



Construction Environmental Management Plan

SMWSTCTP-AFJ-ECR-PE-PLN-000001 Revision 02

Sydney Metro West – Eastern Creek Precast Facilities



DOCUMENT APPROVAL

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GLOSSARY / ABBREVIATIONS

Abbreviation	Description / Definition
AFJV	Acciona Ferrovia Joint Venture (the Contractor)
AS/NZS	Australia/New Zealand Standards
CEMP	Construction Environmental Management Plan
Conditions of approval	Conditions of approval as provided in Section 10 of the Determination Report also referred to as Environmental Mitigation Measure
DECC	Former Department of Environment and Climate Change (NSW) now NSW Office of Environment, Energy and Science (EES)
Determination Report	Sydney Metro West Eastern Creek Precast Facility Review of Environmental Factors Determination Report (March 2021)
GNVIS	General Noise and Vibration Impact Statement
DPIE	NSW Department of Planning, Infrastructure and Environment
EIS	Sydney Metro West Concept and Stage 1 Environmental Impact Statement (April 2020)
EMS	Environmental Management System
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.
POEO Act	<i>NSW Protection of the Environment Operations Act 1997</i>
Project	Sydney Metro West Concept and Stage 1
REF	Sydney Metro West Eastern Creek Precast Facilities Review of Environmental Factors, Volume 1 Main Document and Appendix A (November 2020)

1. OVERVIEW

1.1 BACKGROUND

Sydney Metro is Australia's biggest public transport program. Services on the North West Metro Line between Rouse Hill and Chatswood started in May 2019. The Sydney Metro network also includes Sydney Metro City & Southwest, Sydney Metro West and Sydney Metro Western Sydney Airport. Sydney Metro West is a new 24 kilometre metro line between Westmead and the Sydney CBD. This infrastructure investment will double the rail capacity of the Greater Parramatta to Sydney CBD corridor with a travel time target between the two centres of about 20 minutes. The planning approvals and environmental impact assessment for Sydney Metro West has been split into a number of stages recognising the size of the project. This includes:

- Stage 1 – Concept and all major civil construction works including station excavation and tunnelling between Westmead and The Bays. Planning approval for this stage was granted in March 2021.
- Stage 2 – All major civil construction works including station excavation and tunnelling from The Bays to Sydney CBD
- Stage 3 – Tunnel fit-out, construction of stations, ancillary facilities and station precincts, and operation and maintenance of the Sydney Metro West line

The Project was declared to be Critical State Significant Infrastructure by the Minister for Planning and Public Spaces and an Environmental Impact Statement (EIS) (Jacobs/Arcadis, 2020) for the Concept and Stage 1 (herein referred to as the Project) was prepared. Subsequently, the Project was approved on 11 March 2021 (SSI 10038).

The construction and operation of Eastern Creek Precast Facilities (the proposal) is required to support construction of the Project. Sydney Metro prepared a Review of Environmental Factors (REF) under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to assess the impacts of the proposal and detail mitigation measures to be implemented. The proposal was determined by Sydney Metro in March 2021 as documented in the Sydney Metro West Eastern Creek Precast Facility Review of Environmental Factors Determination Report (Determination Report). The determination is subject to compliance with conditions of approval as detailed in the Determination Report.

The approved proposal involves two separate and adjacent precast concrete segment facilities (referred to as northern and southern) to support construction of the Project (refer to **Figure 1**).

This Construction Environmental Management Plan (CEMP or Plan) has been prepared in accordance with the REF, the Determination Report including the conditions of approval and the Sydney Metro Construction Environmental Management Framework (CEMF).

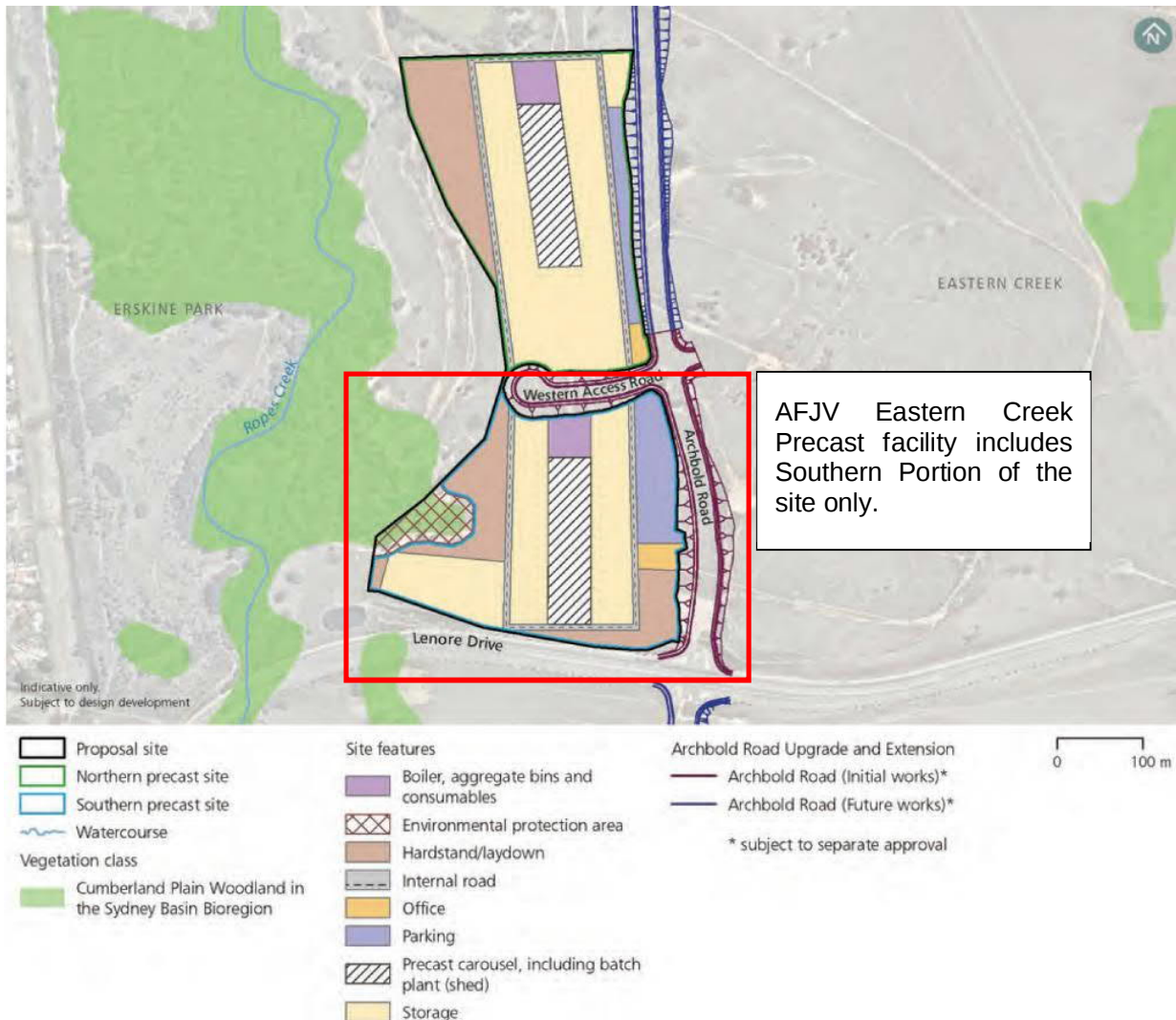


FIGURE 1: EASTERN CREEK PRECAST FACILITIES INDICATIVE SITE LAYOUT

1.2 PURPOSE AND SCOPE

The purpose of this Plan is to describe how the Acciona Ferrovia Joint Venture (AFJV) will comply with the relevant project specific requirements during construction and operation of the southern portion of the Eastern Creek precast facility, referred to herein as the Works and detailed in Section 1.3.2.

Adherence to this document will ensure that the Works is delivered in accordance with the contract requirements and the project specific environmental management system (AFJV EMS) and policies. Section 2.1 provides an overview of the AFJV EMS. The AFJV's EMS meets the requirements of ISO 14001 Environmental Management Systems. This Plan has been prepared in accordance with:

- The REF
- The Determination Report (including the conditions of approval)
- The CEMF
- AS/NZS ISO 14001 – EMS
- Acciona's corporate EMS certified to ISO14001:2015

The scope of the Plan applies to the construction and operation of the Works (refer to Section 1.3.2) and involved AFJV personnel and subcontractors.

This Plan outlines how AFJV will comply with and implement the applicable elements from the following documents:

- The Determination Report for the REF
- The CEMF
- Environment Protection Licence (EPL) (when granted).

This Plan and the associated environmental procedures, will be endorsed by Sydney Metro before the commencement of construction. The requirements relevant to the preparation of this Plan are shown in Table 1. Other requirements relevant to the CEMP are included in **Appendix B**.

TABLE 1: COMPLIANCE TABLE – REQUIREMENTS RELEVANT TO THE PREPARATION OF THIS CEMP

Construction Environmental Management Framework		
3.4(a)	Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their scope of works. The CEMP shall comprise of a main CEMP document, issue specific sub plans, activity specific procedures and site based control maps. The CEMP shall illustrate the relationship between other plans required by the contract, in particular those that relate to design management.	This Plan and Section 2.1
3.4(b)	Depending on the scope and scale of the works, Sydney Metro may decide to streamline the CEMP and sub-plan requirements. For example, depending on the risk associated with particular environmental issues it may be appropriate to remove the need for a sub plan, or replace with a procedure as part of the CEMP.	Section 2.1
3.4c	The CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework.	Section 1.2
3.4(d)	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 1.3.1
iii.	For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consentreferencing where each requirement is addressed;	Section 1.2 and Appendix B
iv.	For each plan under the CEMP, set objectives and targets, and identify measurable keyperformance indicators in relation to these;	Section 2.3
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 2.5
vi.	Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate	Section 2.5

Construction Environmental Management Framework		
	experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP;	
vii.	Identify communication requirements, including liaison with stakeholders and the community;	Section 2.7
viii.	Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.10 (b);	Section 2.6 <i>Note: Section 3.10(b) is not applicable to the Works.</i>
ix.	Management strategies for environmental compliance and review of the performance of environmental controls;	Section 2.9
x.	Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	Section 2.9
xi.	Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;	Section 2.9
xii.	Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	Section 2.8
xiii.	Include procedures for the control of environmental records.	Section 2.4.6
3.4(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 1.2
3.4(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.	Section 2.1

1.3 PROJECT DESCRIPTION

1.3.1 PROJECT KEY FEATURES

The proposal includes the following key features and activities:

- Site establishment at the proposal site at Eastern Creek including vegetation clearing, remediation and earthworks
- The establishment and operation of two separate adjacent precast facilities, the northern and southern precast facilities, on the proposal site. Each precast facility would include:
 - o A precast yard including a shed for construction of precast concrete segments and storage laydown areas
 - o Boiler, aggregate bins and consumables
 - o Office facilities
 - o On-site parking for up to 60 light vehicles
 - o Internal roads with entrances to each facility from the Western Access Road located between the northern and southern precast facilities (external roads would be subject to separate approvals)
 - o Ancillary supporting infrastructure, including utilities installation (power, water, sewerage, gas and communications), lighting, signage and landscaping.

The facilities would operate concurrently, 24 hours a day, seven days a week, for the majority of the lifespan of the project. The proposal site would be subdivided to create two separate lots, one for each precast facility. The proposal would be temporary, operating for an approximate timeframe of four to five years, subject to the delivery strategy and construction program for Sydney Metro West.

1.3.2 SCOPE OF WORKS

The Works and the subject of this CEMP includes site establishment, civil and building works and operations of the southern precast facility site detailed in Table 2.

The role of the CEMP is to act as the overarching environmental management documentation and provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and relevant environmental requirements are fulfilled for the construction activities associated with the Works.

An initial environmental risk assessment was undertaken to address the scope of this CEMP and identify management strategies or mitigation measures additional to those included in the REF and CEMF. Further detail on the risk assessment process can be found in Section 2.4.1.

TABLE 2: THE WORKS (THE SUBJECT OF THIS CEMP)

Stage	Description
Stage A – Site establishment	- Installation of erosion and sediment controls and undertaking water management works - Utilities connections - Transporting materials and equipment to the site - Establishment of temporary fencing around the proposal site and temporary roads/site access, which may include a temporary haul route during construction of the planned Archbold Road upgrade and extension - Installation of temporary construction compound, including amenities and offices.
Stage B – Civil and building work	- Establishment of internal roads, access and egress and car parking Construction/establishment of: - Hardstand/lay down and storage areas - Aggregate bins and cement silos - Sheds (production facilities and batch plant) - including internal assembly of batch plant facilities and boiler - Gantry cranes - Site offices.
Stage C - Commissioning	- Decommissioning/demobilisation of the construction area - Fit-out of production facilities and batch plant - Testing and commissioning of operational facilities - Segment haulage to Sydney Metro West (The Bays)

1.3.3 EXCLUDED FROM SCOPE

The southern precast site will be handed to AFJV from a previous stage/principal contractor and will include:

- Site establishment including vegetation removal and sediment basin
- Remediated earthworks / working pad
- Demarcation of the environmental protection area
- Internal roads installation.

1.4 CHANGES TO THE APPROVED PROPOSAL

During delivery of the Works, where the AFJV changes construction methodologies, an assessment of the consistency of that change against the REF and Determination Report will be undertaken in accordance with Sydney Metro Planning Approval Consistency Assessment Form.

The AFJV may need to undertake additional environmental assessments including traffic, noise and vibration, air quality, soil and water, ecology and/or heritage to assist in the concluding if the change is consistent or not. The assessment would be prepared in consultation with Sydney Metro. Sydney Metro would be the determining authority of the consistency assessment. If necessary, this Plan or other relevant environmental documents will be revised to incorporate additional commitments made or mitigation measures and Sydney Metro will review and endorse changes to this Plan.

