directed to the relevant party responsible for those works so that stakeholder's concerns are managed effectively and promptly.	The Principal Contractor must participate in the implementation of the Complaints Management System and provide Sydney Metro with all information it requires to comply	Yes	Section 6.7
CEMF	Urban design of temporary works	4.4	a. Principal Contractors will ensure as a minimum: i. Temporary construction works consider urban design and visual impacts including: -Artwork graphics and images to enhance the visual appearance of temporary works in high visibility locations; -Project information to raise awareness on benefits explain the proposed works at each site and provide updates on construction progress; -Community information including contact numbers for enquiries / complaints; -Signage and information to mitigate impacts on local businesses which may be obscured by the construction site; -Sydney Metro advertising / public awareness campaigns; and -Logos / branding including Sydney Metro NSW and Commonwealth Government and Contractor branding. ii. The design of all temporary works will require Sydney Metro approval in relation to urban design and visual impacts and Sydney Metro will stipulate the design of hording artwork including: -Sydney Metro advertising / public awareness campaigns; and -Logos / branding including Sydney Metro NSW and Commonwealth Government and Contractor branding.	AEW Contractor	Yes	Section 7.8.4
CEMF	Urban design of temporary works	4.4	b. Construction hoardings scaffolding and acoustic sheds will be regularly inspected and kept clean and free of dust build up. Graffiti on construction hoardings scaffolding or acoustic sheds will be removed or painted over promptly.	AEW Contractor	Yes	Section 7.8.4
CEMF	Urban design of temporary works	4.4	c. The principles of Crime Prevention through Environmental Design (CPTED) will be applied to all works including temporary works that have a public interface.	AEW Contractor	Yes	Section 7.8.4
CEMF	Business and property	4.5	a. Principal Contractors will proactively work with potentially affected stakeholders to identify the likely impacts and put in place measures to minimise impacts.	AEW Contractor	Yes	Section 6.7
CEMF	Business and property impacts	4.5	z. Construction works will be undertaken to meet the following objectives: I. Minimise the potential impact of the project to businesses affected by construction works; II. 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; III. 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 IV. Ensure that business stakeholder enquiries and complaints regarding the project are managed and resolved effectively.	AEW Contractor	Yes	Section 6.7

CEMF	Business and property impacts	4.5	<p>aa. The Community Communication Strategy (Section 4.2) will document key issues relating to business impacts by locality with a particular focus on proactive consultation with affected businesses. Including</p> <p>i. Identification of specific businesses which are sensitive to construction activity disturbances;</p> <p>ii. Summary of the commercial character of the locality its general trading profile (daily and annually) and information gained from the business profiling such as:</p> <ul style="list-style-type: none"> -Operating hours -Main delivery times -Reliance on foot traffic -Any signage or advertising that may be impacted -Customer origin; and -Other information specific to the business that will need to be considered in construction planning. <p>iii. Define the roles and responsibilities in relation to the control and monitoring of business disturbance</p> <p>iv. Identification of locality specific standard business mitigation measures which would be implemented;</p> <p>v. Maps and diagrams to illustrate the information for easy identification of measures which would be implemented;</p> <p>vi. Description of the monitoring auditing and reporting procedures;</p> <p>vii. Procedure for reviewing performance and implementing corrective actions;</p> <p>viii. Description of the complaints handling process; and</p> <p>ix. Procedure for community consultation and liaison.</p>	The Principal Contractor must meet any obligation required of them by the CCS.	Yes	Section 6.7
CEMF	Working hours	5.1	a. Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.	AEW Contractor	Yes	CNVMP Section 5.2
CEMF	Working hours	5.1	<p>b. Works which can be undertaken outside of standard construction hours without any further approval include:</p> <p>Those which have been described and assessed in the environmental assessments. For example: tunnelling and underground excavations and supporting activities or works within Western Sydney International</p> <p>i. Works which are determined to comply with the relevant Noise Management Level at sensitive receivers;</p> <p>ii. The delivery of materials outside of approved hours as required by the Police or other authorities (including Transport for NSW) for safety reasons;</p> <p>iii. Where it is required to avoid the loss of lives property and / or to prevent environmental harm in an emergency; and</p> <p>iv. Where written agreement is reached with all affected receivers.</p>	AEW Contractor	Yes	CNVMP Section 5.2
CEMF	Working hours	5.1	c. Where off-airport works are being undertaken under an Environmental Protection Licence Principal Contractors may apply for EPA approval to undertake works outside of normal working hours.	AEW Contractor	Yes	CNVMP Section 5.2
CEMF	Construction Traffic Management	5.2	a. The management of traffic impacts due to construction is addressed in the Construction Traffic Management Framework (CTMF) which sets out system requirements for management plans and other associated documentation. This document applies to Principal Contractors and forms part of the contract documentation.	AEW Contractor	Yes	CEMP Section 7.9.4
CEMF	Construction Traffic Management	5.2	b. The Construction Traffic Management Framework (CTMF) sets out the approach to managing traffic impacts during the construction of the Sydney Metro projects. The CTMF also outlines contractor requirements with reference to third party agreements. Principal Contractors are required to produce these documents in accordance with the CTMF.	AEW Contractor	Yes	CEMP Section 7.9.4
CEMF	Construction Traffic Management	5.2	c. For on-airport works the Sydney Metro Western Sydney Airport Traffic and Access CEMP will detail all the management objectives and will be consistent with the WSA Traffic and Access CEMP including all appendices to the CEMP	AEW Contractor. Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Noted	Noted
CEMF	Site Layout	5.3	<p>a. Principal Contractors will consider the following in the layout of construction sites:</p> <p>i. The location of noise intensive works and 24 hour activities in relation to noise sensitive receivers;</p> <p>ii. The location of site access and egress points in relation to noise and light sensitive receivers especially for sites proposed to be utilised 24 hours per day;</p> <p>iii. The use of site buildings to shield noisy activities from receivers;</p> <p>iv. The use of noise barriers and / or acoustic sheds where feasible and reasonable for sites proposed to be regularly used outside of daytime hours; and</p> <p>v. Aim to minimise the requirement for reversing, especially of heavy vehicles.</p>	AEW Contractor	Yes	Section 4.2 Figure 9 examples of ancillary facility site layouts CEMP
CEMF	Reinstatement	5.4	a. Where measures for reinstatement are not stipulated in the contracts mitigation measures for reinstatement of construction and ancillary lands will be produced in consultation with Sydney Metro the landowner and stakeholders.	AEW Contractor in consultation with the Principal.	Yes	Section 7 CEMP
CEMF	Reinstatement	5.4	<p>b. Mitigation measures required for reinstatement will be incorporated into the CEMP and will include as a minimum:</p> <p>i. Principal Contractors will clear and clean all working areas and accesses at project completion;</p> <p>ii. At the completion of construction all plant temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site;</p> <p>iii. All land including roadways footpaths loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better; and</p> <p>iv. Reinstatement of community spaces infrastructure and services will occur as soon as possible after completion of construction.</p>	AEW Contractor	Yes	Section 7 CEMP
CEMF	Spoil Management Objectives	6.1	<p>a. The following spoil management objectives will apply to the construction of the project:</p> <p>i. Minimise spoil generation where possible;</p> <p>ii. The project will mandate 100% reuse or recycling (on or off-site) of usable spoil;</p> <p>iii. Spoil will be managed with consideration to minimising adverse traffic and transport related issues;</p> <p>iv. Spoil will be managed to avoid contamination of land or water;</p> <p>v. Spoil will be managed with consideration of the impacts on residents and other sensitive receivers; and</p> <p>vi. Site contamination will be effectively managed to limit the potential risk to human health and the environment.</p>	AEW Contractor	Yes	Section 7.2 CEMP Waste and Recycling Management Sub-plan Appendix F
CEMF	Spoil Management Objectives	6.2	<p>a. Principal Contractors will develop and implement a Spoil Management Plan for their scope of works. The Spoil Management Plan will include as a minimum:</p> <p>i. The spoil mitigation measures as detailed in the planning approval documentation;</p> <p>ii. The responsibilities of key project personnel with respect to the implementation of the plan;</p> <p>iii. Procedures and methodologies for the haulage and disposal locations storage and stockpiling arrangements including those for virgin excavated natural material contaminated and unsuitable material;</p> <p>iv. Procedures for the testing excavation classification handling and reuse of spoil;</p> <p>v. Measures that will be implemented to both reduce spoil quantities and maximise the beneficial reuse of spoil which will be generated during the performance of the Contractor's Activities including how spoil generation is minimised through the design development process;</p> <p>vi. Details links or references to where traffic movements in relation to spoil are described and measures that will be implemented to minimise traffic and noise impacts associated with haulage and disposal of spoil;</p> <p>vii. Quantities for reuse of spoil within the Construction Site or Western Sydney International for beneficial reuse of spoil off site and for spoil disposal;</p> <p>viii. Processes and procedures for the management of the environmental and social impacts of spoil transfer and reuse;</p> <p>ix. A register of spoil receipt sites that includes the site or project name location capacity site owner and which tier the site is classified as under the spoil reuse hierarchy;</p> <p>x. Spoil management monitoring requirements; and</p> <p>xi. Compliance record generation and management.</p>	AEW Contractor	Yes	Waste and Recycling Management Sub-plan Appendix F CEMP
CEMF	Spoil Management Implementation	6.2	<p>b. Spoil management measures will be included in regular inspections undertaken by the Contractor and compliance records will be retained. These will include:</p> <p>i. Records detailing the beneficial re-use of spoil either within the project or at off-site locations; and</p> <p>ii. Waste dockets for any spoil disposed of to landfill sites</p>	AEW Contractor	Yes	Waste and Recycling Management Sub-plan Appendix F CEMP
CEMF	Spoil Mitigation	6.3	<p>a. Examples of spoil mitigation measures include:</p> <p>i. Implementing the spoil re-use hierarchy;</p> <p>ii. Handling spoil to minimise potential for air or water pollution; and</p> <p>iii. Minimise traffic impacts associated with spoil removal.</p>	AEW Contractor	Yes	Waste and Recycling Management Sub-plan Appendix F CEMP
CEMF	Groundwater Management Objectives	7.1	<p>a. The following groundwater management objectives will apply to construction:</p> <p>i. Reduce the potential for drawdown of surrounding groundwater resources;</p> <p>ii. Prevent the pollution of groundwater through appropriate controls; and</p> <p>iii. Reduce the potential impacts of groundwater dependent ecosystems.</p> <p>iv. For on-airport works the Sydney Metro Western Sydney Airport Soil and Water CEMP will detail all the groundwater management objectives and will be consistent with the WSA Soil and Water CEMP including all appendices to the CEMP.</p>	Groundwater Management Objectives	Yes	Table 7-3 CEMP
CEMF	Groundwater Management Objectives	7.2	a. For off-airport works the following content may be provided within other sub plans such as the Soil and Water Management Plan and Flora and Fauna Management Plan.	AEW Contractor	N/A	N/A
CEMF	Groundwater Management Implementation	7.2	<p>b. Principal Contractors will develop and implement a Groundwater Management Plan for off-airport works. The Groundwater Management Plan will include as a minimum:</p> <p>i. The groundwater mitigation measures as detailed in the planning approval documentation;</p> <p>ii. The requirements of any applicable licence conditions;</p> <p>iii. Details of proposed extraction use and disposal of groundwater and measures to mitigate potential impacts to groundwater sources incorporating monitoring impact trigger definition and response actions for all groundwater sources potentially impacted by SMWSA;</p> <p>iv. Evidence of consultation with the relevant government agencies such as DPIE for off-airport works or land;</p> <p>v. The responsibilities of key project personnel with respect to the implementation of the plan;</p> <p>vi. Procedures for the treatment testing and discharge of groundwater from the site;</p> <p>vii. Compliance record generation and management; and</p> <p>viii. Details of groundwater monitoring if required.</p>	AEW Contractor	N/A	N/A

CEMF	Groundwater Mitigation	7.3	a. The on-airport Soil and Water CEMP (with the groundwater management plan) and the off-airport Groundwater Management Plan will include the following groundwater mitigation measures as well as relevant Conditions: i. Implementing all feasible and reasonable measures to limit groundwater inflows to stations and crossovers; and ii. Undertaking groundwater monitoring during construction (levels and quality) in areas identified as 'likely' and 'potential' groundwater dependent ecosystems.	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	N/A	N/A