If Sydney Metro determine the proposed change is inconsistent with the approved REF, the AFJV will comply with the requirements of Sydney Metro and the EP&A Act.

2. ENVIRONMENTAL MANAGEMENT PLAN

2.1 EMS OVERVIEW

The EMS for the Works is based on the Acciona Corporate EMS and comprises a suite of documentation including this Plan which is supported by procedures and protocols as relevant to the activity or associated environmental risk.

The EMS provides a governance framework to support management of the relevant project requirements and defines how the AFJV will minimise environmental risk and meet the environmental outcomes through the construction and operation of the Works.

The EMS for the Works includes:

- The AFJV Environment and Sustainability Policy
- This Plan (CEMP)
- Procedures / Permits

The EMS contains site specific documentation including procedures and other processes that enable the management of the Works and support the core governance framework, including:

- Environmental Work Methods Statements
- Site Environmental Control Map (ECM)
- Progressive Erosion and Sediment Controls Plans
- General Construction Noise and Vibration Impact Statements (GNVIS)
- Environment Procedures
- Hold points

Section 2.4 provides detail of the planning and governance processes.

2.1.1 RELATIONSHIP BETWEEN CEMP AND OTHER EMS DOCUMENTATION

Section 2.1 provides an overview of the core documents comprising the EMS, and other associated relevant documentation, such as procedures and protocols. This suite of documents identifies the controls that will be implemented during construction and operation of the Works. These documents have been prepared in response to the specific environmental requirements and have been prepared in accordance with EMMs, CEMF and relevant Sydney Metro plans, procedures, and standards.

Other plans that will interface with the CEMP and other EMS core documents to ensure the environmental requirements are implemented include the Sustainability Management Plan, emergency response, safety, project management and construction plans.

2.1.2 HOLD POINT

The internal hold points applied to the Works are identified in Table 6. The internal verification process will require the approval of the Environmental Manager (or delegate) to proceed.

2.2 ENVIRONMENT AND SUSTAINABILITY POLICY

The AFJV Environment and Sustainability Policy is provided in **Appendix A** and has been developed in accordance with Section 5.2 of ISO 14001:2015 to demonstrate our unwavering commitment to environmental protection and consideration in our service provision.

The policy is consistent with the Sydney Metro Environment and Sustainability Policy and EMS.

2.3 OBJECTIVES AND TARGETS

Environmental objectives and targets are based on the management objectives outlined in the CEMF and detailed in Table 3. The performance of the Works will be monitored against the objectives and targets (refer to Section 2.9) and performance monitoring will be

documented in the compliance reporting and at least on an annual basis as part of auditing requirements (refer to Section 2.9.3).

TABLE 3: OBJECTIVES AND TARGETS

Objective	Where Addressed
Spoil management Construction works will be undertaken to meet the following objectives: - Minimise spoil generation where possible - The project will mandate 100% reuse or recycling (on or off-site) of usable spoil - Spoil will be managed with consideration to minimising adverse traffic and transport related issues - Spoil will be managed to avoid contamination of land or water - Spoil will be managed with consideration of the impacts on residents and other sensitive receivers, and - Site contamination will be effectively managed to limit the potential risk to human health and the environment.	Environment and Sustainability Policy Waste Classification Procedure Waste Minimisation Procedure Erosion and Sediment Control Plan Sustainability Management Plan Unexpected Finds Protocol
Groundwater The following groundwater management objectives will apply to construction: Prevent the pollution of groundwater through appropriate controls	Erosion and Sediment Control Plan
Construction noise and vibration The following noise and vibration management objectives will apply to construction: - 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, and - Maintain positive, cooperative relationships with schools, childcare centres, local residents and building owners.	General construction noise and vibration impact statement/s Out of Hours Work Permit Community Communications Strategy
Heritage The following heritage management objectives will apply to construction: - Minimise impacts on items or places of heritage value - Avoid accidental impacts on heritage items, and - Maximise worker's awareness of Aboriginal and Non-Aboriginal heritage.	Sydney Metro Unexpected Heritage Finds Procedure Training (refer to Section 2.6)
Flora and fauna The following flora and fauna management objectives will apply to construction: Minimise impacts on flora and fauna	Fauna Rescue Procedure Vegetation and Weed Management Procedure

• Retain and enhance existing flora and fauna habitat wherever possible, and • Appropriately manage the spread of weeds and plant pathogens.	Environmental Control Map (refer to Section 2.4.4)
Visual amenity	
The following visual and landscape management objectives will apply to the construction of the project: • Minimise impacts on existing landscape features as far as feasible and reasonable, and • Reduce visual impact of construction to surrounding community.	Environmental Control Map (refer to Section 2.4.4)
Soil and water	
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, and • Source construction water from non-potable sources, where feasible and reasonable.	Environment and Sustainability Policy Waste Classification Procedure Waste Minimisation Procedure Erosion and Sediment Control Plan Sustainability Management Plan
Air quality	
The following air quality management objectives will apply to the construction: • 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.	Erosion and Sediment Control Plan
Waste	
The following waste objectives will apply to construction: • Minimise waste throughout the project life-cycle, and • Waste management strategies will be implemented in accordance with the <i>Waste Avoidance and Resource Recovery Act 2001</i> management hierarchy as follows: - o Avoidance of unnecessary resource consumption - o Resource recovery (including reuse, reprocessing, recycling and energy recovery), and disposal. - o Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by the Principal Contractor.	Environment and Sustainability Policy Waste Classification Procedure Waste Minimisation Procedure Sustainability Management Plan

2.4 PLANNING AND GOVERNANCE

This CEMP sits within the framework of the Acciona corporate EMS certified to ISO14001:2015, and as discussed in Section 2.1 is supported by a series of environmental

procedures and internal permits to maintain a high level of governance with environmental requirements. Where appropriate, the environmental requirements will be integrated into site-specific documentation as discussed in the following sections.

The EMS includes subscription to an environmental legislation monitoring service (Enviro Matters Environmental News Alerts), to ensure the Works remain up to date with changing environmental legislation or other requirements. The Environment Manager is responsible for reviewing the updates to determine the relevance of the change. When necessary, this CEMP will be amended to ensure compliance. Regulatory approvals will be obtained or amended as necessary and work practices altered to ensure compliance. All relevant AFJV personnel and subcontractors will be advised of the change (refer to Section 2.6).

The EMS is supported by project risk assessments, regulatory requirements, environmental requirements relevant to the Works and site-specific documentation.

2.4.1 ENVIRONMENTAL RISK ASSESSMENT

An initial environmental risk assessment workshop was held on 23 September 2021 to ensure potential risks associated with the Works (the subject of this Plan) have been properly considered and that appropriate and adequate controls have been identified. Each activity was assessed to identify associated environmental hazards, initial risk levels, mitigation measures and how to avoid, manage and/or minimise risks and the residual risk following the implementation of the identified measures.

The risk workshop was attended by senior representatives of the AFJV environmental team and various representatives from the construction team. All attendees had the opportunity to discuss the activity and provide feedback on potential management and subsequent residual risk. Please refer to **Appendix C** for the Environmental Risk Register.

For those activities with residual environmental risks identified as 'high', the justification for accepting the residual risk was discussed with all attendees. For all activities in this category, an Environmental Work Method Statement (EWMS) will be developed for that activity (refer to Section 2.4.3) where other risk assessment strategies are not already in place.

This register is reviewed and updated as part of periodic review the CEMP, or when significant new works are due to commence. More information about CEMP review is provided in Section 2.9.3.

2.4.1.1 ONGOING ENVIRONMENTAL RISK IDENTIFICATION AND MANAGEMENT

Ongoing environmental risk and opportunity identification is undertaken during the following risk assessments:

- Environment Risk Register – high level risks transferred to Project Wide Risk Register
- Project Wide Risk Register
- Environmental Work Method Statements (refer to Section 2.4.3)
- Risk assessment undertaken on site at pre start meetings (refer to Section 2.6.3)

The Project Wide Risk Register is tabled with the Senior Leadership Team to ensure an executive approach to high level risks is maintained throughout the Works.

The Environment Manager has authority to approve all risk assessment types (with the exception of EWMS and pre start assessment given these require sign off on site) to ensure that all environmental risks and opportunities are adequately raised and addressed.

Environmental risks, controls and accountabilities identified will be communicated to all relevant personnel through the preparation and communication of the Environmental Procedures and Checklists (refer to Section 2.4.6) and ECM (refer to Section 2.4.4), Environmental Work Method Statements, toolbox talks and pre start meetings.

2.4.2 RELEVANT LEGISLATION AND APPROVALS

The relevant legislation to the Works is listed in Table 4. The approvals and licencing requirements are listed in Table 5.

TABLE 4: RELEVANT LEGISLATION

Legislation	Applicability
Environment Protection and Biodiversity Conservation Act 1999	The REF assessed the impacts upon matter of national environmental significance. No significant impact was identified and the proposal was not referred.
National Greenhouse and Energy Reporting Act 2007	Acciona will undertake the reporting for the Works on behalf of the AFJV.
Biosecurity Act 2015	Noxious weeds will be managed in accordance with the Vegetation and Weed Management Procedure
Biodiversity Conservation Act 2016	Fauna handling will be managed in accordance with the Fauna Rescue Procedure
Environmental Planning and Assessment Act 1979	Modifications to the REF Determination would be assessed under the EP&A Act.
Protection of the Environment Operations Act 1997	An Environment Protection Licence (EPL) will be sought for scheduled activities.
Roads Act 1993	Where required, consent under Section 138 will be sought
Waste Avoidance and Resource Recovery Act 2001	Procedures for waste avoidance and resource recovery will be identified in the Waste Minimisation Procedure.

TABLE 5: ENVIRONMENTAL APPROVALS AND PERMITS

Regulatory Authority	Requirement
Sydney Metro	REF Determination under Part 5 of the EP&A Act Modifications to the REF Determination require approval from Sydney Metro. Endorsement of CEMP
EPA	Acciona will obtain an Environment Protection Licence (EPL) for <i>Concrete works</i> under Schedule 1 of the POEO Act. Under Part 5.7A the licence holder has a duty to prepare and implement a Pollution Incident Response Management Plan.

2.4.3 ENVIRONMENTAL WORK METHOD STATEMENTS

AFJV will prepare EWMS for high-risk activities identified in the Environmental Risk Register (refer to Section 2.4.1).

The EWMS will incorporate relevant mitigation measures and controls, including those from this Plan and environment 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 and form part of the Construction Method Statement of the applicable works/activity.

EWMS will be prepared progressively throughout construction, in consultation with the relevant site management personnel. All AFJV 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.

Each EWMS will include at least:

- A breakdown of the work tasks relevant to the specific activity and indicate responsibility for each task
- Potential environmental impacts associated with each task
- A risk rating for each of the identified potential impacts
- Mitigation measures relevant to each of the work tasks
- Responsibility to ensure the implementation of the mitigation measures.

Monitoring, inspections and auditing of compliance with the EWMS will be undertaken regularly by relevant site management personnel and/or environmental coordinators.

An ECM will be used to identify key risk areas and assist in planning and management of specific areas and provide a forum for ongoing communication with construction personnel throughout delivery of the Works.

2.4.4 ENVIRONMENTAL CONTROL MAPS

An ECM will be prepared for the site and will delineate site boundaries and identify environmental controls, procedures and relevant environmental requirements or specific activity. In addition, the ECM will include the training and competency requirements. As per the CEMF Section 3.6(c) ECMs will:

- depict the current representation of the site;
- indicate which environmental procedures, environmental approvals, or licences are applicable;
- illustrate the site, showing significant structures, work areas and boundaries;
- illustrate the environmental control measures and environmentally sensitive receivers;
- be endorsed by the AFJV Environment Manager or delegate;
- include all the training and competency requirements for relevant workers; and
- be communicated to relevant workers, including sign-off for the appropriate procedures prior to commencing works on the specific site and / or activity.

ECMs will be used in conjunction with EWMS to help identify key risk areas and provide a forum for ongoing communication with construction personnel throughout the delivery of the Works.

2.4.5 EROSION AND SEDIMENT CONTROL PLAN

Erosion and Sediment Control Plan (ESCPs) are planning documents that identify 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. ESCPs may be produced in conjunction with EWMS and ECMs to provide detailed site-specific environmental mitigation measures.

2.4.6 ENVIRONMENTAL PROCEDURES

AFJV will implement Environment Procedures that substitute the requirement for CEMP sub-plans as agreed with Sydney Metro (refer to Table 6). Where necessary, the Environment Procedures will be developed in accordance with a corresponding Sydney Metro procedure.

TABLE 6: ENVIRONMENT PROCEDURES AND PERMITS

Procedure	Responsibility	Timing
Erosion and Sediment Control Plan	Environment Coordinator Site Supervisor Project Engineer	Prior to and during works
Fauna Rescue Procedure	Environment Coordinator Site Supervisor Project Engineer	Prior to and during works
Vegetation and Weed Management Procedure	Environment Coordinator Site Supervisor Project Engineer	Prior to and during works
Waste Classification Procedure	Environment Coordinator Site Supervisor	During works
Waste Minimisation Procedure	Environment Coordinator Site Supervisor	During works
General noise and vibration impact statement/s and Out of Hours Work Permit	Environment Coordinator Site Supervisor	Prior to establishment and during works

AFJV will develop a suite of forms and registers that will support the EMS including (but not limited to):

- Waste Tracking Register
- Water Discharge Permit
- Environmental Incident Register
- Environmental Non-Conformance Register
- Environmental Corrective Actions Register
- Precast Works Environmental Inspection Checklist.

Refer to Section 2.9.5 for further detail regarding the project environmental schedules.