CEMF	Construction Noise and Vibration Management Objectives	8.1	a. The following noise and vibration management objectives will apply to construction: i. Minimise unreasonable noise and vibration impacts on residents and businesses; ii. Avoid structural damage to buildings or heritage items as a result of construction vibration; iii. Undertake active community consultation; iv. Maintain positive cooperative relationships with schools, childcare centres, local residents and building owners; and v. For on-airport works, the Sydney Metro Western Sydney Airport Noise and Vibration CEMP will detail all the noise and vibration management objectives and will be consistent with the WSA Noise and Vibration CEMP, including all appendices to the CEMP.	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	CNVMP Section 2.2
CEMF	Construction Noise and Vibration Management Implementation	8.2	a. On-airport management of noise and vibration will be achieved through the implementation of the SMWSA Noise and Vibration CEMP and Principal Contractors will develop and implement a Construction Noise and Vibration Management Plan for all off-airport works consistent with the Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009). Both plans will include as a minimum: i. Identification of work areas, site compounds and access points; ii. Identification of sensitive receivers and relevant construction noise and vibration goals; iii. Be consistent with and include the requirements of the noise and vibration mitigation measures as detailed in the planning approval documentation and the Sydney Metro Construction Noise and Vibration Standard (CNVS) including the provision of respite; iv. Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities (based on representative construction scenarios) that have the potential to generate noise or vibration impacts on surrounding sensitive receivers, in particular residential areas; v. Identification of feasible and reasonable procedures and mitigation measures to ensure relevant vibrations and blasting criteria are achieved, including a suitable blast program; vi. The requirements of any applicable licence or approval (for example EPL); vii. Additional requirements in relation to activities undertaken 24 hours of the day, 7 days per week; viii. Pre-construction compliance requirements and hold points; ix. The responsibilities of key project personnel with respect to the implementation of the plan; x. Noise monitoring requirements; xi. Compliance record generation and management; and xii. An Out of Hours Works Protocol applicable to all construction methods and sites.	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	i) CNVMP Section 6.1 Environmental Control Maps ii) CNVMP Section 4.2 CNVMP Appendix A - Land use Survey iii) CNVMP Section 7.1 and 7.2 iv) CNVMP Section 6 v) CNVMP Section 7.1 - No blasting vi) CNVMP Section 2 and 3 vii) CNVMP Section 5.2 viii) CNVMP Section 8.6 ix) CNVMP Section 8.1 x) CNVMP Section 8.3 xi) CNVMP Section 8.5 xii) CNVMP Appendix B
CEMF	Construction Noise and Vibration Management Implementation	8.2	b. Detailed Construction Noise and Vibration Impact Statements will be prepared for noise-intensive construction sites and or activities to ensure the adequacy of the noise and vibration mitigation measures. Specifically, Construction Noise and Vibration Impact Statements will be prepared for works proposed to be undertaken outside of standard construction hours and to support applications to undertake out of hours works (this includes variations of EPLs and applications to relevant agencies).	AEW Contractor	Yes	CNVMP Section 6.4
CEMF	Construction Noise and Vibration Management Implementation	8.2	c. Noise and vibration monitoring would be undertaken for construction as specified in the CNVS.	AEW Contractor	Yes	CNVMP Section 8.3
CEMF	Construction Noise and Vibration Management Implementation	8.2	d. The following compliance records would be kept by Principal Contractors: i. Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria; and ii. Records of community enquiries and complaints, and the Contractor's response.	AEW Contractor	Yes	CNVMP Section 8.5
CEMF	Construction Noise and Vibration Mitigation	8.3	a. All feasible and reasonable mitigation measures would be implemented in accordance with the CNVS. The on-airport Noise and Vibration CEMP and the off-airport Noise and Vibration Management Plan will include the following noise and vibration mitigation measures as well as relevant Conditions: i. Construction hours will be in accordance with the working hours specified in Section 5.1; ii. Hoarding and enclosures will be implemented where required to minimise airborne noise impacts; and iii. The layout of construction sites will aim to minimise airborne noise impacts to surrounding receivers iv. Provision of respite periods.	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	CNVMP Section 7
CEMF	Heritage Management Objectives	9.1	a. The following heritage management objectives will apply to construction: i. Embed significant heritage values through any architectural design, education or physical interpretation; ii. Minimise impacts on items or places of heritage value; iii. Avoid accidental impacts on heritage items; iv. Maximise worker's awareness of indigenous and non-indigenous heritage; and v. For on-airport works, the Sydney Metro Western Sydney Airport Aboriginal Cultural Heritage CEMP and the European and Other Heritage CEMP will detail all the heritage management objectives and will be consistent with the WSA Aboriginal Cultural Heritage CEMP and European and Other Heritage CEMP, including all appendices to these CEMP documents.	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	Table 7-13 Appendix K CEMP
CEMF	Heritage Management Implementation	9.2	a. On-airport management of Aboriginal cultural heritage and European heritage will be achieved through the implementation of the SMWSA Aboriginal Cultural Heritage and the European and Other Heritage CEMPs. Principal Contractors will develop and implement a Heritage Management Plan for all off-airport works. Plans will include as a minimum: i. Evidence of consultation with Registered Aboriginal Parties and the NSW Heritage Council; ii. Identify initiatives that will be implemented for the enhancement of heritage values and minimisation of heritage impacts including procedures and processes that will be used to implement and document heritage management initiatives; iii. The heritage mitigation measures as detailed in the planning approval documentation; iv. The responsibilities of key project personnel with respect to the implementation of the plan; v. Procedures for interpretation of heritage values uncovered through salvage or excavation during detailed design; vi. Procedures for undertaking salvage or excavation of heritage relics or sites (where relevant) consistent with and any recordings of heritage relics prior to works commencing that would affect them; vii. Details for the short and / or long term management of artefacts or movable heritage; viii. Details of management measures to be implemented to prevent and minimise impacts on heritage items (including further heritage investigations, archival recordings and/or measures to protect unaffected sites during construction works in the vicinity); ix. Procedures for unexpected heritage finds, including procedures for dealing with human remains; x. Heritage monitoring requirements; and xi. Compliance record generation and management.	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	iii) CEMP Section 7.5.4 ix) CEMP Appendix G
CEMF	Heritage Management Implementation	9.2	b. The Contractor's regular inspections will include checking of Aboriginal and non-Aboriginal heritage mitigation measures.	AEW Contractor	Yes	CEMP Section 6.9
CEMF	Heritage Management Implementation	9.2	c. Compliance records will be retained by the Contractor. These will include: i. Inspections undertaken in relation to heritage management measures; ii. Archival recordings undertaken of any heritage item; iii. Unexpected finds and stop work orders; and iv. Records of any impacts avoided or minimised through design or construction methods.	AEW Contractor	Yes	iii) CEMP Appendix G
CEMF	Heritage Mitigation	9.3	a. The on-airport Aboriginal Cultural Heritage and European and Other Heritage CEMPs and the off-airport Heritage Management Plan will include the following mitigation measures as well as relevant Conditions: i. Induction courses for site workers will include training in the identification of Aboriginal artefacts and management of Aboriginal heritage values. ii. Any heritage item not affected by the works will be retained and protected throughout construction; iii. During construction undertake professional archaeological investigation, excavation and reporting of any historical Indigenous heritage sites of state significance which will be affected. Reporting may be completed as construction progresses; iv. Undertake archival recordings of all non-Indigenous heritage items affected by the works prior to commencement of works; and v. Implement unexpected heritage find procedures for Indigenous and non-Indigenous heritage items.	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Noted	Noted
CEMF	Flora and Fauna Management Objectives	10.1	e. The following flora and fauna management objectives will apply to construction: i. Minimise impacts on flora and fauna; ii. Design waterway modifications and crossings to incorporate best practice principles; iii. Retain and enhance existing flora and fauna habitat wherever possible; iv. Appropriately manage the spread of weeds and plant pathogens; and v. For on-airport works, the Sydney Metro Western Sydney Airport Biodiversity CEMP will detail all fauna and flora management objectives and will be consistent with the WSA Biodiversity CEMP, including all appendices to the Biodiversity CEMP.	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	Section 7.1 CEMP

CEMF	Flora and Fauna Management Implementation	10.2	<p>a. On-airport management of flora and fauna will be achieved through the implementation of the SMWSA Biodiversity CEMP and Principal Contractors will develop and implement a Flora and Fauna Management Plan for all off-airport works. Both plans will include as a minimum:</p> <ul style="list-style-type: none"> i. The biodiversity mitigation measures as detailed in the planning approval documentation; ii. The responsibilities of key project personnel with respect to the implementation of the plan; iii. Procedures for the clearing of vegetation and the relocation of flora and fauna; iv. Details on the locations monitoring program and use of nest boxes by fauna; v. Procedures for the demarcation and protection of retained vegetation including all vegetation outside and adjacent to the construction footprint and the protection of retained vegetation within the environmental conservation zone on the airport site; vi. Plans for impacted and adjoining areas showing vegetation communities; important flora and fauna habitat areas; locations where threatened species populations or ecological communities have been recorded; vii. Vegetation management plan(s) for sites where native vegetation is proposed to be retained; viii. Identification of measures to reduce disturbance to sensitive fauna; ix. Rehabilitation details including identification of flora species and sources and measures for the management and maintenance of rehabilitated areas (including duration of the implementation of such measures); x. Weed and disease management measures focusing on early identification of invasive weeds and diseases. Protocols to address the effective management of these risks; xi. A procedure for dealing with unexpected threatened species identified during construction including cessation of work and notification to the relevant government department for both on- and off-airport works. The procedure shall define how appropriate mitigation measures (including relevant relocation measures) and updating of ecological monitoring or off-set requirements; xii. Details on the methodology for vegetation mapping and survey; xiii. Ecological monitoring requirements; and xiv. Compliance record generation and management. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Noted	Noted
CEMF	Flora and Fauna Management Implementation	10.2	<p>b. Principal Contractors would undertake the following ecological monitoring as a minimum:</p> <ul style="list-style-type: none"> i. A pre-clearing inspection will be undertaken prior to any native vegetation clearing by a suitable qualified ecologist and the Contractor's Environmental Manager (or delegate). The pre-clearing inspection will include as a minimum: <ul style="list-style-type: none"> 1 Identification of hollow bearing trees or other habitat features; 2 Identification of any threatened flora and fauna; 3 A check on the physical demarcation of the limit of clearing; 4 An approved erosion and sediment control plan for the worksite; and 5 The completion of any other pre-clearing requirements required by any project approvals permits or licences. 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 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. 	AEW Contractor	Yes	<ul style="list-style-type: none"> i) CEMP Section 7.1.4 ii) CEMP Section 7.1.4 iii) CEMP Section 7.1.4
CEMF	Flora and Fauna Management Implementation	10.2	<p>c. The Principal Contractor's regular inspections will include a check on the ecological mitigation measures and project boundary fencing.</p>	AEW Contractor	Yes	CEMP Section 7.1.4
CEMF	Flora and Fauna Management Implementation	10.2	<p>d. The following compliance records would be kept by the Principal Contractor:</p> <ul style="list-style-type: none"> i. Records of pre-clearing inspections undertaken; ii. Records of the release of the pre-clearing hold point; and iii. Records of ecological inspections undertaken. 	AEW Contractor	Yes	CEMP Section 6.9 and 7.1.4