2.4.7 HOLD POINTS

Hold points are a verification point that prevents works from commencing prior to approval from the AGJV Environment Manager (or delegate).

Internal hold points have been established for key activities that require environmental management measures to be in place prior to the activity starting which have been identified below in Table 7.

TABLE 7: ENVIRONMENT HOLD POINTS

Activity	Permit/Approval required	Where addressed
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Prior to any ground disturbance	Erosion and Sediment Control Plan	Section 2.4.5
Discharge of any water including excavated areas retaining water	Water Discharge Permit	Section 3.4
Activities outside of normal construction hours	General noise and vibration impact statement/s and Out of Hours Work Permit	Section 3.1

2.5 PEOPLE, RESPONSIBILITIES AND COMMUNICATION

AFJV is implementing separate roles for environment and sustainability in recognition of the broader scope of sustainability and our commitment to community, people and environmental outcomes. The environmental team will work closely with sustainability and other workforce, safety and community teams in the one People and Social Capital stream. This will enable our environmental delivery team to be structured to deliver specialised knowledge and skill in this important area, while still being integrated with related teams.

Table 8 details the key environmental resources allocated to the Works, and other roles that have environmental responsibilities.

TABLE 8: AUTHORITY AND KEY ENVIRONMENTAL RESPONSIBILITY

Position	Authority and Key Environmental Responsibilities
Project Director	- Accountable for delivery of the Works and ultimately accountable for the implementation of the CEMP - Responsible for approving adequate resources to address the requirements of environmental compliance - Responsible for environmental management and compliance for the Works - Managing any necessary adjustments for budgetary commitments to enable environmental obligations to be fulfilled - Reviewing the results of notifiable environmental incident investigations and major non-conformances - Ensure that the project team understand the environmental requirements to ensure environmental impacts are minimised, obligations are met, and targets achieved. - Endorse the process to minimise risk of unacceptable impacts on the environment - Authorise to stop works immediately if an unacceptable impact on the environment is likely to occur. Skills: - Be experienced in the design, construction and project management of large projects similar to the Project
Environment Manager	- Project leadership on all aspects of environmental management across the AFJV project team, with Sydney Metro, EPA and other regulatory authorities and with key stakeholders - Overall responsibility for the implementation of environmental matters on the Project. - Development, implementation, monitoring and updating of the CEMP and associated environmental plans in accordance with ISO14001. - Report to Project Director and other senior managers on the performance and implementation of the CEMP. - Manage compliance with project approvals and site environmental performance, in conjunction with our design, construction, commercial, quality, traffic, safety and community teams - Ensure management reviews of the CEMP are undertaken annually, documented and actions implemented. - Ensure environmental risks of the Project are identified and appropriate mitigation measures implemented. - Identify where environmental measures are not meeting the targets set and where improvement can be achieved. - Ensure environmental protocols are in place and managed. - Approve / reject Out of Hours Works activities. - Obtain and update all environmental licences, approvals and permits as required.

Position	Authority and Key Environmental Responsibilities
	▪ Attend Sydney Metro's environment and approvals meetings ▪ Respond to EPA compliance queries ▪ Manage environmental reporting within the Project team and to Sydney Metro and regulatory authorities. ▪ Oversee site monitoring, inspections and audits. ▪ Manage all subcontractors 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/alerts. ▪ Review and approve EWMS, ESCPs & ECMs. ▪ 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 and manage close-out of these. ▪ Stop activities where there is an actual or immediate risk of harm to the environment, or to prevent environmental non-conformities, and advise the Project Director, Construction Director and Superintendent. ▪ Respond to, report and investigate environmental incidents ▪ Manage the project accountability for reporting of environment related complaints to the EPA with support from the Community team ▪ Manage all aspects of the requirements of the Environment Protection Licence Skills: ▪ Recognised tertiary level environmental qualifications and at least fifteen years of experience in the preparation and implementation of environmental management systems and plans in infrastructure projects
Stakeholder and Community Engagement Manager	▪ Reports directly to the Project Director and has primary responsibility for liaison with community and business stakeholders ▪ Keep relevant community stakeholders informed and provide input where appropriate ▪ Liaise with local council and relevant community stakeholders and ensure that all team members are aware of the community consultation requirements and complaints arrangement systems Skills: ▪ Recognised qualifications and at least ten years of communications and community relations experience with extensive experience in the management of community liaison, consultation and communications

Position	Authority and Key Environmental Responsibilities
Construction Director, Construction Manager, Project Managers and Project Engineers	- Responsible for ensuring that environmental considerations are integral to the decision making for all construction activities - Reporting the Environmental performance to the Project Director in accordance with the CEMP - Ensuring the compliance by monitoring onsite environmental management - Ensuring relevant environmental procedures are implemented onsite - Ensuring that the environment is always considered in forward planning and scheduling - Construction Work Method Statements incorporate planning for and management of environmental risks associated with the works - Liaise with the environment team to ensure that environmental controls and procedures contained in the CEMP are integrated into the construction works - Ensuring sub-contractor compliance with the requirements set out in this plan and other relevant documentation - Ensuring information concerning the environment is communicated to the relevant personnel (including subcontractors) and any matters raised by employees concerning the environment is taken up, investigated and any action necessary completed - Ensuring processes are in place for ensuring environmental controls are implemented and effective - Ensuring enquiries and/or investigations of hazards, incidents and near misses are reviewed and the outcomes are incorporated into better management practices and relevant documentation - Stop work immediately if an unacceptable impact on the environment is likely to occur. - Establishing and maintaining communication channels between management and the workforce including those who have a shared duty of care
Superintendent & Site Supervisor	- Ensuring relevant plans, procedures, objectives and targets, EWMS are explained to personnel and a record of understating is obtained prior to personnel starting the activity work - Conducting works to minimise environmental impacts and achieve sustainability objectives - Taking preventative action to eliminate or minimise all environmental hazards as advised by the Environment Manager - Provide resources for the implementation of corrective actions for non-conformances resulting from investigations, incidents, hazards, injuries and near misses - Complying with any responsibilities as assigned in project environmental documentation and associated procedures - Disseminating environmental risk management and emergency procedures during site induction and pre-start meetings - Responsible for checking that environmental controls remain effective, through maintenance, and that field personnel are provided with appropriate environmental training - Stop work immediately if an unacceptable impact on the environment is likely to occur.
Environment Advisor / Coordinator	- Report directly to the Environment Manager - Responsible for performing regular on-site liaison and inspections, and to provide environmental advice and assistance to construction personnel - Manage implementation of environmental management sub-plans

Position	Authority and Key Environmental Responsibilities
	- Coordinate compliance tracking and/or perform environmental monitoring activities - Ensuring relevant plans, procedures, objectives and targets, EWMS are explained to personnel and a record of understating is obtained prior to personnel starting the activity work - Assist with training and induction of personnel - Raising any environmental impacts, issues or concerns immediately with the relevant supervisor and escalate as required through Project Manager to Environment Manager. - Risks that pertain to regulatory or notifiable events or non-compliances to be raised with Project Manager and Environmental Manager immediately.
Construction personnel	- All staff and subcontractors are responsible for their own environmental performance of the project - Attending environmental training and adhering to and remaining familiar with the principles covered in training session(s) - Undertaking works whilst ensuring that environmental controls and procedures contained in the CEMP are integrated - Raising any environmental impacts, issues or concerns immediately to the relevant supervisor.

2.5.1 SUBCONTRACTORS

All subcontractors are required to work in accordance with this Plan. AFJV will monitor environmental performance of subcontractors and their compliance over the length of the contract. An environment and sustainability checklist will be issued with contract documentation and reviewed throughout the delivery of their contract to ensure performance in accordance with the CEMP and Sustainability Management Plan. The environmental requirements of the Works will be summarised in contract documentation and all subcontractors will be required to undergo an induction prior to commencement of works. All subcontractors are required to work under the AFJV EMS.

2.5.2 SPECIALIST CONSULTANTS

The AFJV will use specialist environmental consultants where necessary to support the AFJV environment and approvals team. Table 9 provides a list of likely specialist environment and specialists, and their proposed scope of work.

TABLE 9: SPECIALIST CONSULTANTS

Discipline	Scope of Work
Noise and Vibration	Prepare GNVIS, and undertake noise and vibration monitoring
Soil Conservation	CPESC Review of Progressive Erosion and Sediment Control Plans (PESCPs)
General environmental / sustainability	Classification and handling of spoil, waste minimisation and reuse Technical ISCA support.

2.5.3 SYDNEY METRO

Sydney Metro is the proponent and the determining authority under the EP&A Act. Sydney Metro has ultimate responsibility for compliance with EMM as set out in Schedule D4 of the D&C Deed. Refer to **Appendix B** for environmental requirements relevant to the delivery of the Works that will be met by the AFJV.

2.6 TRAINING, COMPETENCE AND AWARENESS

The Environment Manager will coordinate environmental training with AFJV's broader program of training and development activities.

2.6.1 PROJECT INDUCTION

All AFJV personnel, including subcontractors, are required to attend a compulsory site induction that includes an environmental component, prior to commencement onsite. The environmental component will include an overview of:

- AFJV Environment & Sustainability Policy
- Relevant details of the CEMP including purpose and objectives
- Key environmental issues
- Conditions of environmental licences permits and approvals
- Specific environmental management requirements and responsibilities
- Mitigation measures for the control of environmental issues
- Incident response and reporting requirements
- Information relating to the location of environmental constraints

The Environment Manager (or delegate) will develop the environmental components of the project induction in collaboration with the wider AFJV team including safety, traffic and community engagement. Where possible, components of the project induction will be mapped to accredited training units in accordance with the Australian Qualification Framework and Acciona National Training Matrix, as managed by the AFJV Workforce Development & Industry Participation portfolio. The AFJV Environment Manager is responsible for the content and delivery of environmental management components of the project induction collaboratively with the AFJV Workforce Development & Industry Participation Manager.

2.6.2 TOOLBOX TALKS AND AWARENESS

Targeted environmental awareness training will be provided to project 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. Training is generally delivered by the Environment and Sustainability team (or their delegate). Environmental awareness training may be accredited or non-accredited with topic examples including:

- CEMP on-boarding
- Project Approvals, Licences, obligations and requirements
- Out of hours works approvals and permits processes and requirements
- Dewatering of sediment control basins
- Environmental incident identification, response and management
- Erosion & Sediment Control techniques & practices
- Environmental noise & vibration monitoring
- Water treatment plant monitoring, alarms and response

Where possible, environmental awareness training will be mapped to accredited training units in accordance with the Australian Qualification Framework and Acciona National Training Matrix, as managed by the AFJV Workforce Development & Industry Participation portfolio. The AFJV Environment Manager is responsible for the content and delivery of environmental awareness training collaboratively with the AFJV Workforce Development & Industry Participation Manager. Where practicable environmental awareness training will be delivered by subject matter specialists.

Toolbox talks will be scheduled weekly and used to raise awareness and educate personnel on construction related environmental issues during construction. The talks will be tailored to specific environmental issues including:

- Environmental incident identification & reporting
- Erosion and sedimentation control
- Noise, vibration and hours of work

- Spill response
- Vegetation protection
- Dust control.

Attendance at toolbox talks is mandatory and attendees are required to sign an attendance form. Attendance records are maintained.

All AFJV personnel and subcontractors undertaking a task governed by an EWMS must participate in training on the EWMS, and acknowledge that they have read and understood their obligations by signing an attendance record prior to commencing work.

2.6.3 DAILY PRE-START MEETINGS

The pre-start meeting is a tool for informing the workforce at each site 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.

The Site Supervisor will conduct a daily pre-start meeting for the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. The environmental component of pre-starts will include any environmental issues that could potentially be impacted by, or impact on, the day's activities. All attendees will sign on to the pre-start and acknowledge their understanding of the issues explained. A register of pre-start meetings will be maintained.

2.7 COMMUNICATION

2.7.1 SYDNEY METRO

The Environment Manager is responsible for reporting on the environmental performance of the Works to Sydney Metro. The Environment Manager will attend Environment & Approvals Meeting chaired by Sydney Metro to identify and discuss key environmental matters.

Additionally, in accordance with the Deed, a monthly project wide progress report will be provided to Sydney Metro, this will include an environmental management component.

2.7.2 PROJECT TEAM COMMUNICATIONS

The Environment Manager will attend project senior leadership meetings. These meetings will discuss upcoming work programs and construction methodologies and provide a forum for discussion and management of environmental issues. The senior leadership meetings will enable communications with other AFJV team members including the Community and Stakeholder Manager.

For further detail regarding internal communications refer to Sections 2.6.2 and 2.6.3.

2.7.3 COMMUNITY COMMUNICATION

A Community Communication Strategy (CCS) will be developed for the Works in accordance with the Sydney Metro Overarching Community Communication Strategy. The CCS will identify internal and external communication processes, communication tools, complaints management and are specific to the works site.

2.8 INCIDENT NOTIFICATION

The key to effective incident prevention onsite is ongoing monitoring, surveillance and training. During construction, the following onsite preventative strategies are implemented to reduce the likelihood and severity of incidents/ emergencies:

- Weekly inspections of active work sites
- Completion of Environmental Inspection Checklists
- Issue and quick close-out of non-compliance notices (as required)
- Prompt maintenance and repairs of environmental controls
- Ongoing environmental training

- Emergency drills may be undertaken in areas of high environmental sensitivity
- Environmental audits of worksites, subcontractors and general compliance, and
- Environmental and safety information on hazardous substances (e.g. SDS) will be available at the main site office together with information as to where such substances are to be stored.

Incident classification and notification will be undertaken in accordance with the Sydney Metro Environmental Incident Notification and Classification Procedure (**Appendix E**) which describes specific requirements based on the incident classification. Classification categories and notifications are summarised in Table 10.