CEMF	Flora and Fauna Management Implementation	10.3	<p>a. The on-airport Biodiversity CEMP and the off-airport Flora and Fauna Management Plan will include the following flora and fauna mitigation measures as well as any relevant Conditions:</p> <ul style="list-style-type: none"> i. Areas to be retained and adjacent habitat areas will be fenced off prior to works to prevent damage or accidental over clearing; ii. Clearing w ll follow a two-stage process as follows: <ul style="list-style-type: none"> - Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and - Habitat trees will be cleared no sooner than 48 hours after non-habitat trees have been cleared. A suitably qualified ecologist will be present on site during the clearing of habitat trees. Felled habitat trees will be left on the ground for 24 hours or inspected by the ecologist prior to further processing. iii. Weed management is to be undertaken in areas affected by construction prior to any clearing works. Off-airport weed management w ll be undertaken in accordance with the NSW Noxious Weeds Act 1993. On-airport weed management will also be undertaken in accordance with the NSW Noxious Weeds Act 1993 and the NSW Biosecurity Act 2015 which is consistent with the approach adopted in the Western Sydney Airport Weed and Disease Management Plan (Appendix C of the Western Sydney Airport Biodiversity CEMP). 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Noted	Noted
CEMF	Visual Amenity Management Objectives	11.1	<p>f. The following visual and landscape management objectives w ll apply to the construction of the project:</p> <ul style="list-style-type: none"> i. Minimise impacts on existing landscape features as far as feasible and reasonable; ii. Ensure the successful implementation of the Landscape Design; iii. Reduce visual impact of construction to surrounding community; and iv. For on-airport works the Sydney Metro Western Sydney Airport Visual and Landscape CEMP will detail all the visual amenity and landscaping management objectives and will be consistent with the WSA Visual and Landscape CEMP including all the appendices to the CEMP. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	CEMP Section 7.8.1
CEMF	Visual Amenity Management Objectives	11.2	<p>a. On-airport management of visual and landscaping will be achieved through the implementation of the SMWSA Visual and Landscape CEMP and Principal Contractors will develop and implement a Visual Amenity Management Plan for all the off-airport temporary works which will include as a minimum:</p> <ul style="list-style-type: none"> i. The visual mitigation measures as detailed in the planning approval documentation for construction; ii. Input from an experienced Landscape or Urban Designer; iii. The maintenance of outward facing elements of site hoarding or noise barriers including the removal of graffiti and weeds; iv. Apply the principles of Australian Standard 4282:1997 Control of the obtrusive effects of outdoor lighting and relevant safety design requirements and detail mitigation measures to minimise lighting impacts on sensitive receivers for all permanent temporary and mobile light sources; v. Identify the processes and procedures that will be used for the incorporation of the principles of Crime Prevention Through Environmental Design (CPTED) in the design and construction of any temporary site facilities; and vi. Compliance record generation and management. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Noted	N/A
CEMF	Visual Amenity Management Implementation	11.2	<p>b. Visual and landscape measures will be incorporated into the Principal Contractor's regular inspections including checking the health of retained vegetation around site boundaries checking the condition of any site hoarding and acoustic sheds and checking the position and direction of any sight lighting.</p>	AEW Contractor	Yes	CEMP Section 7.8.4
CEMF	Visual Amenity Management Implementation	11.2	<p>c. The Contractor will retain compliance records of any inspections undertaken in relation to visual and landscape measures.</p>	AEW Contractor	Yes	CEMP Section 7.8.4
CEMF	Visual Amenity Management Mitigation	11.3	<p>a. The on-airport Visual and Landscape CEMP and the off-airport Visual Management Plan will include the following visual amenity mitigation measures as well as relevant Conditions:</p> <ul style="list-style-type: none"> i. Wherever feasible and reasonable vegetation around the perimeter of the construction sites will be maintained; ii. Existing vegetation not affected by the construction works will be retained; iii. Temporary construction works will be designed with consideration of urban design and visual amenity as per Section 4.4; and iv. Temporary site lighting for security purposes or night works will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	CEMP Section 7.8.4
CEMF	Soil and Water Management Objectives	12.1	<p>a. The following soil and water management objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise pollution of surface water through appropriate erosion and sediment control; ii. Minimise leaks and spills from construction activities; iii. Maintain existing water quality of surrounding surface watercourses; iv. Source construction water from non-potable sources where feasible and reasonable; and v. For on-airport works the Sydney Metro Western Sydney Airport Soil and Water CEMP will detail all the soil and water management objectives and will be consistent with the WSA Soil and Water CEMP including all appendices to the CEMP. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	Section 7.3 CEMP

CEMF	Soil and Water Implementation	12.2	<p>a. On-airport management of soil and water will be achieved through the implementation of the SMWSA Soil and Water CEMP and Principal Contractors will develop and implement a Soil and Water Management Plan for all off-airport works. Both plans will include as a minimum:</p> <ul style="list-style-type: none"> i. The soil and water mitigation measures as detailed in the planning approval documentation and sustainability requirements; ii. Details of construction activities and their locations which have the potential to impact on water courses storage facilities stormwater flows and groundwater; iii. Surface water and ground water impact assessment criteria consistent with the principles of the Australian and New Zealand Environment Conservation Council (ANZECC) guidelines for off-airport works and the Airports (Environment Protection) Regulations 1997 for on-airport works (with due consideration of the ANZECC guidelines); iv. Management measures to be used to minimise surface and groundwater impacts including identification of water treatment measures and discharge points details of how spoil and fill material required by the project will be sourced handled stockpiled reused and managed; erosion and sediment control measures; salinity control measures and the consideration of flood events; v. A contingency plan consistent with the NSW Acid Sulphate Soils Manual (EPA 1998) to deal with the unexpected discovery of actual or potential acid sulphate soils both on and off-airport lands. The plan must including procedures for the investigation handling treatment and management of such soils and water seepage; vi. Management measures for contaminated material (soils water and building materials) and a contingency plan to be implemented in the case of unanticipated discovery of contaminated material including asbestos during construction; vii. A description of how the effectiveness of these actions and measures would be monitored during the proposed works clearly indicating how often this monitoring would be undertaken the locations where monitoring would take place how the results of the monitoring would be recorded and reported and if any exceedance of the criteria is detected how any non-compliance can be rectified; viii. The requirements of any applicable licence conditions; ix. The responsibilities of key project personnel with respect to the implementation of the plan; x. Procedures for the development and implementation of Progressive Erosion and Sediment Control Plans; xi. Identification of locations where site specific Stormwater and Flooding Management Plans are required; and xii. Compliance record generation and management. 	AEW Contractor /Principal will manage the development and approval of the SMWSA on-airport CEMPs.	Noted	Noted No SWMP required
CEMF	Soil and Water Implementation	12.2	<p>b. Principal Contractors will develop and implement Progressive Erosion and Sediment Control Plans (ESCPs) for all active worksites in accordance with Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom 2004) (known as the 'Blue Book').</p> <p>The ESCPs will be approved by the Contractor'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 Contractor personnel including the Engineer and the Site Foreman.</p>	AEW Contractor	Yes	CEMP Section 6.2.4
CEMF	Soil and Water Implementation	12.2	<p>c. ESCPs will detail all required erosion and sediment control measures for the particular site at the particular point in time and be progressively updated to reflect the current site conditions. Any amendments to the ESCP will be approved by the Contractor's Environmental Manager (or delegate).</p>	AEW Contractor	Yes	CEMP Section 6.2.4
CEMF	Soil and Water Implementation	12.2	<p>d. Principal Contractors will develop and implement Stormwater and Flooding Management Plans for the relevant construction sites. These plans will identify the appropriate design standard for flood mitigation based on the duration of construction proposed activities and flood risks. The plan will develop procedures to ensure that threats to human safety and damage to infrastructure are not exacerbated during the construction period.</p>	AEW Contractor	N/A	<p>N/A</p> <p>Stormwater and Flood Management Plan not require due to scale and scope of work</p> <p>Management of stormwater a flooding with be included in Progressive Erosion and Sediment Control Plans</p>
CEMF	Soil and Water Implementation	12.2	<p>e. Principal Contractors will undertake the following soil and water monitoring as a minimum:</p> <ul style="list-style-type: none"> i. Weekly inspections of the erosion and sediment control measures. Issues identified would be rectified as soon as practicable; ii. Additional inspections will be undertaken following significant rainfall events (greater than 20 mm in 24 hours); and iii. All water will be tested (and treated if required) prior to discharge from the site in order to determine compliance with the appropriate approvals and licencing. No water will be discharged from the site without written approval of the Contractor's Environmental Manager (or delegate). This is to form a HOLD POINT. 	AEW Contractor	Yes	CEMP Section 6.2.4
CEMF	Soil and Water Implementation	12.2	<p>f. The following compliance records will be kept by the Principal Contractors:</p> <ul style="list-style-type: none"> i. Copies of current ESCPs for all active construction sites; ii. Records of soil and water inspections undertaken; iii. Records of testing of any water prior to discharge; and iv. Records of the release of the hold point to discharge water from the construction site to the receiving environment. 	AEW Contractor.	Yes	CEMP Section 6.10.1
CEMF	Soil and Water Implementation	12.2	<p>g. The following water resources management objectives will apply to the construction of the project:</p> <ul style="list-style-type: none"> i. Minimise demand for and use of potable water; ii. Maximise opportunities for water re-use from captured stormwater wastewater and groundwater; iii. Examples of measures to minimise potable water consumption include: <ul style="list-style-type: none"> ⊠ Water efficient controls fixtures and fittings in temporary facilities; ⊠ Collecting treating and reusing water generated in tunnelling operations concrete batching and casting facility processes; ⊠ Using recycled water or treated water from on-site sources in the formulation of concrete; ⊠ Harvesting and reusing rainwater from roofs of temporary facilities; ⊠ Using water from recycled water networks; ⊠ Collecting treating and reusing groundwater and stormwater; ⊠ Using water efficient construction methods and equipment; and ⊠ Providing designated sealed areas for equipment wash down. 	AEW Contractor.	Yes	CEMP Section 7.3.4
CEMF	Soil and Water Mitigation	12.3	<p>a. The on-airport Soil and Water CEMP and the off-airport Soil and Water Management Plan will include the following surface water and flooding mitigation measures as well as any relevant Conditions:</p> <ul style="list-style-type: none"> i. Clean water will be diverted around disturbed site areas stockpiles and contaminated areas; ii. Control measures will be installed downstream of works stockpiles and other disturbed areas; iii. Exposed surfaces will be minimised and stabilised / revegetated as soon feasible and reasonable upon completion of construction; iv. Dangerous good and hazardous materials storage will be within bunded areas with a capacity of 110 per cent of the maximum single stored volume; v. Chemicals will be stored and handled in accordance with relevant Australian standards such as: <ul style="list-style-type: none"> o AS 1940-2004 The storage and handling of flammable and combustible liquids o AS/NZS 4452:1997 The storage and handling of toxic substances o AS/NZS 5026:2012 The storage and handling of Class 4 dangerous goods o AS/NZS 1547:2012 On-site domestic wastewater management vi. Spill kits will be provided at the batch plants storage areas and main work sites; vii. A protocol will be developed and implemented to respond to and remedy leaks or spills. viii. A remedial action plan and unexpected finds protocol would be established to facilitate the quarantining isolation and remediation of contamination identified throughout the construction programme. Any asbestos identified on site would be removed. 	AEW Contractor /Principal will manage the development and approval of the SMWSA on-airport CEMPs.	Noted	<p>N/A</p> <p>No SWMP required</p> <p>Soil and Water Management described in section 7.3 CEMP</p>
CEMF	Air Quality Management Objectives	13.1	<p>a. The following air quality management objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; ii. Identify and control potential dust and air pollutant sources; and iii. For on-airport works the Sydney Metro Western Sydney Airport Air Quality CEMP will detail all the air quality management objectives and will be consistent with the WSA Air Quality CEMP including all appendices to the CEMP. 	AEW Contractor /Principal will manage the development and approval of the SMWSA on-airport CEMPs.	Yes	CEMP Section 7.7.1
CEMF	Air Quality Management Implementation	13.2	<p>a. On-airport management of soil and water will be achieved through the implementation of the SMWSA Soil and Water CEMP and Principal Contractors will develop and implement an Air Quality Management Plan for all off-airport works. Both plans will include as a minimum:</p> <ul style="list-style-type: none"> i. The air quality mitigation measures as detailed in the planning approval documentation; ii. The requirements of any approval and applicable licence conditions; iii. Site plans or maps indicating locations of sensitive receivers and key air quality / dust controls; iv. The responsibilities of key project personnel with respect to the implementation of the plan; v. Air quality and dust monitoring requirements; and vi. Compliance record generation and management 	AEW Contractor /Principal will manage the development and approval of the SMWSA on-airport CEMPs.	Noted	<p>N/A</p> <p>No SWMP required</p> <p>Soil and Water Management described in section 7.3 CEMP</p>