TABLE 10: INCIDENT CLASSIFICATION AND NOTIFICATION MATRIX

Classification		Notification
Report only	Class 3	• C6 - No appreciable changes to environment and/or highly localised event • C5 - Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries • C4 - Short-term and/or well-contained Environmental effects. Minor remedial actions probably required
	Class 2	▪ C3 - Impacts external ecosystem and considerable remediation is required ▪ C2 - Long-term environmental impairment in neighbouring or valued ecosystems
	Class 1	▪ Irreversible largescale environmental impact with loss of valued ecosystems
Notifiable		▪ The Environment Manager will notify the Project Director immediately ▪ The Project Director or the Environment Manager would notify the Sydney Metro Environmental Manager as soon as practicable ▪ The Environment Manager would notify the EPA, and other relevant regulatory authorities immediately ▪ The Environment Manager would provide written notification to Sydney Metro within 48 hours

The management of incidents will be in accordance with Part 5.7A of the POEO Act and the Sydney Metro Environmental Incident Notification and Classification Procedure. In summary this includes:

Actions for all incidents

- An immediate response to make the area safe, stop the source/spread of the incident and minimise environmental damage as quickly as possible:
 - Notify the Environment Manager and the Construction Manager, who will: determine appropriate management response to the incident to prevent or minimise environmental harm.
 - identify any non-compliances associated with the incident
 - Classify the incident in accordance with the classification system detailed in Table 10.

Notification of Incidents

- The Environment Manager will notify the Project Director immediately of a 'notifiable event' classification (being a Class 1 or 2 incident) in accordance with classification matrix in Table 10
- The Project Director or the Environment Manager would notify the Sydney Metro Environmental Manager as soon as practicable in the event of a notifiable incident. The AFJV Environment Manager would notify the EPA, and other relevant regulatory authorities.
- The Environment Manager would provide written notification to Sydney Metro within 48 hours of any incident

Investigation of Incidents

- All incidents will be investigated to the level required to address the incident classification. Incident investigation reports for Class 1 and 2 incidents and will be provided to Sydney Metro.

Preventative and Corrective Actions

The Environment Manager will maintain an Environmental Incident Register for the duration of the Works.

All AFJV personnel and subcontractors are required to report environment incidents, non-compliances, near misses to their supervisor and assist in the completion of an Environment Incident Report as directed or required. Subcontractors may be asked to initially prepare an incident report in accordance with their company procedures.

The Environmental Incident Report will identify the corrective and preventative actions required in order to avoid a repeat occurrence of the incident. Actions, responsibilities and timeframes for rectification will be managed within the Environmental Incident Register.

The AFJV EMS is applied to internally report on HSEQ performance and track HSEQ compliance. All incidents are to be notified to the Acciona Environment & Sustainability Manager, Central Region within two hours of identification. The AIMS Lucidity software platform will be used to record all environmental incidents. This includes:

- Reporting incidents, hazards and near misses, which must be reviewed and closed out by senior management,
- Conducting and recording of audits and inspections, and generation of reports,
- Tracking non-conformances and corrective actions, and
- Assigning actions to responsible parties as a result of audits, incidents and inspections.

Non-Compliances

An environmental non-compliance is a breach of an environmental requirements identified in the conditions of approval, the EPL or other project requirements documented in the CEMP. Non-compliances can be identified during incident investigation, audits or through a complaint investigation. They can also be identified by Sydney Metro during audits and surveillance activities.

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 the Environmental Incident Register.

In the case of a non-compliance, the Environment Manager would notify Sydney Metro within 48 hours of the non-compliance being confirmed.

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.

The AFJV EMS is applied to internally report on HSEQ performance and track HSEQ compliance. All non-compliances reportable to regulatory authorities are to be notified to the Acciona Environment & Sustainability Manager, Central Region within two hours of

identification. The AIMS Lucidity software platform will be used to record all environmental non-compliances.

2.9 MONITORING, INSPECTIONS, AUDITING

2.9.1 ENVIRONMENTAL MONITORING

Issue-specific environmental monitoring will be undertaken by the Environment Manager, or delegate, as required by a condition of approval, permit or licence condition. A summary of the construction environmental monitoring is presented in Table 11.

Refer to Section 2.8 for the process should an incident or non-compliance be identified upon a monitoring event.

TABLE 11: CONSTRUCTION ENVIRONMENTAL MONITORING

Source	Description	Timing
NV2	Noise monitoring	Prior to Works
CEMF 8.2c	Noise and vibration	As required by the GNVIS
EPL	TBC	

2.9.2 ENVIRONMENTAL INSPECTIONS

The Environment Manager will ensure that the Works are compliant with the environmental requirements, with site-based environmental inspections confirming that mitigations measures are implemented in the field. Weekly site environmental inspections will be undertaken by the Environment Coordinator using a project-specific checklist to assess the ongoing effectiveness and suitability of the project's environmental controls (**Appendix G**). The inspections will cover:

- Specific environmental aspects as described in the relevant procedures and permits
- High risk activities and processes
- Work undertaken in environmentally sensitive areas
- Site preparedness for adverse weather conditions, including adequacy of environmental controls and availability of emergency equipment
- A record of the condition of the environmental controls and mitigations being implemented
- Pre and Post-rainfall inspections.

Copies of all Environmental Inspection Checklists will be kept with the project records. The environmental action list will then be issued to the site supervisor for actioning. Actions will be assigned an implementation priority by our Environmental Coordinator based on environmental risk. Evidence of close out (usually a photograph) is supplied back to the Environmental Coordinator and saved as a record.

TABLE 12 provides an indicative list of environmental inspections that may be undertaken during the delivery of the Works.

TABLE 12: INDICATIVE INSPECTIONS SCHEDULE

Inspection	Frequency	Source	Reporting	Who
Site environmental inspections including (but not limited to) ERSED controls, air quality and environmental controls	Weekly	Best practice	Project specific checklist	Environment Coordinators
Sydney Metro inspections	As determined by Sydney Metro	Deed	Inspection checklist	Sydney Metro personnel

Inspection	Frequency	Source	Reporting	Who
Daily visual inspections during operational hours	During construction	Best practice	Inspection checklist / notes	Site Supervisor

2.9.3 AUDITING, REVIEW AND IMPROVEMENT

AFJV will undertake internal environmental auditing, including audits of works performed by subcontractors. These audits will be undertaken in accordance with the terms of the AS/NZS ISO 19011:2014 and will commence within 12 months of the commencement of construction (being approval of this Plan) and every 12 months thereafter. Generally, audits will address:

- Compliance with relevant approval, permit or licence conditions
- Compliance with the relevant aspects of the EMS, this Plan, the Sustainability Management Plan and procedures
- Community consultation and complaint response
- Environmental training records; and
- Environmental monitoring and inspection results.

In accordance with the D&C Deed, a Compliance Working Group will be established. The monthly Compliance Working Group meeting is the forum in which the overall audit program for the CTP is coordinated and managed.

Refer to TABLE 13 for an indicative audit schedule. An annual schedule for auditing the CEMP will be maintained in the project wide integrated audit program and will be reviewed on a monthly basis at the monthly Compliance Working Group, and updated when necessary. Refer to the Sustainability Management Plan for an indicative sustainability audit schedule.

TABLE 13: INDICATIVE AUDIT SCHEDULE

Audit	Scope	Timing	Responsibility	Recipient of Audit Report
Acciona Independent ISO14001 Certification Audit	Verify compliance with ISO14001	Annually	Acciona Environment Manager	AFJV, Acciona and Ferrovial

2.9.4 NON-CONFORMANCE

A non-conformance is a breach of the EMS which requires a system improvement action. The Environment Manager will record any that are identified during observations, inspection or audits or a result of a complaint or environmental incident in an Environmental Non-Conformance Register. Where there is rectification works to occur, an appropriate person will be identified by the Environment Manager who will be issued a corrective or preventative action to implement, and a timeframe by when this should be completed. The action will remain open until the Environment Manager has reviewed the supplied evidence and confirmed the non-conformance has been adequately addressed.

2.9.5 RECORDS OF ENVIRONMENTAL ACTIVITIES

The Environment Manager is responsible for maintaining all environmental management documents and records and ensuring they are current. These include:

- All environmental monitoring, inspection and compliance reports/records
- Environmental monitoring data
- Reports on environmental incidents, other environmental non-conformances and follow-up actions
- Results of audits

- Minutes of environmental management system review meetings and evidence of any actions taken
- Induction and training records
- Procedures and protocols
- Checklists, forms and templates
- Correspondence with public authorities
- Complaints and enquiries received, and follow-up actions
- Notifications received by regulators
- Community engagement information
- The CEMP
- EWMS.

AFJV will retain compliance evidence detailing the outcomes of environmental inspections, internal AFJV audits and external Sydney Metro audits. These records will be reviewed by the Environment Manager and will be utilised in the preparation of Compliance Reports detailing the outcome of any surveillance activities. These reports will be provided to Sydney Metro at a frequency to be agreed.

The following indicative environmental schedules will be used to support the EMS:

- Environmental Inspection Checklist
- Waste Tracking Register
- Environmental Incident Register
- Environmental Non-Conformance Register
- Environmental Actions List / Register

It is noted that the included schedules are separate documents that are controlled independently of the CEMP and will change over time. The CEMP will not be updated as schedules are modified. A copy of the indicative environmental inspection checklist is provided in **Appendix G**.

Acciona's document control management system, Lucidity (Location of Integrated Management System Documents), will be used for recording and tracking actions related to incident investigations, inspections and audits. Lucidity will control the flow of documents related to these activities within AFJV and with Sydney Metro, and CTP subcontractors. This web-based system incorporates AFJV's Health, Safety, Environmental, Quality and Sustainability (HSEQS) Management Systems.

Lucidity provides comprehensive support to our staff. By using the database, authorised personnel have instant access to logically filed data. It is easy to use and accessible on any computer, phone or tablet.

Procedures related to the system will ensure that all compliance and environmental 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.

Using Lucidity records will be accessible onsite for the duration of works and will be retained 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.

2.9.6 CEMP REVISION

Continual improvement is achieved through regular measurement, evaluation, audit and review, and AFJV will update the CEMP annually with a specific focus on identifying improvements. The CEMP will be updated:

- 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 that identify matters that require attention
- Following reportable environmental incidents
- Upon identification of new risks, including risks identified during risk register updates
- When non-compliances are identified
- In response to a project change that changes the scope of the Works.

The Environment Manager authorises reviews of the CEMP. Sydney Metro endorses the CEMP.

2.9.7 MANAGEMENT REVIEW

Management reviews of the EMS will be undertaken as part of our rigorous continual improvement process. The purpose is to periodically 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 ensure compliance.

Our Environment Manager will review the CEMP and its implementation within 12 months following the commencement of construction (being the approval of the CEMP) and every 12 months thereafter, or within two months of a notifiable incident (refer to Section 2.8). 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.

On an annual basis, the senior management team contribute to this performance review of the EMS. This annual review will consider:

- Opportunities to improve environmental management documentation, processes and practices
- Key environmental risks
- Sydney Metro feedback
- Non-conformances including those identified in environment inspections and audits
- An analysis and verification of the effectiveness of corrective and preventative actions
- Complaints
- Effectiveness of environmental management documentation implementation
- Environmental objectives and targets including sustainability performance
- Compliance with legal and other requirements
- Organisation changes
- Effectiveness of training and inductions.

The outcomes of the reviews may result in the amendment of this CEMP or related documents. Sydney Metro would endorse the CEMP if any amendments were made.

3. CONSTRUCTION CONTROLS

The EMS has been prepared in accordance with the environmental requirements relevant to the Works. Environment procedures have been prepared to manage environmental impacts and achieve the environmental performance outcomes as identified in the CEMF through the implementation of EMMs. These documents will be used to support the CEMP and provide further detail regarding the management of environmental aspects during delivery of the Works. The following sections summarise the documentation required to manage each environmental aspect and/or potential impact.

3.1 WORKING HOURS AND NOISE MANAGEMENT

Construction of the Works would be undertaken within standard Project working hours 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:

- Those which have been described in respective environmental assessments as being required to take place 24/7. For example, tunnelling and underground excavations and supporting activities will be required 24/7;
- 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 Sydney Roads) for safety reasons;
 - o Where it is required to avoid the loss of lives, property and / or to prevent environmental harm in an emergency; and
 - o Where written agreement is reached with all affected receivers.

EPA approval will be sought to undertake works outside of normal working hours under the Environment Protection Licence.

GNVIS will be prepared for noise-intensive construction sites and/or activities, to ensure the adequacy of the noise and vibration mitigation measures. Specifically, GNVIS 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 EPL's and applications to relevant agencies).

The site layout has been designed with the consideration of minimising noise and vibration impacts (refer to preliminary ECM in **Appendix D**). However, where an exceedance of the noise management level is predicted to occur, the affected receiver/s would be notified prior to the noise generating works commencing. Community notifications would be undertaken in accordance with the CCS.

Where necessary, noise and vibration monitoring will be undertaken for construction as specified in the Sydney Metro Construction Noise and Vibration Standard SM-20-00098866 and would be identified in the GNVIS.

The Works would operate concurrently, 24 hours a day, seven days a week for the majority of the lifespan of the project.

3.2 TRAFFIC AND TRANSPORT MANAGEMENT

Prior to the use of a local road by a heavy vehicle related to the CTP, AFJV will prepare a Road Dilapidation Report. Dilapidation reports are to include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths.

To manage the traffic impacts due to construction and operation, AFJV will prepare a Construction Traffic Management Plan in accordance with the requirements of the Sydney Metro Construction Traffic Management Framework.

3.3 CONTAMINATED LAND

It is not expected that any contamination will be encountered on the site as a consequence of the previous contractor remediating the site as part of their work (see 1.3.3.). However, if potential contaminated soil or material is encountered during construction activities, the unexpected finds procedure will be followed.