CEMF	Air Quality Management Implementation	13.2	<p>b. Air quality and dust monitoring will involve the following as a minimum:</p> <ul style="list-style-type: none"> i. Meteorological conditions will be monitored and appropriate responses will be organised and undertaken periodically by the Principal Contractor; ii. Regular visual monitoring of dust generation from work zones; and iii. Monitoring emissions from plant and construction vehicles to ensure they have appropriate emission controls and are being maintained correctly. 	AEW Contractor	Yes	CEMP Section 7.7.6
CEMF	Air Quality Management Implementation	13.2	<p>c. The following compliance records will be kept by the Principal Contractor:</p> <ul style="list-style-type: none"> i. Records of any meteorological condition monitoring; ii. Records of any management measures implemented as a result of adverse windy weather conditions; and iii. Records of air quality and dust inspections undertaken. 	AEW Contractor	Yes	CEMP Section 7.7.6

CEMF	Air Quality Mitigation	13.3	<p>a. The on-airport Air Quality CEMP and the off-airport Air Quality Management Plan will include the following air quality mitigation measures as well as any relevant Conditions:</p> <ul style="list-style-type: none"> i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes; ii. Plant and equipment to be switched off engines when not in use; iii. The avoidance the use of diesel or petrol powered generators and instead using mains electricity or battery powered equipment where practicable; iv. Appropriate vehicle speeds on sealed and unsealed roads; v. Development and implementation of a construction logistics plan to manage the sustainable delivery of goods and materials; vi. Implementing measures to support and encourage sustainable travel for construction workers to and from the construction sites; vii. Water suppression will be used for active earthwork areas stockpiles unsurfaced haul roads and loads of soil being transported to reduce wind blown dust emissions; viii. Wheel-wash facilities or rumble grids will be provided and used near the site exit points as appropriate; and ix. Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	CEMP Section 7.7.6
CEMF	Waste Objectives	14.1	<p>a. The following waste objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise waste throughout the project life-cycle; ii. Waste management strategies for off-airport works will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: <ul style="list-style-type: none"> - Avoidance of unnecessary resource consumption; - Resource recovery (including reuse reprocessing recycling and energy recovery); and - Disposal. iii. Consistent with the Western Sydney Airport Waste and Resource Construction Environmental Management Plan waste management strategies for on airport works will also be aligned with the NSW Waste Avoidance and Resource Recovery Strategy under the NSW Waste Avoidance and Resource Recovery Act 2001; and iv. For on-airport works the Sydney Metro Western Sydney Airport Waste and Resources CEMP will detail all the waste management objectives and will be consistent with the WSA Waste and Resources CEMP including all appendices to the CEMP. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	WRMP Section 1
CEMF	Waste Objectives	14.1	b. Targets for the recovery recycling or reuse of construction waste and beneficial reuse of spoil will be provided by the Principal Contractor.	AEW Contractor	Yes	WRMP Section 1
CEMF	Waste Implementation	14.2	<p>a. On-airport management of waste and resources will be achieved through the implementation of the SMWSA Waste and Resources CEMP and Principal Contractors will develop and implement a Waste Management Plan for all off-airport works. Both plans will include as a minimum:</p> <ul style="list-style-type: none"> i. The waste management mitigation measures as detailed in the planning approval documentation; ii. The responsibilities of key project personnel with respect to the implementation of the plan; iii. Waste management monitoring requirements; iv. A procedure for the assessment classification management and disposal of waste in accordance with Waste Classification Guidelines; and v. Compliance record generation and management. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	WRMP i) WRMP Section 5 iii) WRMP Section 6.1 iv) WRMP Section 5.3 v) WRMP Section 5.3
CEMF	Waste Implementation	14.2	<p>b. Principal Contractors will undertake the following waste monitoring as a minimum:</p> <ul style="list-style-type: none"> i. Weekly inspections will include checking on the waste storage facilities on site; and ii. All waste removed from the site will be appropriately tracked from 'cradle to grave' using waste tracking dockets. 	AEW Contractor.	Yes	i) WRMP Section 6.3 ii) WRMP Section 6.4
CEMF	Waste Implementation	14.2	c. Principal Contractors will report all necessary waste and purchasing information to Sydney Metro as required for Sydney Metro to fulfil their WRAPP reporting requirements.	AEW Contractor.	Yes	WRMP Section 6.4
CEMF	Waste Implementation	14.2	d. Compliance records will be retained by the Principal Contractors in relation to waste management including records of inspections and waste dockets for all waste removed from the site.	AEW Contractor.	Yes	WRMP Section 6.4
CEMF	Waste Mitigation	14.3	<p>a. The on-airport Waste and Resources CEMP and the off-airport Waste Management Plan will include the following waste management mitigation measures as well as relevant Conditions:</p> <ul style="list-style-type: none"> i. A central waste area (or areas) would be established at which waste (including recyclables) would be stored or stockpiled. Stockpiles and bins would be appropriately labelled managed and monitored till being removed from site; ii. All waste materials removed from the sites will be directed to an appropriately licensed waste management facility; iii. The use of raw materials (noise hoarding site fencing etc...) will be reused or shared between sites and between construction contractors where feasible and reasonable; and iv. Recyclable wastes including paper at site offices will be stored separately from other wastes. 	AEW Contractor /Principal will manage the development and approval of the SM WSA on-airport CEMPs.	Yes	WRMP Section 5.8

Table 3: REMMs relevant to the Project

Type	Condition Classification	Condition Reference	Description	Responsibility	Quickway Compliance (Y/N)
REMM	Transport-Construction	T1	Construction Traffic Management Plans would be prepared in accordance with the Construction Traffic Management Framework	AEW Contractor	Yes
REMM	Transport-Construction	T2	The Construction Traffic Management Plan for St Marys would be developed to ensure existing transport interchange infrastructure continues to operate effectively within the St Marys station precinct would be developed in consultation with the Traffic and Transport Liaison Group.	AEW Contractor	N/A
REMM	Transport-Construction	T3	Coordination with Western Sydney Airport and Transport for NSW would be undertaken through the Traffic and Transport Liaison Group to manage potential cumulative construction traffic impacts with M12 Motorway and Elizabeth Drive	The Principal will establish the TTLG. The AEW Contractor will participate as part of the TTLG and provide the TTLG with any information or documentation it requires to meet its obligations under this approval.	Yes
REMM	Transport-Construction	T4	Road Safety Audits would be carried out to address vehicular access and egress and pedestrian cyclist and public transport safety. Road Safety Audits would be carried out as per the guidelines outlined in Section 10 of the Construction Traffic Management Framework.	AEW Contractor	Yes
REMM	Transport-Construction	T5	Maintain access for pedestrians and cyclists around construction sites as per the guidelines outlined in the Construction Traffic Management Framework. Appropriate signage and line marking would be provided to guide pedestrians and cyclists past construction sites and on the surrounding network to allow access to be maintained	AEW Contractor	Yes
REMM	Transport-Construction	T6	Access for construction vehicles to be planned as per the guidelines outlined in the Construction Traffic Management Framework. Construction site traffic would be managed to minimise movements during peak periods. Vehicle access to and from construction sites would be managed to maintain pedestrian cyclist and motorist safety	AEW Contractor	Yes
REMM	Transport-Construction	T7	Temporary relocation of bus stops and bus layovers at the Station Street car park in St Marys would be implemented prior to the commencement of construction works that impacts on the existing bus facilities. The temporary relocation of bus stops and the bus layover at St Marys would be carried out in consultation with the Traffic and Transport Liaison Group which includes Transport for NSW Penrith City Council and bus operators. Wayfinding and customer information would guide customers to temporary bus stop locations	Not Applicable	N/A
REMM	Transport-Construction	T8	Transport for NSW would be consulted to discuss opportunities for their delivery of intersection upgrades at Mamre Road/M4 Western Motorway on and off ramps prior to the peak year of construction	Not Applicable	N/A
REMM	Transport-Construction	T9	A construction worker car-parking strategy for St Marys would be prepared in consultation with Penrith City Council and Transport for NSW prior to the commencement of construction works. The strategy would seek to: · minimise overall demand for construction worker car-parking through initiatives such as use of other project construction work sites in combination with shuttle buses car-pooling and encouraging the use of public transport · minimise potential use of on-street car-parking by construction workers The construction worker car-parking strategy would be implemented throughout construction.	Not Applicable	N/A
REMM	Transport-operation	OT1	Interchange access plans would be prepared in consultation with the Traffic and Transport Liaison Group to ensure adequate pedestrian and cycle facilities and other transport interchange infrastructure is provided at each station precinct in consultation with relevant authorities including Western Parkland City Authority	Not Applicable	N/A
REMM	Transport-operation	OT2	The project would be designed such that access to properties and existing infrastructure neighbouring the proposed stations would be maintained	AEW Contractor	Yes
REMM	Transport-operation	OT3	Consultation and coordination would be undertaken with Transport for NSW through the Traffic and Transport Liaison Group to align proposed road and intersection upgrades with the year of opening to enable safe and efficient interchanges between transport modes	Not Applicable	N/A
REMM	Transport-operation	OT4	An operational car parking strategy for St Marys would be prepared in consultation with Penrith City Council and Transport for NSW prior to commencement of operation. The strategy would include consideration of measures that could be implemented to address any parking impacts as a result of the project.	Not Applicable	N/A
REMM	Noise and vibration - construction	NV1	Where acoustic sheds are installed the internal lining and type of material used in the construction of the sheds would be considered during design development and construction planning to ensure appropriate attenuation is provided	Not Applicable	N/A
REMM	Noise and vibration - construction	NV2	To avoid potential vibration impacts to the Warragamba to Prospect Water Supply Pipelines a detailed construction vibration assessment would be undertaken in accordance with the Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines (WaterNSW 2020) and would consider the following requirements: 1) confirm velocity limits for construction activities and the impact the works will have on WaterNSW assets 2) excavation methods would be undertaken in accordance with German Standard DIN 4150-3:2016 (2.5 mm/s PPV) 3) vibration monitoring would be undertaken prior to and during construction for high risk construction activities 4) vibration monitoring reports would be provided to WaterNSW	AEW Contractor	N/A - Not working in close proximity to Water infrastructure
REMM	Noise and vibration - Operation	ONV1	An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures required to manage: 1)airborne and ground-borne noise impacts from rail operations 2)airborne noise impacts from the stabling and maintenance facility 3)airborne noise impacts from fixed industrial sources including stations and services facilities. The Operational Noise and Vibration Review would consider existing and potential future land use to establish Project Noise Trigger Levels. The EPA would be consulted during preparation of the Operational Noise and Vibration Review.	Not Applicable	N/A
REMM	Biodiversity-construction	FF1	The Biodiversity Construction Environmental Management Plan (on airport) and Flora and Fauna Management Plan (off-airport) would be prepared by a suitably qualified and experienced person to minimise and manage the clearing of native vegetation and habitat by: 1) seeking to locate site offices site compounds and ancillary facilities in areas where there are limited biodiversity values (e.g. cleared land) 2) delaying the removal of vegetation until absolutely necessary 3) avoiding the removal of hollow-bearing trees where possible 4) using a qualified surveyor and suitably qualified ecologist to mark out exclusion zones and clearing/project boundaries prior to construction 5) providing contractors with regularly updated sensitive area maps (showing clearing boundaries and exclusion zones) 6) investigating opportunities for salvage and storage of felled native trees for potential use in landscape design. The Biodiversity Construction Environmental Management Plan (on airport) and Flora and Fauna Management Plan (off-airport) would be implemented throughout construction.	AEW Contractor except the Principal will prepare the On airport Biodiversity Construction Environmental Management Plan.	Yes - Incorporated into CEMP.