Following material classification, the EM in consultation with specialists will determine the appropriate management measures to be implemented. This may include treatment or offsite disposal. If the material is to be disposed of offsite, licenses will be checked to ensure the waste facility is appropriately licensed. The EM will liaise with the client, Sydney Metro and keep them up to date on management options. Note that any water that has come into contact with the unexpected contamination find, must be also treated as contaminated, unless otherwise tested for all contaminants of concern and deemed to not be considered to be contaminated.

Where contaminated soils are to remain on-site, an appropriate OEMP would be prepared and implemented. The OEMP would include relevant ongoing management requirements developed in accordance with the NEPM (2013) and relevant guidelines made or approved by the NSW EPA. Measures may include but are not limited to, including procedures for excavation works, inspections and audits.

3.4 SOIL AND WATER

A progressive 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 ESCP's 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. The ESCPs will be approved by the AFJV 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 Engineer and Site Foreman. Any amendments to the ESCP will be approved by the AFJV Environmental Manager (or delegate).

Prior to discharge, wastewater would be treated to a level that is compliant with the ANZECC/ARMCANZ (2000) and ANZG (2018) default guidelines for 95 per cent species protection via the water discharge permit and hold point process (refer to Section 2.4.6).

3.5 FLORA AND FAUNA

The proposed site has been previously disturbed, and any unexpected fauna found on site will be managed using the Fauna Rescue Procedure.

Prior to construction, an exclusion zone has been established by a previous Contractor around Cumberland Plain Land Snails habitat in the environmental protection area (refer to Figure 1) (refer to Section 1.3.3). All personnel will be inducted to understand the exclusion zone, and this will be reinforced during pre-start meetings to limit the potential of trampling snails. Regular site inspections will be undertaken to ensure the exclusion zone is clearly demarcated using standard 'no-go' fencing as per the Fencing and Signage protocol, and this fencing remains in place.

Weed management will be undertaken in accordance with the Vegetation and Weed Management Procedure. Refer to Section 2.4.6 for a summary of all environmental procedures to be used during delivery and operation of the Works.

3.6 AIR QUALITY

The potential for dust generation during construction would be minimal given vegetation clearing and site establishment including bulk earthworks have been undertaken by a previous contractor. As such, the management of air quality impacts during construction will be managed using visual monitoring and escalation of issues identified for corrective action if required (refer to Section 2.9.2 and environmental inspection checklist in **Appendix G**).

The potential for dust impacts emitting beyond the boundary of the site associated with operation would be managed using visual observations undertaken by the Environment Coordinator and/ or the Site Supervisor when undertaking site inspections. All personnel would be inducted to understand the dust impacts and best practice dust management.

Internal roads and most of the proposal site would be sealed. The management of traffic and transport impacts are addressed in Section 3.2.

3.7 WASTE MINIMISATION AND MANAGEMENT

Waste will be assessed, classified, managed and disposed of in accordance with the Waste Classification Procedure. Waste tracking and disposal will be undertaken and managed in the project Waste Tracking Register. Information on waste will be provided to Sydney Metro as required for Sydney Metro to fulfil their WRAPP reporting requirements.

3.8 VISUAL AMENITY

In accordance with EMM LV1, LV2 and LV3, the Works will minimise visual impacts by:

- Locating elements within the site to minimise visual impacts – refer to indicative ECM in **Appendix D**
- Incorporating finishes within key elements of built structures that reflect the context within which they are in, if the built structures are visible from external areas, and
- Minimising light spill to adjacent receivers in accordance with the requirements of *Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting* and relevant Australian Standards in the series *AS/NZ 1158 – Lighting for Roads and Public Spaces*.

The construction hoardings would include signage including:

- Logos / branding, including Sydney Metro, NSW Government, and Contractor branding, and
- Community information, including contact numbers for enquiries / complaints.

3.9 HERITAGE MANAGEMENT

Unexpected heritage finds would be managed in accordance with the Sydney Metro Unexpected Finds Protocol provided in **Appendix F**.

3.10 FIRE SAFETY

The fire-fighting equipment, including fire extinguishers, will be provided on site and in vehicles to ensure the safety of public and property in compliance with the *Rural Fires Act 1997* and the *Local Government Act 1993*. Total fire ban declarations and resultant work restrictions will be communicated to staff during the daily pre-start meetings. During total fire bans, work prohibited by the ban can only proceed if a permit is issued by NSW Rural Fire Service and the work can be performed in accordance with the issued permit. All personnel involved in welding, grinding or other fire or spark producing operations will be trained in fire prevention, safety and basic fire-fighting skills.

3.11 SITE RESTORATION

AFJV are required to hand over the precast yard upon project completion. In doing so, AFJV will ensure that:

- a) All working areas and accesses are clean and clear.
- b) All construction plant, building and vehicles not to be handed over will be removed from site.
- c) Areas will be returned to a condition similar to its pre disturbance condition.

The reinstatement of any work areas that are required for a subsequent phase will be determined by Sydney Metro.

APPENDIX A ENVIRONMENT AND SUSTAINABILITY POLICY



ENVIRONMENT AND SUSTAINABILITY POLICY

The Acciona and Ferrovial Joint Venture (AFJV) is committed to integrating environmental and sustainability values from project design through to construction and production of assets that create an enduring, positive impact on society.

AFJV aims to generate a culture which promotes environmental protection, is energy and materials efficient, restorative in nature and acts as a good neighbour to the communities in which we work. AFJV will provide the resources and support to ensure these aims are achieved.

It is our Policy to:

- Conduct our operations in compliance with all relevant Acts, Regulations and Approval requirements
- Comply with the environment and sustainability requirements of the Design and Construction (D&C) Deed, the General and Particular Specifications in relation to design life, durability and maintainability
- Implement a management system compliant with ISO14001, with measurable objectives and targets, and seek to continually improve our performance
- Facilitate economic prosperity and development and provide a resilient local workforce
- Encourage the pioneering of innovation in sustainable design, process or advocacy that seeks continuous improvement to promote new ideas and thinking
- Ensure the application of sustainability-considerate procurement practices
- Engage with our suppliers and subcontractors to procure materials and use them responsibly
- We will work with our team and supply chain to increase awareness of sustainable development outcomes and manage continual improvement to leave a positive project legacy
- Openly communicate with employees, contractors, clients, key stakeholders and the community to optimise their involvement and positively influence environmental and sustainability outcomes
- Support and enhance social, cultural and community wellbeing
- Minimise or eliminate potential risks to, or impacts on our workforce, the community and transport network users from a sustainability perspective
- Educate and train our team to improve their environmental and sustainability awareness, skills and knowledge
- Monitor and audit our processes and activities and use the outcomes to enhance our environmental processes and performance
- Demonstrate leadership, embrace innovation and encourage teamwork.

This Policy will be made publicly available and periodically reviewed to ensure that it remains relevant and appropriate to the Project.

Grant Andersen
Project Director

Date



APPENDIX B COMPLIANCE TABLE - OTHER RELEVANT CEMF REQUIREMENTS AND EMMS

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Ref	Requirement	Where addressed
1.3	Sydney Metro has developed an Environment and Sustainability Policy (Appendix A) which applies to Sydney Metro projects. Principal Contractors are required to undertake their works in accordance with this policy. The policy reflects a commitment in the delivery of the project to: Optimise sustainability outcomes, transport service quality, and cost effectiveness. Develop effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity conservation. Be environmentally responsible, by avoiding pollution, enhancing the natural environment and reducing the project ecological footprint, while complying with all applicable environmental laws, regulations and statutory obligations. Be socially responsible by delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships.	Section 2.2 and Appendix A
2	The below table (Table 2) identifies key NSW environmental legislative requirements and their application to SM construction works, current as at the date of this document. Sydney Metro and its Contractors must regularly review their legislative and other requirements. Key Commonwealth environmental legislative requirements and their application to SM construction works are identified in Table 3, current as at the date of this document. Sydney Metro and its Contractors should regularly review their legislative requirements.	Section 2.4.2
2.1	All Sydney Metro projects require a planning approval under the <i>Environmental Planning and Assessment Act 1979</i>. For infrastructure components, this may take the form of: State significant infrastructure or critical State significant infrastructure under Part 5, Division 5.2 of the Act, with Department of Planning, Industry and Environment as the determining authority. An approval under Part 5 of the Act, with Sydney Metro as the determining authority. Exempt development under Section 1.6 of the Act and in accordance with a relevant State Environmental Planning Policy.	Section 1.1 and Section 2.4.2

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	For development components, this may take the form of: State significant development under Part 4, Division 4.7 of the Act. A local development application under Part 4 of the Act. The requirements of the relevant approval are required to be complied with by Sydney Metro. Responsibility for implementing mitigation measures and conditions of approval will be allocated between Sydney Metro and Principal Contractors as appropriate. Typically where there are multiple packages of works, Sydney Metro will produce a Staging Report which sets out the applicability and allocation of approval requirements within the project's program of works.	
2.2	Sydney Metro projects can meet the definition of a number of scheduled activities under Schedule 1 of the Protection of the Environment Operation Act 1997 (POEO Act). Contractors need to review the applicability of Scheduled Activities and assess the need to obtain an Environment Protection Licence (EPL). In other circumstances work may be undertaken using the existing EPL held by Sydney Trains. Where required, Sydney Metro Principal Contractors will: Apply for and be granted an EPL from the EPA. Hold an EPL which covers their scope of works as necessary under the POEO Act. Undertake their scope of works in accordance with the conditions of the applicable EPLs as issued by the EPA. Work under the existing Sydney Trains EPL.	Section 2.4.2
2.3	Numerous environmental publications, standards, codes of practice and guidelines are relevant to Sydney Metro construction and are referenced throughout this Construction Environmental Management Framework. A summary of key applicable standards and guidelines is provided in Table 4.	Section 2.1 and Section 2.4.6
3.1a	Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2015.	Section 1.2
3.1b	Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will: i. Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2015; ii. Be supported by a process for identifying and responding to changing legislative or other requirements; 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;	Section 2.1 and Section 2.4.1.1

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	v. Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and vi. Be consistent with the SM C&SW Sustainability Strategy and Sydney Metro Environment and Sustainability Policy.	
3.1c	All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's Environment and Sustainability Management System.	Section 2.5.1
3.1d	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.	Noted
3.2	Sustainability Management Plan	Refer to Sustainability Management Plan
3.3	Construction Workforce Development and Industry Participation Plan	Refer to Workforce Development and Industry Participation Plan
3.6a	The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should supplement environmental management sub plans, but may substitute for sub plans in agreement with Sydney Metro if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.	Section 2.4.6 and Section 2.4.6
3.6b	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.	Section 2.4.6
3.6c	The Principal Contractor will prepare and implement site based progressive Environmental Control Maps (ECM's) which as a minimum: i. Depicts the current representation of the site; 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	Section 2.4.4 and Appendix D

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	vii. Be communicated to relevant workers, including sign-off for the appropriate procedures prior to commencing works on the specific site and / or activity.	
3.7a	Where the requirement for an additional environmental assessment is identified, this will be undertaken prior to undertaking any construction activities. The environmental assessment will include: i. A description of the existing surrounding environment; ii. Details of the ancillary works and construction activities required to be carried out including the hours of works; iii. An assessment of the environmental impacts of the works, including, but not necessarily limited to, traffic, noise and vibration, air quality, soil and water, ecology and heritage; iv. Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts; and v. Identification of the timing for completion of the construction works, and how the sites would be reinstated (including any necessary rehabilitation).	Section 1.4
3.8b	Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles. Dilapidation reports are to include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths.	Section 3.2
3.9a	Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. These hold points will be documented in the CEMP or relevant sub-plans. Example activities include vegetation removal and water discharge.	Section 2.1.2 and Section 2.4.6
3.9b	Table 6 provides the structure for these hold points to be included in the CEMP as well as an initial list of hold points which will be implemented.	Section 2.1.2 and Section 2.4.6
3.10a	Principal Contractors are responsible for determining the training needs of their personnel. As a minimum this will include site induction, regular toolbox talks and topic specific environmental training as follows: i. The site induction will be provided to all site personnel and will include, as a minimum: - Training purpose, objectives and key issues, - Contractor's environmental and sustainability policy(s) and key performance indicators, - Due diligence, duty of care and responsibilities, - Relevant conditions of any environmental licence and/or relevant conditions of approval, - site specific issues and controls including those described in the environmental procedures, - Reporting procedure(s) for environmental hazards and incidents, and	Section 2.6 <i>Note: 3.10a(iii) is not applicable to this Plan.</i>

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	Communication and protocols for interactions with community and stakeholders ii. Toolbox talks will be held on a regular basis in order to provide a project or site wide update, including any key or recurring environmental issues; and iii. Topic specific environmental training should be based upon, but is not limited to, Issue specific sub-plans required under Section 3.5 (a) (i-xi).	
3.11a	Principal Contractors undertaking work in accordance with an EPL must develop and implement a Pollution Incident Response Management Plan, in accordance with the requirements of the POEO Act. Contractors' emergency and incident response procedures will also be consistent with any relevant Sydney Metro procedures and will include: i. Categories for environmental emergencies and incidents; ii. Notification protocols for each category of environmental emergency or incident, including notification to Sydney Metro and notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details; 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 or DPIE that are made by the Contractor or Sydney Metro.	Section 2.8
3.11b	The Contractor will make all personnel aware of the plan and their responsibilities.	Section 2.6.1
3.13a	In relation to Roles and Responsibilities the CEMP will: i. Describe the relationship between the Principal Contractor, Sydney Metro, key regulatory stakeholders, the independent environmental representative and the independent certifier; 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	Section 2.5 <i>Note: The role of an independent environmental representative and independent certifier in 3.13a(i) and (iv) is not applicable to this Plan.</i>