REMM	Biodiversity-construction	FF2	A Nest Box Strategy would be prepared to minimise habitat loss to hollow-dependent fauna in accordance with the Flora and Fauna Management Plan and would include the following requirements: 1) hollow-bearing trees would be marked/tagged and mapped prior to their removal. The size type number and location of nest boxes required would be based on the results of the pre-clearing survey 2) about 70 per cent of nest boxes would be installed about one month prior to any vegetation removal to provide alternate habitat for hollow-dependent fauna displaced during clearing	AEW Contractor	N/A - No Habitat trees expected to be removed. If a hollow is identified during pre-clearing inspection advice from ecologist will be sought regarding the requirement for nest box installation
REMM	Biodiversity-construction	FF3	Works on-airport would be undertaken in accordance with the nest box strategy included in the Western Sydney Airport Habitat Management subplan and in consultation with Western Sydney Airport	AEW Contractor	Yes
REMM	Biodiversity-construction	FF4	A targeted microbat survey (including Eastern Coastal Free-tailed Bat Large Bent-winged bat and Eastern False Pipistrelle) of dwellings and structures proposed for demolition removal or modification would be undertaken in accordance with Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method (OEH 2018) prior to disturbance Other human-made structures such as culverts and other under-road structures within the construction footprint would be surveyed for threatened microbats (e.g. particularly the Southern Myotis) in accordance with the Biodiversity Assessment Method (OEH 2018). If threatened microbats are detected a Microbat Management Plan would be developed as part of the Biodiversity Construction Management Plan and implemented by a suitably qualified bat specialist	AEW Contractor	N/A-no structures proposed for demolition
REMM	Biodiversity-construction	FF5	Works on-airport would be managed in accordance with the Western Sydney Airport Microbat Management Plan and in consultation with Western Sydney Airport	AEW Contractor	Yes
REMM	Biodiversity-construction	FF6	During construction shading and artificial light impacts would be minimised in areas adjoining remnant bushland that is in intact condition	AEW Contractor	Yes
REMM	Biodiversity-construction	FF7	Fish passage and fish habitat associated with Cosgrove Creek and Blaxland Creek would be protected in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI Fisheries NSW 2013)	Not Applicable	N/A
REMM	Biodiversity-construction	FF8	A Dewatering Plan would be prepared and implemented for the dewatering of rural dams which are impacted as a result of the construction of the project. This would include measures to manage the transfer of native aquatic fauna if required prior to dewatering and removing of dams.	AEW Contractor	N/A
REMM	Biodiversity-construction	FF9	A Dewatering Plan would be prepared and implemented for the dewatering of rural dams which are impacted as a result of the construction of the project. This would include measures to manage the transfer of native aquatic fauna if required prior to dewatering and removing of dams. The plan would be consistent with the Western Sydney Airport Biodiversity Construction Environmental Management Plan (2019) (on-airport).	AEW Contractor	N/A

REMM	Biodiversity-construction	FF10	The impact of Key Threatening Processes as a result of the project would be managed and minimised where possible through: 1) implementation of weed management measures to prevent the introduction and spread of weeds including exotic vines and scramblers <i>Olea europaea</i> (African Olive) <i>Chrysanthemoides monilifera</i> <i>Lantana camara</i> and exotic perennial grasses 2) implementation of pathogen management measures to prevent the introduction and spread of pathogens including amphibian chytrid <i>Phytophthora</i> <i>implementa</i> and Exotic Rust Fungi of the order <i>Pucciniales</i> 3) implementation of management measures to protect the riparian zone to ensure fish passage and protect fish habitat in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI (Fisheries NSW) 2013) and minimisation of vegetation removal within the riparian zone where possible	AEW Contractor	Yes
REMM	Biodiversity-construction	FF11	A native vegetation seed collection and salvage program would be developed prior to the commencement of construction and implemented during construction. The seed collection and salvage program would aim to target native species prioritising the Cumberland Plain Woodland species to be utilised in landscaping for the project where possible. Opportunities for use of collected and salvaged seed outside of the project would also be investigated.	The Principal would manage the process with the co operation of the AEW Contractor	Yes - Quickway to cooperate with SM where required to complete process.
REMM	Biodiversity operation	OFF1	Wildlife connectivity would be maintained (where possible) through the installation of viaduct/bridge structures designed in accordance with the following: 1) Height and width of the area under a bridge to be maximised for a 1 species noting a minimum height of approximately 3 metres of dry passage will provide connectivity for most terrestrial species 2) Bridges wide enough to encompass water flow stream bank and riparian vegetation preferably on both sides of the water course 3) For small and medium sized mammals provide fauna furniture as shelter (e.g. vegetation logs rocks leaf-litter refuge pipes escape poles roofing tiles and roofing iron) 4) Height and carriageway separation designed to allow sufficient light and moisture to enhance growth of vegetation under the structure 5) If used for multiple purposes (e.g. pathways or access roads) aim to provide the 3 metre of natural passage for fauna 6) Relocation or adjustment of the stream bed avoided where possible 7) The structure to lie in with the natural hydrology of the surrounding habitat such that the width depth and gradient of the watercourse are maintained in the structure 8) Consistent with the Policy and Guidelines for Fish Friendly Waterway Crossings (DPI (Fisheries NSW) 2013)	Not Applicable	N/A
REMM	Biodiversity operation	OFF2	The design of viaduct structures over the wildlife/riparian corridors at Blaxland Creek the unnamed tributary south of Patons Lane and Coggroves Creek would seek to: 1) maximise the span over the wildlife/riparian corridor 2) minimise native vegetation removal within the wildlife/riparian corridors 3) maintain opportunities for fauna movement along the wildlife/riparian corridors and 4) provide opportunities to enhance fauna movement where possible	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	NAH1	Potential moveable heritage items would be identified and assessed and a significant fabric salvage schedule would be prepared by an appropriately qualified and experienced heritage specialist for St Marys Railway Station Bringlely RAAF Base McGarvie-Smith Farm and McMahons Farm. Significant fabric would only be salvaged if it can be salvaged in such a way that it can be reused and is likely to be able to be reused	AEW Contractor	Not triggered
REMM	Non-Aboriginal heritage - construction	NAH2	Heritage advice would be sought to develop solutions to manage potential ground movement impacts to the St Marys Goods Shed	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	NAH3	Archival recording of heritage items which would be impacted or that would have their setting altered would be carried out in accordance with the NSW Heritage Office's Photographic Recording of Heritage Items Using Film or Digital Capture (2006). The following items would be archivally recorded: 1) St Marys Railway Station 2) Luddenham Road Alignment 3) McMaster Farm 4) McGarvie-Smith Farm 5) Kelvin Park Group (the State Heritage listed curtilage) 6) Bringlely RAAF Base	Not applicable	N/A
REMM	Non-Aboriginal heritage - construction	NAH4	Not Used		N/A
REMM	Non-Aboriginal heritage - construction	NAH5	Archaeological investigations would be undertaken in accordance with recommendations in the non-Aboriginal Archaeological Research Design	AEW Contractor	N/A
REMM	Non-Aboriginal heritage - construction	NAH6	The following heritage items would be monitored for potential vibration impacts during construction: 1) St Marys Railway Station Group 2) Queen Street Post-War Commercial Building 3) St Marys Munitions Workers Housing 4) McGarvie Smith Farm 5) McMaster Farm	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	NAH7	If required the St Marys Station jib crane would be temporarily relocated prior to construction commencing in the vicinity of this item safely stored and appropriately maintained and reinstated. If relocation is required a detailed methodology for the removal and reinstatement of the jib crane would be prepared in consultation with an appropriately qualified heritage advisor	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	NAH8	A dilapidation survey of the Warragamba to Prospect Water Supply Pipelines would be undertaken prior to construction commencing in the vicinity of this item	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	NAH9	A dilapidation survey of the Warragamba to Prospect Water Supply Pipelines would be undertaken prior to construction commencing in the vicinity of this item	AEW Contractor	N/A
REMM	Non-Aboriginal heritage - construction	ONAH1	Design development for the project would endeavour to minimise adverse impacts to heritage buildings elements fabric and heritage significant settings and view lines that contribute to the overall heritage significance of heritage items	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	ONAH2	The architectural design for the project would take account local heritage context and be sympathetic to local heritage character. This would include using sympathetic building materials colours and finishes Design should aim to minimise visual impacts by ensuring that significant elements are not obstructed or overshadowed Design should adhere to the Principal – Western Sydney Airport Design Guidelines The Design Review Panel and Heritage Working Group would be consulted in regard to the design form and material of new built structures that may impact heritage items	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	ONAH3	Consultation with the Heritage Council and with relevant stakeholders would occur for the design of works that have the potential to impact State significant items including St Marys Railway Station	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	ONAH4	A heritage interpretation strategy would be prepared for the project identifying key stories and interpretive opportunities related to non Aboriginal heritage. The strategy would address historic and contemporary heritage and community values and would identify innovative and engaging opportunities for interpretation	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	ONAH5	A conservation management plan would be prepared for St Marys Railway Station in accordance with NSW Heritage Council guidelines. The plan would address any changes to the station including updated assessment of significance of elements and recommendations on curtilage changes. It would also provide site specific exemptions and management policies	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	ONAH6	Heritage inventory registers for heritage items modified by the project would be updated to document their change in condition following the completion of construction works for the project	Not Applicable	N/A
REMM	Non-Aboriginal heritage - construction	ONAH7	An appropriately qualified and suitably experienced heritage architect would be engaged to provide input into design development at St Marys Station	Not Applicable	N/A
REMM	Aboriginal heritage - construction	AH1	Aboriginal stakeholder consultation would continue to be carried out in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (NSW Office of Environment and Heritage 2010). Registered Aboriginal Parties would be provided with opportunities to participate in survey and testing in unverified areas of Aboriginal archaeological sensitivity archaeological salvage works and unexpected find assessments (if required).	AEW Contractor - Partial	Yes
REMM	Aboriginal heritage - construction	AH2	Areas of unverified Aboriginal archaeological sensitivity would be subject to archaeological survey and test excavation pre-construction in accordance with the Aboriginal Cultural Heritage Management Plan	AEW Contractor except the Principal will prepare the Aboriginal Cultural Heritage Management Plan.	Yes
REMM	Aboriginal heritage - construction	AH3	Not Used		N/A
REMM	Aboriginal heritage - construction	AH4	Not Used		N/A
REMM	Aboriginal heritage - construction	AH5	All Aboriginal objects recovered from the construction footprint as a result of test excavation and salvage works would be appropriately secured and under the care of the archaeological consultant while options for their long-term management as determined through consultation with Registered Aboriginal Parties are being investigated.	Not Applicable	N/A

REMM	Aboriginal heritage - construction	AH6	Aboriginal Heritage Information Management System site cards would be produced for all newly identified sites other than those identified on Commonwealth land. These should be submitted to the Aboriginal Heritage Information Management System Registrar as soon as practicable within one month of being identified. Newly identified sites within the boundaries of Defence Establishment Orchard Hills (Commonwealth land) would be reported to the Department of Defence to be managed in accordance with the relevant provisions of the Defence Establishment Orchard Hills Heritage Management Plan	AEW Contractor	Yes
REMM	Aboriginal heritage - construction	AH7	Aboriginal Site Impact Recording forms for sites subject to archaeological salvage would be submitted to the Aboriginal Heritage Information Management System register within one month of the completion of salvage works within their bounds.	AEW Contractor	Yes
REMM	Aboriginal heritage - construction	AH8	If any suspected human remains or unexpected Aboriginal cultural heritage objects are discovered within the on-airport area all activity would cease and the unexpected finds protocol and discovery of human remains protocol specified in the Western Sydney Airport Aboriginal Cultural Heritage Construction Environmental Management Plan would be followed	AEW Contractor	Yes
REMM	Aboriginal heritage - construction	AH9	Works within the bounds of existing Aboriginal Heritage Impact Permit areas should be undertaken in accordance with the conditions of those permits and with permission from the relevant Aboriginal Heritage Impact Permit holder. Works undertaken on Defence Establishment Orchard Hills (Commonwealth land) should be undertaken in accordance with the Defence Establishment Orchard Hills Heritage Management Plan	AEW Contractor	N/A
REMM	Aboriginal heritage - construction	AH10	Impacted Aboriginal Sites would be managed in accordance with the Aboriginal Cultural Heritage Management Plan	AEW Contractor	N/A
REMM	Aboriginal heritage - construction	AH11	Aboriginal sites located outside of the construction footprint but within 100m of it would be clearly demarcated or sign posted to avoid potential impact	AEW Contractor	Yes
REMM	Aboriginal heritage - construction	AH12	Reporting for all archaeological salvage works completed for the project would include: 1) a minimum of one interim Aboriginal archaeological salvage report providing a summary of salvage works completed up to the reporting date including the results of any post-excavation analyses completed. Interim results may be used to inform consistency assessments and Aboriginal heritage interpretation initiatives 2) an Archaeological Salvage Report detailing the results of the archaeological salvage program (including the results of any post excavation analyses) would be completed within one year of the completion of the fieldwork component of the program. The Archaeological Salvage Report would be consistent with the best practice guidelines suggested by the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010b) and the Aboriginal Cultural Heritage Standards & Guidelines Kit (NSW NPWS 1997)	AEW Contractor	Yes
	Aboriginal heritage - construction	AH13	Not Used		N/A
REMM	Aboriginal heritage - construction	OAH1	A heritage interpretation strategy would be prepared for the project in consultation with Aboriginal knowledge holders. Aboriginal heritage interpretation would be developed with reference to the findings of the Aboriginal Cultural Heritage Assessment Report and Archaeological Assessment Report to promote understanding and awareness of cultural heritage values	AEW Contractor except the Principal will prepare the heritage interpretation strategy in consultation with the Aboriginal knowledge holders.	Yes (Sydney Metro)
REMM	Flooding hydrology and water quality construction	HYD1	Construction planning would consider flood related mitigation including: 1) staging construction works to reduce the duration of works within the floodplain 2) daily and continuous monitoring of weather forecasts and storm events rainfall levels and water levels in key watercourses to identify potential flooding events and related flood emergency response 3) consultation with NSW State Emergency Services and relevant local councils to ensure consistent approaches to the management of flood events (off-airport only) 4) provide flood-proofing to excavations at risk of flooding during construction where reasonable and feasible such as raised entry into shafts and/or pump-out facilities to minimise ingress of floodwaters into shafts and the dive structure 5) review of site layout and staging of construction works to avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required	AEW Contractor	Yes - Covered in PESCP
REMM	Flooding hydrology and water quality construction	HYD2	Minimise works in the main creek channels (at Blaxland Creek unnamed watercourse south of Patons Lane and Cosgroves Creek) where possible and avoid works in the channel during rainfall events	Not Applicable	N/A
REMM	Flooding hydrology and water quality construction	HYD3	Surface water flows during construction would be managed to ensure that there is no increase in flows into or through the Warragamba to Prospect Water Supply Pipelines corridor.	Not Applicable	N/A
REMM	Flooding hydrology and water quality construction	WQ1	A surface water quality monitoring program would be implemented to monitor water quality during construction. The program would be developed in consultation with (as relevant) Western Sydney Airport NSW Environment Protection Authority relevant sections of Department of Planning Industry and Environment and relevant local councils. The program would consider monitoring being undertaken as part of other infrastructure projects such as the M12 Motorway and Western Sydney International On-airport, the water quality monitoring program would ensure that works meet the requirements under Schedule 2 of the Airports (Environment Protection) Regulations 1997. The program would monitor all construction discharge locations.	Not Applicable	N/A
REMM	Flooding hydrology and water quality construction	WQ2	Water treatment plants would be designed to ensure that wastewater is treated to a level that is compliant with the ANZECC/ ARMCANZ (2000) ANZG (2018) and draft ANZG (2020) default guidelines for 95 per cent species protection and 99 per cent species protection level for toxicants that bioaccumulate unless other discharge criteria are agreed with relevant authorities.	Not Applicable	N/A
REMM	Flooding hydrology and water quality construction	WQ3	The design and construction of the project would take into account the former NSW Office of Water's Guidelines for controlled activities on waterfront land.	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OHDY1	The flood model for the project would be updated with regard to flood modelling undertaken for the South Creek Sector Review (anticipated to be released in 2021). The updated flood modelling would be used to inform design development including but not limited to addressing potential residual flood impacts identified at the following locations: 1) the viaduct and earthworks in the vicinity of Blaxland Creek so as to minimise the extent of the project within the floodplain 2) the earthworks arrangement at the stabling and maintenance facility in the area affected by the Probable Maximum Flood The flood model for the project would be prepared in consultation with relevant stakeholders	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OHDY2	Develop localised stormwater management plans at St Marys Station and Aerotropolis Core Station to ensure these stations are protected from localised flooding	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OHDY3	Flood compatible design would need to be demonstrated for the permanent spoil placement areas to ensure compliance with applicable land use criteria	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OHDY4	The design of the viaduct crossing over the Warragamba to Prospect Water Supply Pipelines would not result in an increase of overland flows into or through the pipelines corridor for each storm event up to and including the 1% AEP event	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OWQ1	Design batter slope gradients and surface treatments to minimise erosion risk	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OWQ2	Drainage and water treatment design to be undertaken in accordance with Water Sensitive Urban Design requirements specified in local council Transport for NSW and on-airport standards	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OWQ3	Suitably designed scour and erosion controls should be included at drainage and sedimentation basin outlet discharge points	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OWQ4	Detailed design of viaducts across waterways would aim to minimise infrastructure within the bed and banks of existing waterways and minimise changes to flood behaviour across the floodplain Detailed design of viaducts across waterways would aim to minimise infrastructure within the bed and banks of existing waterways and minimise changes to flood behaviour across the floodplain	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OWQ5	Where feasible on-site detention of stormwater would be introduced where stormwater runoff rates are increased. Where there is insufficient space for the provision of on-site detention the upgrade of downstream infrastructure would be implemented where feasible and reasonable	Not Applicable	N/A
REMM	Flooding hydrology and water quality-operation	OWQ6	At all locations where stormwater is discharged water quality measures such as gross pollutant traps bio-retention swales and Water Sensitive Urban Design features would be investigated and implemented where feasible and reasonable	AEW Contractor	N/A
REMM	Flooding hydrology and water quality-operation	OWQ7	Water treatment plants would be designed to ensure that wastewater is treated to a level that is compliant with the ANZECC/ ARMCANZ (2000) ANZG (2018) and draft ANZG (2020) default guidelines for 95 per cent species protection and 99 per cent species protection level for toxicants that bioaccumulate unless other discharge criteria are agreed with relevant authorities.	Not Applicable	N/A
REMM	Groundwater and geology construction	GW1	Further assessment would be undertaken during design development and prior to construction commencing to ensure that damage to buildings and structures at risk of ground movement impacts around St Marys Claremont Meadows Orchard Hills and Bringley are avoided or managed. Where building damage risk is rated as slight moderate or high (as per Rankin 1988) a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage	AEW Contractor	N/A

REMM	non-Aboriginal heritage - construction	GW2	Further assessment of road and rail infrastructure and utility assets (including the Warragamba to Prospect Water Supply Pipelines) considered to be at risk from ground movement would be undertaken during design development. Consultation would be undertaken with the infrastructure and asset owners in each case to determine appropriate ground movement criteria for the assessment and if required to agree management measures to manage potential impacts	Not Applicable	N/A
REMM	Groundwater and geology construction	GW3	Further assessment of potential ground movement impacts on the Goods Shed building at St Marys Station including a building condition survey would be carried out during design development and prior to the commencement of construction. The assessment would be carried out in consultation with a suitably qualified heritage architect and would identify acceptable ground movement criteria and if required feasible measures to reduce or mitigate the effects of ground movement on this structure Ground movement in the vicinity of the Goods Shed and the condition of the Goods Shed building would be monitored during construction A dilapidation survey of the Goods Shed would be carried out prior to work commencing in the vicinity of the building. At the completion of construction should there be any damage to the building which is determined to be as a result of the project construction works the building would be repaired in consultation with a suitably qualified heritage architect	Not Applicable	N/A
REMM	Groundwater and geology construction	GW4	Consultation with Western Sydney Airport will be on-going in respect to the construction programs for both projects to understand the potential for ground movement impacts to proposed buildings and structures	Not Applicable	N/A
REMM	Groundwater and geology construction	GW5	Detailed hydrogeological and geotechnical models for the project would be developed and progressively updated during design and construction These models would: 1) be informed by the results of groundwater monitoring undertaken before and during construction 2) identify predicted changes to groundwater levels including at nearby water supply works and at groundwater dependent ecosystems or other sensitive groundwater receptors Where changes to groundwater levels are predicted at nearby water supply works groundwater dependent ecosystems or other sensitive groundwater receivers an appropriate groundwater monitoring program would be developed and implemented Where changes to groundwater level are close to the ground surface dryland salinity monitoring would be implemented to allow for management of any identified impacts The groundwater monitoring program would aim to confirm no adverse impacts on the receiver during construction or to effectively manage any impacts with the implementation of appropriate mitigation measures. Monitoring at any specific location would be subject to the status of the water supply work and agreement with the landowner	Not Applicable	N/A
REMM	Groundwater and geology construction	GW6	A Groundwater Management Plan would be prepared and implemented. The plan must include the following trigger-action response measures in relation to groundwater levels in areas identified as subject to potential drawdown (at groundwater dependent ecosystems or other sensitive receivers) but outside the construction footprint and Western Sydney International Stage 1 Construction Impact Zone: a) target criteria set with reference to relevant standards and site specific parameters; b) trigger values and corresponding corrective actions to prevent recurring or long-term exceedance of the target criteria described in (a); and c) corrective actions to compensate for any recurring or long-term exceedance of the target criteria described in (a) Response measures may include: 1) targeted ground improvement and grouting to limit groundwater inflows into station excavations tunnels and cross passage to reduce groundwater drawdown 2) design of undrained temporary retention systems to minimise groundwater inflow into station excavations and reduce groundwater drawdown 3) supplementing groundwater supply at affected groundwater dependent ecosystems or watercourses 4) make good provisions for groundwater supply wells impacted by changes in groundwater level or quality	Not Applicable	N/A
REMM	Groundwater and geology-operation	OGW1	Ongoing groundwater inflows from drained project elements (or incidental flows) would be treated and tested before discharge to comply with any relevant Environmental Protection Licence or agreed discharge criteria	Not Applicable	N/A
REMM	Soils and Contamination - Construction	SC1	The Soil and Water Management Plan would incorporate the following measures: 1) for low risk areas of environmental concern worker health and safety measures waste management and tracking for contamination would be outlined. 2) for medium and high risk areas of environmental concern detailed site investigations and review of further available information would be undertaken prior to the start of construction	AEW Contractor	N/A - Due to the scope and scale of the works DSI's are not proposed. In-situ sampling and waste classification will occur prior to ground disturbance within any AEC to determine extent of contamination. Results will guide management during construction in consultation with Contaminated Land Consultant.