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	iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders.	
3.13b	All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.	Section 2.5.1
3.14a	Issue specific environmental monitoring will be undertaken as required or as additionally required by any approval, permit or licence conditions.	Section 2.9.1
3.14b	The results of any monitoring undertaken as a requirement of a licence or permit that is required to be published will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.	To be confirmed upon grant of EPL
3.14c	Environmental inspections will include: i. Surveillance of environmental mitigation measures by the Site Foreman; and ii. Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record.	Section 2.9.2
3.14e	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 2.9.2
3.15a	Principal Contractors will document and detail any non-compliances with the requirements of any legislative or other requirements. Sydney Metro will be made aware of all non-compliances in a timely manner.	Section 2.8
3.15b	Principal Contractors will develop and implement corrective actions to rectify the non-compliances in order to prevent a re-occurrence of the non-compliance. Contractors will also maintain a register of non-compliances and associated corrective actions.	Section 2.8 and Section 2.9.4
3.15c	Sydney Metro or the Environmental Representative may raise non-compliances against environmental requirements. In these circumstances the Principal Contractor must abide by any requirements of Sydney Metro's procedure for managing non-compliances.	Section 2.8
3.16a	Principal Contractors will maintain appropriate records of the following: i. Site inspections, audits, monitoring, reviews or remedial actions; ii. Documentation as required by performance conditions, approvals, licences and legislation; iii. Modifications to site environmental documentation (eg CEMP, sub-plans and procedures); and	Section 2.9.7

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	iv. Other records as required by this Construction Environmental Management Framework.	
3.16b	Records must be accessible onsite for the duration of works.	Section 2.9.5
3.16c	Additionally, records will be retained by the Principal Contractor for a period of no less than 7 years. Records will be made available in a timely manner to Sydney Metro (or their representative) upon request.	Section 2.9.5
3.16d	Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.14) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to Sydney Metro at an agreed frequency.	Section 2.9
3.17a	Principal Contractors will ensure the continual review and improvement of the management systems. This will generally occur in response to: i. Issues raised during environmental surveillance and monitoring; ii. Expanded scope of works; iii. Environmental incidents; and iv. Environmental non-conformances.	Section 2.9.6 and Section 2.9.7
3.17b	A formal review of the management systems by the Principal Contractor's Senior Management Team will also occur on an annual basis, as a minimum. This review shall generate actions for the continual improvement of the systems and supporting management plans.	Section 2.9.7
4.1a	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.	Community Communications Strategy
4.1b	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.	Community Communications Strategy
4.2a	A Community Communication Strategy will be developed by each Sydney Metro Principal Contractor.	Community Communications Strategy
4.2b	Key elements of the Community Communication Strategy, which will be implemented at appropriate times in the construction process, will include:	Community Communications Strategy

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	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 (sydneymetro.info), including uploading of all relevant documents, and contact details for the stakeholder and community relations team; ix. Provision of information for Sydney Metro Community virtual or in person displays 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 feedback; 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.	
4.3a	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.	Community Communications Strategy
4.4a	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;	Section 3.8

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	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 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 hoarding artwork, including: Sydney Metro advertising / public awareness campaigns; and Logos / branding, including Sydney Metro, NSW Government, and Contractor branding.	
4.4b	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.	Section 2.9.2
5.1a	Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.	Section 3.1
5.1b	Works which can be undertaken outside of standard construction hours without any further approval include: i. Those which have been described in respective environmental assessments as being required to take place 24/7. For example, tunnelling and underground excavations and supporting activities will be required 24/7; ii. Works which are determined to comply with the relevant Noise Management Level at sensitive receivers; iii. The delivery of materials outside of approved hours as required by the Police or other authorities (including Sydney Roads) for safety reasons; iv. Where it is required to avoid the loss of lives, property and / or to prevent environmental harm in an emergency; and v. Where written agreement is reached with all affected receivers.	
5.1c	Principal Contractors may apply for EPA approval to undertake works outside of normal working hours under their respective Environment Protection Licences.	Section 3.1
5.2a	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	Section 3.2

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	documentation. Requirements in the CTMF must be followed by Principal Contractors.	
5.2b	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.	Section 3.2
5.3a	Principal Contractors will consider the following in the layout of construction sites: i. The location of noise intensive works and 24 hour activities in relation to noise sensitive receivers; ii. The location of site access and egress points in relation to noise and light sensitive receivers, especially for sites proposed to be utilised 24 hours per day; iii. The use of site buildings to shield noisy activities from receivers; iv. The use of noise barriers and / or acoustic sheds where feasible and reasonable for sites proposed to be regularly used outside of daytime hours; v. Aim to minimise the requirement for reversing, especially of heavy vehicles; and vi. Any applicable requirements of the Construction Traffic Management Framework (CTMF).	Section 3.1 and Appendix D
5.4a	Mitigation measures required for reinstatement will be incorporated into the CEMP and will include as a minimum: i. Principal Contractors will clear and clean all working areas and accesses at project completion; ii. At the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site; iii. All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better; and iv. Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction.	Section 3.11
6.1a	The following spoil management objectives will apply to the construction of the project: i. Minimise spoil generation where possible; ii. The project will mandate 100% reuse or recycling (on or off-site) of usable spoil; iii. Spoil will be managed with consideration to minimising adverse traffic and transport related issues; iv. Spoil will be managed to avoid contamination of land or water; v. Spoil will be managed with consideration of the impacts on residents and other sensitive receivers; and	Section 2.3

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	vi. Site contamination will be effectively managed to limit the potential risk to human health and the environment.	
7.1a	The following groundwater management objectives will apply to construction: i. Reduce the potential for drawdown of surrounding groundwater resources; ii. Prevent the pollution of groundwater through appropriate controls; and iii. Reduce the potential impacts of groundwater dependent ecosystems	Section 2.3
8.1a	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; and iv. Maintain positive, cooperative relationships with schools, childcare centres, local residents and building owners.	Section 2.3
8.2b	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 EPL's and applications to relevant agencies).	Section 2.4.6 and Section 3.1
8.2c	Noise and vibration monitoring would be undertaken for construction as specified in the CNVS.	Section 2.9.1 and Section 3.1
8.2d	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 2.9.5
9.1a	The following heritage management objectives will apply to construction: i. Consider heritage values in any architectural design, education or physical interpretation; ii. Minimise impacts on items or places of heritage value; iii. Avoid accidental impacts on heritage items; and iv. Maximise worker's awareness of Aboriginal and Non-Aboriginal heritage.	Section 2.3 <i>Note: 9.1a(i) is not applicable to the this Plan</i>
10.1a	The following flora and fauna management objectives will apply to construction: i. Minimise impacts on flora and fauna;	Section 2.3

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	ii. Design waterway modifications and crossings to incorporate best practice principles; iii. Retain and enhance existing flora and fauna habitat wherever possible; and iv. Appropriately manage the spread of weeds and plant pathogens.	<i>Note: 10.1a(ii) is not applicable to this Plan</i>
10.2c	The Principal Contractor's regular inspections will include a check on the ecological mitigation measures and project boundary fencing.	Section 2.9.2
10.2d	The following compliance records would be kept by the Principal Contractor: 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.	Section 2.9.2 and 2.9.5 <i>Note: 10.2d(i) and (ii) is not applicable to this Plan.</i>
11.1a	The following visual and landscape management objectives will apply to the construction of the project: i. Minimise impacts on existing landscape features as far as feasible and reasonable; ii. Ensure the successful implementation of the Landscape Design; and iii. Reduce visual impact of construction to surrounding community.	Section 2.3 <i>Note: 11.1a(ii) is not applicable to this Plan</i>
12.1a	The following soil and water management objectives will apply to construction: 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; and iv. Source construction water from non-potable sources, where feasible and reasonable	Section 2.3
12.2b	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.	Section 2.4.5 and Section 2.4.6
12.2c	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).	Section 2.4.5 and Section 2.4.6
12.2e	Principal Contractors will undertake the following soil and water monitoring as a minimum:	Section 2.4.6 and Section 2.9.2

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	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 relevant approvals and licence requirements. 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.	
12.2f	The following compliance records will be kept by the Principal Contractors: 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.	Section 2.9.5
12.2g	The following water resources management objectives will apply to the construction of the project: 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: 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 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.	Refer to Sustainability Management Plan
13.1a	The following air quality management objectives will apply to construction: i. Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and	Section 2.3

Construction Environmental Management Framework		
	ii. Identify and control potential dust and air pollutant sources.	
14.1a	The following waste objectives will apply to construction: i. Minimise waste throughout the project life-cycle; and ii. Waste management strategies will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: ▪ Avoidance of unnecessary resource consumption; ▪ Resource recovery (including reuse, reprocessing, recycling and energy recovery); and Disposal.	Section 2.3
14.2b	Principal Contractors will undertake the following waste monitoring 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.	Section 2.9.2
14.2d	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 2.9.5
14.2c	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 3.7 and Sustainability Management Plan
Environmental Management Measures (REF Determination Report)		
NV1	During construction, receivers that would potentially be affected by noise and/or vibration from the works would be appropriately notified before the relevant works start.	Section 3.1
NV2	Noise monitoring at the most affected receiver(s) would be undertaken at the start of construction works to check the levels are as predicted and to confirm that the standard mitigation measures are adequate, further mitigation measures would be considered and implemented where feasible and reasonable.	Section 2.9.1
T1	In the event of a traffic-related incident, coordination would be carried out with Transport Coordination and/or other parts of Transport for NSW.	Section 3.2
T2	Access to properties for emergency vehicles would be provided at all times.	Section 3.2
T3	All trucks would enter and exit the proposal site in a forward direction, where feasible and reasonable.	Section 3.2
T4	All staff parking would be provided on-site and not on surrounding local streets.	Section 3.2
T5	The driver induction process would include safety awareness in relation to all road users, particularly pedestrians and cyclists at the proposal site access point at Archbold Road/Lenore Drive during construction.	Section 3.2

Construction Environmental Management Framework		
LV1	Where feasible and reasonable, the elements within the construction site would be located to minimise visual impacts (for example storing materials and machinery behind fencing).	Section 3.8
LV2	Sheds would be finished in a colour which aims to minimise visual impacts, if visible from areas external to the site.	Section 3.8
LV3	Lighting of the sites would be orientated to minimise glare and light spill impacts on adjacent receivers in accordance with AS4282:2019.	Section 3.8
SW2	Erosion and sediment measures would be implemented in accordance with the principles and requirements in Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004) and Volume 2D (NSW DECCW, 2008), commonly referred to as the 'Blue Book'. Additionally, any water collected from the proposal site would be appropriately treated and discharged to avoid any potential contamination or local stormwater impacts. Temporary sediment basins would be designed in accordance with Managing Urban Stormwater: Soils and Construction and Managing Urban Stormwater, Volume 2D: Main Road Construction (DECC, 2008).	Section 2.4.5
SW3	Prior to discharge, wastewater would be treated to a level that is compliant with the ANZECC/ARMCANZ (2000) and ANZG (2018) default guidelines for 95 per cent species protection. For the purposes of this management measure, during operation wastewater is defined as process water from operation of the precast facility and does not include surface runoff or stormwater.	Section 2.4.6 and Section 3.4
C1	For areas that have been identified as having moderate contamination impact potential, a further review of data would be performed. Should the additional data review confirm that contamination is likely to have a very low or low impact potential, the areas would then be managed in accordance with the Soil and Water Management Plan for the proposal. 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.	Section 1.3.3 Note this requirement is not applicable to this Plan
C2	Where data from the additional data review (mitigation measure C1) is insufficient to understand the impact of contamination, a Detailed Site Investigation would be carried out in accordance with the NEPM (2013) and other guidelines made or endorsed by the NSW EPA. The areas requiring Detailed Site Investigation would be confirmed following the additional data review (C1), however on the basis of the PSCI, it is anticipated that a Detailed Site Investigation would be required to characterise fill materials, and sediment from dam /	Section 1.3.3 Note this requirement is not applicable to this Plan

Construction Environmental Management Framework

	retention pond for on-site reuse and/or off-site disposal. Fly tipped wastes and deposited wastes (from former land use) would need to be characterised for off-site disposal.	
C3	Where data from additional data review (mitigation measure C1) or the Detailed Site Investigation (mitigation measure C2) confirms that contamination would have a moderate to very high risk, a Remedial Action Plan (RAP) would be developed for the area of the construction footprint. The RAP would detail the remediation works required to mitigate impacts from contamination throughout and following completion of construction. The RAP would be prepared in accordance with relevant NSW EPA guidelines and where applicable, detail remediation methodologies 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. The requirements for a RAP and remediation would be confirmed following the additional data review (mitigation measure C1) and Detailed Site Investigation (mitigation measure C2).	Section 1.3.3 Note this requirement is not applicable to this Plan
C4	Where contamination is highly complex, such as significant groundwater contamination; contamination associated with vapour; contamination that requires specialised remediation techniques; or contamination that requires ongoing active management during and beyond construction, an accredited Site Auditor would review and approve the RAP and would develop a Site Audit Statement and Site Audit Report upon completion of remediation. The requirement for a Site Audit Statement would be confirmed following preparation of the RAP (mitigation measure C3).	Section 1.3.3 Note this requirement is not applicable to this Plan
C5	Ongoing management and monitoring measures would be documented in an appropriate form and implemented for any areas where minor, residual contamination remains following construction.	Section 3.3
C6	The operational environmental management plan (OEMP) for the proposal would include an Emergency Response Plan (or equivalent) which would specify the procedure to be followed in the event of a spill, including the notification requirements and use of absorbent material to contain the spill.	Section 3.3
C7	Where contaminated soils are to remain on-site, an appropriate OEMP would be prepared and implemented. The OEMP would include relevant ongoing management requirements developed in accordance with the NEPM (2013) and relevant guidelines made or approved by the NSW EPA. Measures may include but are not limited to, including procedures for excavation works, inspections and audits.	Section 3.3

Construction Environmental Management Framework		
C8	Potential impacts from existing groundwater contamination (if present) during operation of the proposal would be managed through management and mitigation measures such as: ▪ Emplacement of appropriate topographic / drainage controls to minimise seepage and ponding of water across the site Drainage from sealed areas would be directed to stormwater drains (e.g. pipes, swales) via gross pollutant traps and sediment basins (if necessary) to mitigate potential impacts from sediments or wastes on receiving environments.	Section 1.3.3
B1	Prior to construction, the limits of the work zone, areas for parking and turning of vehicles and plant equipment would be clearly and accurately marked out. These areas would be located so that vegetation disturbance is minimised as much as possible and the drip-line of trees avoided.	Appendix D
B2	Prior to construction, exclusion zones would be identified and established around all vegetation to be retained, such as the environmental protection area in the west of the proposal site. Periodic monitoring would be undertaken to ensure all controls are in place and no inadvertent impacts are occurring.	Section 2.4.6 and Section 2.9.2
B3	Materials, plant, equipment, work vehicles and stockpiles would be placed to avoid damage to surrounding vegetation and outside tree driplines.	Section 2.9.2 and Appendix D
B4	Prior to construction, personnel would be informed of the environmentally sensitive aspects of the proposal site, including plans for impacted and adjoining areas showing vegetation communities, important flora and fauna habitat areas, and locations where threatened species, populations or ecological communities have been recorded. Construction personnel would be made aware that any native fauna species encountered must be allowed to safely leave the proposal site where possible and a local wildlife rescue organisation or appropriately experienced ecologist must be called for assistance where necessary.	Section 2.6
B7	Prior to construction, exclusion zones would be established around Cumberland Plain Land Snails habitat in the environmental protection area. All personnel would be inducted to understand the exclusion zone to limit the potential of trampling snails	Section 2.4.6 and Section 3.5
B11	Weed control would be undertaken by suitably qualified and/or experienced personnel. This may include: • Manual weed removal in preference to herbicides • Replacing non-target species removed/killed as a result of weed control activities • Protecting non-target species from spray drift	Section 2.4.6 and Section 3.5

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	- Using only herbicides registered for use within or near waterways for the specific target weed - Applying herbicides during drier times when the waterway level is below the high-water mark - Not applying herbicide if it is raining or if rain is expected - Mixing and loading herbicides, and cleaning equipment away from waterways and drains.	
B12	During construction, weed management would be undertaken in areas affected by construction prior to any clearing works in accordance with the <i>Biosecurity Act 2015</i> to ensure they are not spread to the surrounding environment; including during transport disposal off-site to a licenced waste disposal facility.	Section 2.4.6 and Section 3.5
B13	All weeds, propagules, other plant parts and/or excavated topsoil material that is likely to be infested with weed propagules that are likely to regenerate would be treated on site or bagged, removed from site and disposed of at a licensed waste disposal facility.	Section 2.4.6, Section 3.5 and Section 3.7
B14	During construction, all vehicles driving to and from the proposal site would follow a protocol to prevent the spread or introduction of phytophthora, namely vehicles would be clean, including the tyres and any equipment.	Section 2.4.6 and Section 3.5
WR1	All waste would be assessed, classified, managed, transported and disposed of in accordance with the Waste Classification Guidelines and the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> .	Section 2.4.6 and Section 3.7
WR2	Waste would be minimised by accurately calculating materials brought to the proposal site and limiting materials packaging.	Section 2.4.6, Section 3.7 and refer to Sustainability Management Plan
WR3	100 per cent of usable spoil from construction would be reused, in accordance with the Sydney Metro spoil management hierarchy.	Section 2.4.6, Section 3.7 and refer to Sustainability Management Plan
WR4	Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities.	Section 2.4.6 and Section 3.7
WR5	A materials tracking system would be implemented for material transferred to offsite locations such as licensed waste management facilities.	Section 2.4.6, Section 3.7 and Section 2.9.5
WR6	At least 95 per cent of inert and non-hazardous construction waste, excluding spoil, and at least 50 per cent of office waste would be recycled or alternatively beneficially reused.	Section 2.4.6, Section 3.7 and refer to Sustainability Management Plan
AQ1	The following best-practice dust management measures would be implemented during construction works: Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather	Section 2.9.2 and Section 3.6

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	- Adjust the intensity of activities based on measures and observed dust levels and weather forecasts - Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers - Regularly inspect dust emissions and apply additional controls as required.	
AQ2	The following best-practice dust management measures would be implemented during operation: - Ensure that loads are covered and that haulage vehicles are cleaned to remove any loose debris before leaving the site - Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather - Position long-term stockpiles away from surrounding receivers - Regularly inspect and where necessary clean sealed haulage roads to remove tracked materials.	Section 2.9.2 and Section 3.6
AQ3	Plant and equipment would be maintained in a proper and efficient manner. Visual inspections of emissions from plant would be carried out as part of pre-acceptance checks.	Section 2.9.2
BF1	The proposal site would be managed as an Asset Protection Zone (APZ). The entire proposal site would be managed as an APZ as outlined within Appendix 4 of 'Planning for Bush Fire Protection 2019' and the NSW Rural Fire Service's document 'Standards for asset protection zones'. The APZ would not extend into the environmental protection area in the south-west of the site.	N/A – Southern portion of this site is not assessed as bushfire prone land.
BF2	Vulnerable buildings and/or critical assets would be constructed to appropriate BAL in accordance with the Australian Standard for the Construction of Buildings in Bushfire Prone Areas (AS3959).	N/A – Southern portion of this site is not assessed as bushfire prone land.
BF3	The following measures would be implemented for access roads within the proposal site: - Access roads would be two-wheel drive, all-weather roads - Minimum 5.5 metre carriageway width kerb to kerb - Maximum grades for sealed roads would not exceed 15 degrees and an average grade of not more than 10 degrees, or other gradient specified by road design standards, whichever is the lesser gradient - Curves of roads would have a minimum inner radius of 6 metres - Dead end roads would incorporate a minimum 12 metre outer radius turning circle, and would be clearly sign posted as a dead end	N/A – Southern portion of this site is not assessed as bushfire prone land.

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	A minimum vertical clearance of 4 metres would be provided to any overhanging obstructions, including tree branches.	
BF4	The following water supply and utilities would be installed during construction and maintained during operation of the proposal: ▪ A minimum static water supply of 20,000 litres for firefighting purposes. The firefighting water can be available in a single tank or a number of tanks around the proposal site ▪ A hardened ground surface for truck access up to and within 4 metres of the water source ▪ A 65 millimetre metal Storz outlet with a gate or ball valve would be provided as an outlet on each of the tanks ▪ If the water tank is located above ground it would be of a non-combustible material ▪ If the water tank is located underground, it would have an access hole of 200 millimetres to allow tankers to refill direct from the tank. All associated fittings to the tank would be non-combustible.	N/A – Southern portion of this site is not assessed as bushfire prone land.
BF5	Bushfire Emergency Management and Evacuation Plans would be developed for the construction and operation of the proposal. The bushfire evacuation procedures would be completed in accordance with NSW Rural Fire Service Guide to Developing A Bushfire Emergency Management Plan and meet the requirements of Australian Standard AS 3745-2010 – Planning for Emergencies in facilities.	Project Emergency Response Plan
BF6	Activities that generate sparks or excessive heat would be minimised when a total fire ban is declared by Rural Fire Service.	Section 3.10
SCC1	Sustainability initiatives would be incorporated into the detailed design and construction to support the achievement of the Sydney Metro West sustainability objectives.	Sustainability Management Plan
SCC2	Best practice level of performance would be achieved using market leading sustainability rating tools during construction and operation.	Refer to Sustainability Management Plan
SCC3	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction and operation of the proposal would be offset.	Sustainability Management Plan
SCC4	An iterative process of greenhouse gas assessments and design refinements would be carried out during detailed design and construction to identify opportunities to minimise greenhouse gas emissions. Performance would be measured in terms of a percentage reduction in greenhouse gas emissions from a baseline inventory calculated at the detailed design stage.	Sustainability Management Plan

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SCC5	Climate change risk treatments would be confirmed and incorporated into the detailed design.	Sustainability Management Plan
CI1	Co-ordination and consultation with the following stakeholders would occur where required to manage the interface of projects under construction at the same time: ▪ Other parts of Transport for NSW ▪ Department of Planning, Industry and Environment ▪ Utility providers ▪ Construction contractors. Co-ordination and consultation with these stakeholders would include: ▪ Provision of regular updates to the detailed construction program, construction sites and haul routes ▪ Identification of key potential conflict points with other construction projects ▪ Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve: - Adjustments to the Sydney Metro construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects - Co-ordination of traffic management arrangements between projects.	Refer to Community Communications Plan

APPENDIX C ASPECTS AND IMPACTS REGISTER/ENVIRONMENTAL RISK REGISTER



Notes for use (add information as required)

This risk assessment is not intended to replicate all project requirements (EMMs), legislation or contract requirements.

This risk assessment is used to identify any non-standard / additional Project specific mitigations not already required under the Project requirements

All risks with a residual risk ranking of 'High' or greater is required to have an Environmental Works Method Statement prepared to address residual risks - unless another suitable format / process exist

Scope of this risk assessment is to address key risks during the construction and operation of the Eastern Creek Precast Facility to the extent required by AFJV.

Ft  1/09/20						Project Name : Sydney Metro West - Central Tunnelling Package				Project Manager:	Grant Anderson		Revision Number: Rev00	Date of Issue: 11/08/21			
Risk Assessment Date: 6/08/21 Revision Number: Rev00 Date of Issue: 11/08/21						Initial Risk / Impact Assessment (Prior to any controls are in place)		Existing / Implemented Controls				Residual Risk / Impact Assessment (Risk/Impact Assessed after all possible controls are in place, if assessed impact is still present as per the hierarchy of controls, this		Justification for Residual Risk Level			
Activity		Hazard Description Environmental Aspect (Hazard Aspect)		Risk Identified Impact / Potential Impact Identified (Unwanted Event)		Likelihood	Consequence	Initial Risk / Impact	Risk / Impact Control Measures. (not intended to be a detailed replication of all Project requirements (e.g. REMMs and CoAs))		Monitoring of Controls		Likelihood2	Consequence2	Residual Risk	Justification for Residual Risk (required for 'High' or above)	
Civils Construction Activities		Legal / Compliance		Access prior to approvals		Possible	Moderate	High 13	- All personnel entering site must be inducted - Site access arrangements made and communicated prior to entering site. - Boundary fencing and signage - Environmental Approvals Manger		Site security set up, supervisors checking induction status of workers.		Unlikely	Moderate	Medium 9		
Civils Construction Activities		Legal / Compliance		Entering sensitive areas post-approval		Possible	Moderate	High 13	- All personnel entering site must be inducted, including regarding ECMs. - Site specific toolbox talks - Delineation of sensitive areas and on site signage.		Preparation of ECMs to show approved site boundaries		Unlikely	Moderate	Medium 9		
Civils Construction Activities		Legal / Compliance		Breach of PA or EPL conditions, legal or client requirements leading to PINs, fines, prosecution, loss of reputation, strained relationships, contractual implications		Possible	Major	Extreme 18	- Development and implementation of CEMP and procedures, training of staff, monitoring, inspection and audit schedules, project induction.		CEMP audits, regular inspections, internal and external audits		Unlikely	Moderate	Medium 9		
Civils Construction Activities		Air quality		Generation of dust during site establishment, general earthworks, leading to amenity and/or community nuisance		Likely	Moderate	High 17	- The following best-practice dust management measures would be implemented during construction works: a) Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather b) Adjust the intensity of activities based on measures and observed dust levels and weather forecasts c) Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers d) Regularly inspect dust emissions and apply additional controls as required. (EMM AQ1) - The following best-practice dust management measures would be implemented during operation: a) Ensure that loads are covered and that haulage vehicles are cleaned to remove any loose debris before leaving the site b) Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather c) Position long-term stockpiles away from surrounding receivers d) Regularly inspect and where necessary clean sealed haulage roads to remove tracked materials. (EMM AQ2) - Plant and equipment would be maintained in a proper and efficient manner. Visual inspections of emissions from plant		Regular site inspections, controls implemented as per ESCP, air quality monitoring.		Possible	Minor	Medium 8		
Civils Construction Activities		Flora and Fauna		Clearing outside an approved area, unnecessary clearing within approved area (no clearing is anticipated for the works)		Possible	Moderate	High 13	- Prior to construction, the limits of the work zone, areas for parking and turning of vehicles and plant equipment would be clearly and accurately marked out. These areas would be located so that vegetation disturbance is minimised as much as possible and the drip-line of trees avoided. (EMM B1) - Prior to construction, exclusion zones would be identified and established around all vegetation to be retained, such as the environmental protection area in the west of the proposal site. Periodic monitoring would be undertaken to ensure all controls are in place and no inadvertent impacts are occurring. (EMM B2) - Materials, plant, equipment, work vehicles and stockpiles would be placed to avoid damage to surrounding vegetation and outside tree driplines. (EMM B3) - Prior to construction, personnel would be informed of the environmentally sensitive aspects of the proposal site, including plans for impacted and adjoining areas showing vegetation communities, important flora and fauna habitat areas, and locations where threatened species, populations or ecological communities have been recorded. Construction personnel would be made aware that any native fauna species encountered must be allowed to safely leave the proposal site		Pre-clearance checklist, site inspections		Unlikely	Moderate	Medium 9		