REMM	Soils and Contamination - Construction	SC2	Based on outcomes of SC1: 1) if a medium or high risk area of environmental concern is reassessed as low risk the site would be managed in accordance with the Soil and Water Management Plan. This would typically occur where there is minor isolated contamination that can be readily remediated through standard construction practices such as excavation and off site disposal 2) for areas of environmental concern that remain or change to medium risk visual inspections and monitoring would be performed during earthworks. If suspected contamination is encountered the materials would be subject to sampling and analysis to assess management requirements in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority statutory guidelines 3) for areas of environmental concern that remain or change to high risk a Sampling Analysis and Quality Plan would be prepared for Detailed Site Investigations or data gap investigations. The results from the site investigations would be assessed against criteria contained within the National Environment Protection (Assessment of Site Contamination) Measure (2013) and other applicable NSW statutory guidelines to assess whether remediation is required. Remediation works would be performed in accordance with the hierarchy of preferred strategies in the Guidelines for NSW Site Auditor Scheme (NSW Environment Protection Authority 2017) and other guidelines made or endorsed by the NSW Environment Protection Authority. Where practical remediation works would be integrated with excavation and development works performed during construction	AEW Contractor	N/A - Due to the scope and scale of the works DSI's are not proposed. In-situ sampling and waste classification will occur prior to ground disturbance within any AEC to determine extent of contamination. Results will guide management during construction in consultation with Contaminated Land Consultant.
REMM	Soils and Contamination - Construction	SC3	Where information gathered from investigations for medium and high risk areas of environmental concern (as per mitigation measure SC1) is insufficient to determine the risk of contamination a detailed site investigation would be carried out in accordance with the National Environment Protection Measure (2013) and other guidelines made or endorsed by the NSW Environment Protection Authority Where data from the additional data review (mitigation measure SC1) or the detailed site investigation (mitigation measure SC2) confirms that contamination would require remediation a Remediation Action Plan would be developed for the area of the construction footprint. If a Remediation Action Plan is required it would be developed in accordance with NSW Environment Protection Authority statutory guidelines and a Site Auditor would be engaged. Remediation methodologies would be undertaken in accordance with Australian Standards and other relevant government guidelines and codes of practice Remediation would be performed as an integrated component of construction and to a standard commensurate with the proposed end use of the land	AEW Contractor	N/A - Due to the scope and scale of the works DSI's are not proposed. In-situ sampling and waste classification will occur prior to ground disturbance within any AEC to determine extent of contamination. Results will guide management during construction in consultation with Contaminated Land Consultant.
REMM	Soils and Contamination - Construction	SC4	If a duty to report to the NSW Environment Protection Authority under Section 60 of the Contaminated Lands Management Act 1997 is triggered or where a medium to high risk of contamination is identified an accredited Site Auditor would review and approve the Remediation Action Plan (including issue of interim audit advice) and would develop a Site Audit Statement and Site Audit Report upon completion of remediation	AEW Contractor	Yes - Based on information as described above.
REMM	Soils and Contamination - Construction	SC5	An unexpected finds procedure would be developed and implemented as part of the project Soil and Water Management Plan outlining a set of potential contamination issues which could be encountered and detailing the management actions to be implemented. The unexpected finds procedure would include a process for chemical and asbestos contamination and would generally include: 1) cessation of works within the affected area until inspection of the suspected contamination by a qualified contaminated lands consultant (verification by a certified contaminated land practitioner) 2) collection of soil samples for chemical or asbestos analysis where required based on observations 3) assessment of results against applicable land use or waste classification criteria in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority statutory guidelines 4) management of the contamination in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority statutory guidelines 5) the unexpected finds procedure for on-airport construction would be consistent with the Western Sydney Airport unexpected finds procedure detailed in the Soil and Water Construction Environmental Management Plan (Western Sydney Airport 2019)	AEW Contractor	Yes - CEMP - Appendix M
REMM	Soils and Contamination - Construction	SC6	Post construction an inspection of construction stockpiling and laydown sites and soil validation of redundant sedimentation/water quality basins would be undertaken to assess if further investigation and remediation is required. Investigation and remediation (if required) would be undertaken in accordance with the Soil and Water Management Plan (off-airport) and a project specific Remediation Action Plan that would be prepared in a manner consistent with the Western Sydney Airport Remediation Action Plan (2019) (on-airport). All inspections investigations and remediation would be undertaken by a qualified contaminated lands consultant with reports prepared or reviewed by a Certified Contaminated Land Consultant	AEW Contractor	Yes

REMM	Soils and Contamination - Construction	SC7	Prior to ground disturbance in areas of potential acid sulfate soil occurrence testing would be carried out to determine the actual presence of acid sulfate soils. If acid sulfate soils are encountered they would be managed in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee 1998)	AEW Contractor	N/A - No impacts expected.
REMM	Soils and Contamination - Construction	SC8	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 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 the Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004)	AEW Contractor	N/A - Two areas mapped as high probability of salinity are in close proximity to Badgerys Creek and Moore Gully along Badgerys Creek Road. The power supply will be routed underneath these drainage lines using a HDD under bore. No excavation of soils requiring management anticipated.
REMM	Soils and Contamination - Construction	SC9	Targeted groundwater investigations would be undertaken prior to construction to identify high salinity areas at risk from rising groundwater. Where high saline areas (>1000 µS/cm) are identified measures such as planting regenerating and maintaining native vegetation and good ground cover in recharge transmission and discharge zones would be implemented where possible	AEW Contractor	N/A - Two areas mapped as high probability of salinity are in close proximity to Badgerys Creek and Moore Gully along Badgerys Creek Road. The power supply will be routed underneath these drainage lines using a HDD under bore. No risk of rising groundwater anticipated. No planting regeneration etc proposed for works.
REMM	Soils and Contamination - Construction	SC10	Where the construction footprint is not used as part of the operational footprint (residual land) an assessment of the suitability of the site for the proposed land use would be undertaken in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority	AEW Contractor	N/A - Not proposed due to the scope and scale of the works. All material excavated from trenches will be either used for backfill or taken offsite with no contaminated material stockpiled on site. Trench alignment will be returned to pre-existing condition (Majority of works in road verge). Gipps St Ancillary Facility will be handed over for continual use by future contractors. Lawson Rd Ancillary Facility will be returned to pre-existing condition or as agreed by the landowner as per private lease agreement.
REMM	Soils and Contamination - Construction	SC11	For works within Western Sydney International: 1) A review of further available information from Western Sydney Airport would be undertaken prior to the commencement of construction which may include review of investigations the Western Sydney Airport Remediation Action Plan and validation reports 2) Any remediation works (for contamination encountered by The Principal that has not been remediated by Western Sydney Airport) would be undertaken in accordance with the Principal Remediation Action Plan developed in a manner consistent with the Western Sydney Airport Remediation Action Plan (Department of Infrastructure and Regional Development 2019).	Not Applicable	N/A
REMM	Sustainability climate change and greenhouse gas-construction	SUS1	A Sustainability Plan would be developed and implemented during construction of the project. The Sustainability Plan would identify the sustainability climate change and greenhouse gas objectives initiatives and targets which would be implemented during further design development and construction of the project. The Sustainability Plan would be developed to be consistent with the Western Sydney Airport Sustainability Plan for on-airport works. The Sustainability Plan would also inform the preparation of Sustainability Management Plans for each off-airport construction work package.	AEW Contractor except the Principal will prepare the Sustainability Plan.	Yes
REMM	Sustainability climate change and greenhouse gas-construction	SUS2	Protect sensitive construction equipment from the effects of extreme weather such as direct exposure to the sun on extreme heat days and flooding	AEW Contractor	Yes - where relevant
REMM	Sustainability climate change and greenhouse gas-construction	SUS3	Address climate change impacts in emergency management procedures for the construction of the project such as consideration of impacts of flash flooding on evacuation procedures	AEW Contractor	Yes - Covered in Incident and Emergency Management Plan
REMM	Sustainability climate change and greenhouse gas-construction	GHG1	Carry out an iterative process of greenhouse gas assessments and design refinement prior to construction to identify opportunities to minimise greenhouse gas emissions Performance would be measured in terms of a percentage reduction in greenhouse gas emissions and assessed against a business as usual project benchmark verified by Infrastructure Sustainability Council of Australia or equivalent independent industry body	AEW Contractor	N/A - Due to scale and nature of works this assessment is considered negligible.
REMM	Sustainability climate change and greenhouse gas-construction	OSUS1	A Sustainability Plan would be developed and implemented during operation of the project. The Sustainability Plan would identify the sustainability climate change and greenhouse gas objectives initiatives and targets which would be implemented during further design development and operation of the project. The Sustainability Plan would be developed to be consistent with the Western Sydney Airport Sustainability Plan for on-airport works.	AEW Contractor	N/A - Operational Management
REMM	Sustainability climate change and greenhouse gas-construction	OSUS2	Climate change risk treatments would be confirmed and incorporated during further design development	AEW Contractor	N/A
REMM	Sustainability climate change and greenhouse gas-construction	OGHG1	Carry out an iterative process of greenhouse gas assessments and design refinement during detailed design to identify opportunities to minimise greenhouse gas emissions Performance would be measured in terms of a percentage reduction in greenhouse gas emissions and assessed against a business as usual project benchmark verified by Infrastructure Sustainability Council of Australia or equivalent independent industry body	AEW Contractor	N/A
REMM	Resource management-construction	WR1	Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging	AEW Contractor	Yes
REMM	Resource management-construction	WR2	Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities	AEW Contractor	Yes
REMM	Resource management-construction	WR3	A materials tracking system would be implemented for material transferred between construction sites	AEW Contractor	Yes
REMM	Resource management-operation	OWR1	Generation of waste would be minimised and reused where possible in line with the waste hierarchy and the sustainability objectives outlined in a Sustainability Plan. In addition: 1) bins would be provided for general waste and recyclables and collection would be undertaken by an authorised contractor for off-site recycling or disposal at a licenced waste facility 2) waste from maintenance activities would be stored in designated areas for collection by an authorised contractor for off-site disposal 3) containers holding grease and lubricants for maintenance would be washed prior to disposal or stored separately for disposal as hazardous waste 4) waste oil and oil filters would be stored in recycling bins and collected by an authorised contractor and recycled off-site where feasible 5) wastewater sewage and grey water would be disposed to stormwater sewer recycled wastewater system or transported to an appropriately licenced liquid waste treatment facility (if water quality does not meet requirements for discharge to the stormwater/sewer system).	Not Applicable	N/A
REMM	Land use and property - Construction	LU1	Areas of land leased for the purposes of construction would be reinstated at the end of the lease to at least equivalent standard in consultation with the landowner	AEW Contractor	Yes
REMM	Land use and property - Construction	LU2	Where required property adjustments have the potential to impact farm infrastructure (such as fencing or dams) or local access to properties. Consultation with affected property owners would be carried out prior to these works occurring in order to determine reasonable feasible and acceptable solutions.	AEW Contractor	Yes
REMM	Land use and property - Construction	LU3	Where a property would be potentially fragmented by the construction corridor access to properties would be maintained in consultation with the landowner(s).	Not Applicable	N/A
REMM	Land use and property-operation	OLU1	Where a property would be potentially fragmented by the rail corridor access to properties would be provided. The location of access to be provided would be agreed in consultation with the landowner(s).	Not Applicable	N/A
REMM	Land use and property-operation	OLU2	Sydney Metro would continue to consult with key stakeholders and affected landowners during design development of the station interchanges and precincts.	Not Applicable	N/A
REMM	Landscape and visual - construction	LV1	Opportunities for the retention and protection of existing street trees and trees within the construction sites would be identified during detailed construction planning	AEW Contractor	Yes
REMM	Landscape and visual - construction	LV2	Existing trees to be retained would be protected prior to the commencement of construction in the vicinity of these trees in accordance with AS4970-2009 Protection of Trees on Development Sites	AEW Contractor	Yes
REMM	Landscape and visual - construction	LV3	All structures (including potential acoustic sheds site offices workshop sheds and site hoarding) would be finished in a colour which aims to minimise their visual impact where appropriate. This finish is to be applied to all visible fixtures and fittings (such as exposed downpipes)	Not Applicable	N/A
REMM	Landscape and visual - Operation	OLV1	The landscape design for the project would include consideration of appropriate species lists to minimise opportunities to attract wildlife at levels likely to present a hazard to aviation operations. The landscape design would have regard to relevant requirements and species lists under Western Sydney Airport's Wildlife Management Plan and other relevant guidelines including the National Airports Safeguarding Framework (Guideline C) and Recommended Practices No. 1 – Standards for Aerodrome Bird/Wildlife Control (International Birdstrike Committee 2008).	Not Applicable	N/A
REMM	Landscape and visual - Operation	OLV2	Lighting at stations would be designed and operated in accordance with AS4282-2019 Control of the obtrusive effects of outdoor lighting and the National Airports Safeguarding Framework Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports (where relevant)	Not Applicable	N/A
REMM	Landscape and visual - Operation	OLV3	Opportunities to provide vegetation screening of the stabling and maintenance facility (from sensitive receivers such as Luddenham Road and the surrounding rural areas within the view shed) would be investigated during design development. This would include investigating options for establishing screening vegetation as early in the construction phase as possible	Not Applicable	N/A
REMM	Landscape and visual - Operation	OLV4	Landscape screening would be provided along the corridor including restoring vegetation along the creeks to contain local views in accordance with the Principal – Western Sydney Airport Design Guidelines to minimise adverse visual impacts where feasible	Not Applicable	N/A

REMM	Landscape and visual - Operation	OLV5	Corridor services including the combined services route would be designed to reduce visual clutter and minimise visual impact ensuring these structures have a low profile and do not obstruct views across the corridor	Not Applicable	N/A
REMM	Landscape and visual - Operation	OLV6	Proposed engineering batters and water management measures would be designed to integrate with the existing landforms and natural features	Not Applicable	N/A
REMM	Landscape and visual - Operation	OLV7	The landscape design for the project would: 1) incorporate salvaged native trees (including tree hollows and root balls) to enhance fauna habitat in suitable locations including riparian corridors where practicable 2) use native species from the relevant native vegetation communities within the local area for tree planting programs	Not Applicable	N/A
REMM	Social and economic-construction	SE1	Consultation with the local community and project stakeholders would be undertaken to: 1) identify and deliver opportunities for facilitating local creative and cultural activities in appropriate project locations 2) identify and deliver initiatives and opportunities to provide a positive contribution to the potentially affected community and affected locations such as temporary public art and targeted community events and programs	AEW Contractor	Yes - Sydney Metro
REMM	Social and economic-construction	SE2	Not Used		N/A
REMM	Social and economic-construction	SE3	Where partial property acquisition has been identified undertake property liaison and consultation activities to minimise disruption to property owners and activities on impacted sites	Not Applicable	N/A
REMM	Air quality-construction	AQ1	The Air Quality Management Plan for the project would incorporate the following best-practice odour management measures would be implemented during relevant construction works: 1) the extent of opened and disturbed contaminated soil at any given time would be minimised 2) temporary coverings or odour suppressing agents would be applied to excavated areas where appropriate 3) regular odour monitoring would be conducted during excavation to verify that no offensive odours are being generated	AEW Contractor	Yes - CEMP 7.7
REMM	Air quality-construction	AQ2	Where acoustic sheds are proposed these would be designed and managed to prevent/minimise the escape of dust emissions	Not Applicable	N/A
REMM	Air quality-construction	AQ3	Air quality monitoring consistent with the Western Sydney Airport Air Quality Construction Environmental Management Plan would be carried out during construction to ensure that works meet the requirements under Schedule 1 of the Airports (Environment Protection) Regulations 1997	AEW Contractor	N/A - Due to scale and nature of works impacts are considered negligible.
REMM	Hazard and risk-construction	HR1	All hazardous substances that may be required for construction would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW 2005) the Hazardous and Offensive Development Application Guide lines: Applying SEPP 33 (Department of Planning Industry and Environment 2011) the Work Health and Safety Act 2011 (Commonwealth and NSW) and the requirements of the Environmentally Hazardous Chemicals Act 1985 (NSW)	AEW Contractor	Yes
REMM	Hazard and risk-construction	HR2	A Bushfire Management Plan would be prepared and implemented to manage current bushfire risk and identify response actions during construction of the project. The Plan would be prepared in consultation with the NSW Rural Fire Service and Western Sydney Airport. For project areas within Western Sydney International the Plan would be prepared having regard to the existing Western Sydney Airport Site at Badgerys Creek Bushfire Risk Management Plan (Western Sydney Airport Corporation 2019)	AEW Contractor	N/A - Covered in Incident and Emergency Management Plan
REMM	Hazard and risk-construction	HR3	A hazardous materials analysis would be carried out prior to stripping and demolition of structures and buildings which are suspected of containing hazardous materials (particularly asbestos). Hazardous materials and special waste (such as asbestos) would be removed and disposed of in accordance with the relevant legislation codes of practice and Australian Standards (including the Work Health and Safety and Regulation 2011 (NSW))	AEW Contractor	N/A
REMM	Hazard and risk-construction	HR4	Where the project crosses or is adjacent to the Warragamba to Prospect Water Supply Pipelines construction planning and approaches to minimising risks of damage or rupture of the Pipelines would be developed in consultation with WaterNSW and in accordance with the Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines	AEW Contractor	N/A
REMM	Hazard and risk-operation	OHR1	All hazardous substances that may be required for operation would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW 2005) the Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning Industry and Environment 2011) the Work Health and Safety Act 2011 (Commonwealth and NSW) and the requirements of the Environmentally Hazardous Chemicals Act 1985 (NSW)	Not Applicable	N/A
REMM	Hazard and risk-operation	OHR2	A Bushfire Management Plan would be prepared and implemented to manage current bushfire risk and identify response actions during operation of the project. The Plan would be prepared in consultation with the NSW Rural Fire Service and Western Sydney Airport. For project areas within Western Sydney International the Plan would be prepared having regard to the existing Western Sydney Airport Site at Badgerys Creek Bushfire Risk Management Plan (Western Sydney Airport Corporation 2019)	Not Applicable	N/A
REMM	Hazard and risk-operation	OHR3	Where the project crosses or is adjacent to the Warragamba to Prospect Water Supply Pipelines the design of the project would aim to minimise risks of damage or rupture of the Pipelines in consultation with WaterNSW and in accordance with the Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines	Not Applicable	N/A
REMM	Hazard and risk-operation	OHR4	The project would be designed to avoid pilot distraction and minimise the risk of headlight glare from metro trains where on surface rail alignment. This would include providing glare screens in those locations where the project creates an unacceptable risk of pilot distraction	AEW Contractor	N/A
REMM	Cumulative impacts construction	CL1	A Cumulative Construction Impacts Management Plan would be developed and would detail co-ordination and consultation requirements with the following stakeholders (as relevant) to manage the interface of projects under construction at the same time: 1) Western Sydney Airport 2) Transport for NSW 3) Western Parkland City Authority 4) Sydney Water 5) Emergency service providers 6) Utility providers Co-ordination and consultation requirements with these stakeholders would be detailed in the plan to include: 7) provision of regular updates to the detailed construction program construction sites and haul routes 8) identification of key interfaces with other construction projects 9) development of mitigation strategies to manage cumulative impacts associated with these interfaces	AEW Contractor except the Principal will develop and obtain approval of the Cumulative Impacts Plan.	N/A - Principal responsibility. Quickway will work with Sydney Metro to ensure ongoing interface with other contractors is managed to minimise cumulative impacts.