Civils Construction Activities	Flora and Fauna	Spreading of noxious weeds via personnel, plant / equipment, topsoil / mulch	Possible	Minor	Medium 8	- Weed control would be undertaken by suitably qualified and/or experienced personnel. This may include: a) Manual weed removal in preference to herbicides b) Replacing non-target species removed/killed as a result of weed control activities c) Protecting non-target species from spray drift d) Using only herbicides registered for use within or near waterways for the specific target weed e) Applying herbicides during drier times when the waterway level is below the high-water mark f) Not applying herbicide if it is raining or if rain is expected g) Mixing and loading herbicides, and cleaning equipment away from waterways and drains. (EMM B11) - During construction, weed management would be undertaken in areas affected by construction prior to any clearing works in accordance with the Biosecurity Act 2015 to ensure they are not spread to the surrounding environment; including during transport disposal off-site to a licenced waste disposal facility. (EMM B12) - All weeds, propagules, other plant parts and/or excavated topsoil material that is likely to be infested with weed propagules that are likely to regenerate would be treated on	Pre-clearance checklist, site inspections	Unlikely	Minor	Low 5	
Civils Construction Activities	Heritage	Damage to a heritage item	Likely	Major	Extreme 21	- In the event that suspected Aboriginal ancestral remains are exposed during construction, the requirements of Section 3.6 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) would be implemented. (EMM AH5) - An Unexpected Finds Procedure, to be implemented in the event that potential non-Aboriginal heritage objects are exposed during construction, would be prepared that complies with the Heritage Act 1977 (EMM NAH1)	Development of sensitive area plans, heritage supervision	Possible	Minor	Medium 8	Construction site located in sensitive heritage location, this is the approved project design. Undertaking works in accordance with COAs allows work to proceed in this location. EWMS proposed.
Civils Construction Activities	Noise and vibration	Noise and vibration impacts on sensitive receivers, there may be oversized deliveries out of hours from time to time (OOHWP)	Likely	Moderate	High 17	- Safe working distances - Design of ancillary facilities and compound away from sensitive receivers. - During construction, receivers that would potentially be affected by noise and/or vibration from the works would be appropriately notified before the relevant works start (EMM NV1) - Noise monitoring at the most affected receiver(s) would be undertaken at the start of construction works to check the levels are as predicted and to confirm that the standard mitigation measures are adequate, further mitigation measures would be considered and implemented where feasible and reasonable (EMM NV2)	Noise predictions and monitoring	Possible	Moderate	High 13	Impacts of noise and vibration are likely to be felt by the receivers surrounding the construction sites. This is possible even in the case that all noise and vibration criteria are achieved, and as such it not considered possible to completely eliminate. As such, the Project will use the control measures described and the risk categories provided in the DNVIS and OOHWP Protocol to ensure noise and vibration criteria are achieved, in compliance with the Project Approval. No EWMS is proposed.
Civils Construction Activities	Soil and water	Tracking of mud at ancillary facilities access points	Likely	Moderate	High 17	Stabilised access / egress points. Cleaning down of hardstand areas, design review of site layout, early installation of wheel wash where appropriate, street sweepers available, ERSERD controls in place	Regular site inspections, including with soil conservationist, controls implemented as per ESCP, gate surveillance	Possible	Minor	Medium 8	
Civils Construction Activities	Soil and water	Serious incidents, e.g. uncontrolled release of concrete washout water, sedimentation impacting waterways, major fuel spill, that cause or threaten material harm to the environment	Possible	Major	Extreme 18	- Concrete washout areas will be adequately sized, regularly maintained, and located in designated covered areas. - The use of any hazardous substance that could result in a spill will be undertaken away from drainage or stormwater lines and, wherever possible, within defined bunds - Any refuelling undertaken on site shall be undertaken in designated areas only, outside of riparian areas and well away from stormwater system inlets - Spill kits will be placed at locations where there is direct discharge of stormwater to receiving waterways - Erosion and Sediment Control Plans (ESCPs) will be prepared for all work and implemented in advance of site disturbance. - Erosion and sediment measures would be implemented in accordance with the principles and requirements in Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004) and Volume 2D (NSW DECCW, 2008), commonly referred to as the 'Blue Book'. Additionally, any water collected from the proposal site would be appropriately treated and discharged to avoid any potential contamination or local stormwater impacts. - Temporary sediment basins would be designed in accordance with Managing Urban Stormwater: Soils and Construction and	Regular site inspections, ECM, ESCP,	Rare	Major	High 10	Use of ESCP as a risk assessment and risk control process through all phases of site establishment. No EWMS is proposed.
Civils Construction Activities	Soil and water	Discharge of water that does not meet discharge criteria	Likely	Moderate	High 17	- Prior to discharge, wastewater would be treated to a level that is compliant with the ANZECC/ARMCANZ (2000) and ANZG (2018) default guidelines for 95 per cent species protection. For the purposes of this management measure, during operation wastewater is defined as process water from operation of the precast facility and does not include surface runoff or stormwater. (EMM SW3)	Dewatering and discharge permits.	Unlikely	Moderate	Medium 9	

Civils Construction Activities	Contamination	Incorrect / inappropriate management of contamination	Possible	Major	Extreme 18	- Ongoing management and monitoring measures would be documented in an appropriate form and implemented for any areas where minor, residual contamination remains following construction. (EMM C5) - The operational environmental management plan (OEMP) for the proposal would include an Emergency Response Plan (or equivalent) which would specify the procedure to be followed in the event of a spill, including the notification requirements and use of absorbent material to contain the spill. (EMM C6) - Where contaminated soils are to remain on-site, an appropriate OEMP would be prepared and implemented. The OEMP would include relevant ongoing management requirements developed in accordance with the NEPM (2013) and relevant guidelines made or approved by the NSW EPA. Measures may include but are not limited to, including procedures for excavation works, inspections and audits.(EMM C7) - Potential impacts from existing groundwater contamination (if present) during operation of the proposal would be managed through management and mitigation measures such as: a) Emplacement of appropriate topographic / drainage	Audits of waste tracking register, appointment of site auditor, site auditor monthly reports	Unlikely	Moderate	Medium 9	
Civils Construction Activities	Waste and Resources	Missed opportunities to maximise the beneficial re-use of wastes	Likely	Insignificant	Medium 7	- Waste would be minimised by accurately calculating materials brought to the proposal site and limiting materials packaging. (EMM WR2) - 100 per cent of usable spoil from construction would be reused, in accordance with the Sydney Metro spoil management hierarchy. (EMM WR3) - At least 95 per cent of inert and non-hazardous construction waste, excluding spoil, and at least 50 per cent of office waste would be recycled or alternatively beneficially reused. (EMM WR6)	Site inspections and audits, monthly monitoring of waste streams, waste classification	Unlikely	Insignificant	Low 2	
Civils Construction Activities	Waste and Resources	Inappropriate disposal and classification of waste (including demolition, vegetation and hazardous / special waste, office waste) or disposal at an unlicensed waste facility	Unlikely	Moderate	Medium 9	- All waste would be assessed, classified, managed, transported and disposed of in accordance with the Waste Classification Guidelines and the Protection of the Environment Operations (Waste) Regulation 2014. (EMM WR1) - Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities. (EMM WR4) - A materials tracking system would be implemented for material transferred to offsite locations such as licensed waste management facilities. (EMM WR5)	Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes	Rare	Moderate	Medium 6	
Civils Construction Activities	Visual Amenity	Amenity and visual impacts on nearby receivers due to compounds, including light spill and overshadowing	Likely	Minor	High 12	- Where feasible and reasonable, the elements within the construction site would be located to minimise visual impacts (for example storing materials and machinery behind fencing) (EMM LV1) - Sheds would be finished in a colour which aims to minimise visual impacts, if visible from areas external to the site (EMM LV2) - Lighting of the sites would be orientated to minimise glare and light spill impacts on adjacent receivers in accordance with AS4282:2019 (EMM LV3)	Site inspections and audits	Possible	Minor	Medium 8	
Civils Construction Activities	Sustainability and Climate change	Impacts due to climate change	Likely	Minor	High 12	- Sustainability initiatives would be incorporated into the detailed design and construction to support the achievement of the Sydney Metro West sustainability objectives. (EMM SCC1) - Best practice level of performance would be achieved using market leading sustainability rating tools during construction and operation. (EMM SCC2) - 25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction and operation of the proposal would be offset. (EMM SCC3) - An iterative process of greenhouse gas assessments and design refinements would be carried out during detailed design and construction to identify opportunities to minimise greenhouse gas emissions. Performance would be measured in terms of a percentage reduction in greenhouse gas emissions from a baseline inventory calculated at the detailed design stage. (EMM SCC4) - Climate change risk treatments would be confirmed and incorporated into the detailed design. (EMM SCC5)		Possible	Minor	Medium 8	

	Cumulative Impacts	Impacts on other construction projects occurring at the same time, Western and Eastern Tunnel Package will be completed during this time as well as numerous other developments (Given the potential overlap of construction with a number of large infrastructure projects, potential temporary cumulative impacts have been identified at Westmead, Parramatta, Sydney Olympic Park and The Bays)	Possible	Moderate	High 13	- Sydney Metro would work closely with the proponents of other nearby projects and stakeholders such as Transport Coordination to manage and coordinate the interface with other major projects under construction at the same time. - Co-ordination and consultation with the following stakeholders would occur where required to manage the interface of projects under construction at the same time: a) Other parts of Transport for NSW b) Department of Planning, Industry and Environment c) Utility providers d) Construction contractors. Co-ordination and consultation with these stakeholders would include: a) Provision of regular updates to the detailed construction program, construction sites and haul routes b) Identification of key potential conflict points with other construction projects c) Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve: - <u>Adjustments to the Sydney Metro construction program.</u>		Unlikely	Minor	Low 5	
General Civils Construction Activities	Traffic and access	Temporary increase in construction traffic on the local and regional road network, resulting in potentially temporary increased congestion and delays.	Likely	Moderate	High 17	- In the event of a traffic-related incident, coordination would be carried out with Transport Coordination and/or other parts of Transport for NSW (EMM T1) - Access to properties for emergency vehicles would be provided at all times (EMM T2) - All trucks would enter and exit the proposal site in a forward direction, where feasible and reasonable (EMM T3) - All staff parking would be provided on-site and not on surrounding local streets (EMM T4) - The driver induction process would include safety awareness in relation to all road users, particularly pedestrians and cyclists at the proposal site access point at Archbold Road/Lenore Drive during construction (EMM T5)	Site inspections and audits	Possible	Minor	Medium 8	

Project Details			Project Name			Project Location			Project Dates		
			Sydney Metro West - Central Tunneling Package			Sydney, Australia			11/08/2021		
Activity	Risk Description (How the Risk is Identified)	Risk Identified (Impact / Consequence / Likelihood)	Initial Risk / Impact	Assessment	Initial Risk / Impact	Residual Risk / Impact	Residual Risk / Impact	Assessment	Residual Risk / Impact	Assessment	Justification for Residual Risk Level
Civils Construction Activities	Air quality	Generation of dust during operation leading to amenity and/or community nuisance	Likely	Moderate	High 17	Medium 8	Medium 8	Medium 8	Medium 8	Medium 8	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Flora and Fauna	Spreading of noxious weeds via personnel, plant / equipment, topsoil / mulch	Possible	Minor	Medium 8	Low 5	Low 5	Low 5	Low 5	Low 5	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Noise and vibration	Noise and vibration impacts on sensitive receivers, there may be oversized deliveries out of hours from time to time (ODHW)	Likely	Moderate	High 17	High 13	High 13	High 13	High 13	High 13	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Soil and water	Tracking of mud at ancillary facilities access points	Likely	Moderate	High 17	Medium 8	Medium 8	Medium 8	Medium 8	Medium 8	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Soil and water	Serious incidents, e.g. uncontrolled release of concrete washout water, sedimentation impeding waterways, major fuel spill, that cause or threaten material harm to the environment	Possible	Major	Extreme 18	High 10	High 10	High 10	High 10	High 10	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Soil and water	Discharge of water that does not meet discharge criteria	Likely	Moderate	High 17	Medium 9	Medium 9	Medium 9	Medium 9	Medium 9	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Contamination	Incorrect / inappropriate management of contamination	Possible	Major	Extreme 18	Medium 9	Medium 9	Medium 9	Medium 9	Medium 9	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Waste and Resources	Missed opportunities to minimise the beneficial re-use of wastes	Likely	Insignificant	Medium 7	Low 2	Low 2	Low 2	Low 2	Low 2	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Waste and Resources	Inappropriate disposal and classification of waste (including demolition, vegetation and hazardous / special waste, office waste) or disposal at an unlicensed waste facility	Unlikely	Moderate	Medium 9	Medium 6	Medium 6	Medium 6	Medium 6	Medium 6	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Visual Amenity	Amenity and visual impacts on nearby receivers due to compounds, including light spill and overshadowing	Likely	Minor	High 12	Medium 8	Medium 8	Medium 8	Medium 8	Medium 8	Justification for Residual Risk Level (High or above)
Civils Construction Activities	Sustainability and Climate change	Impacts due to climate change	Likely	Minor	High 12	Medium 8	Medium 8	Medium 8	Medium 8	Medium 8	Justification for Residual Risk Level (High or above)

General Civils Construction Activities	Traffic and access	Increase in construction traffic on the local and regional road network, resulting in potentially temporary increased congestion and delays.	Likely	Moderate	High 17	- Construction site traffic would be managed to minimise movements during peak periods and avoid school zones during pick up and drop off times - In the event of a traffic-related incident, coordination would be carried out with Transport Coordination and/or other parts of Transport for NSW (EMM T1) - Access to properties for emergency vehicles would be provided at all times (EMM T2) - All trucks would enter and exit the proposal site in a forward direction, where feasible and reasonable (EMM T3) - All staff parking would be provided on-site and not on surrounding local streets (EMM T4) - The driver induction process would include safety awareness in relation to all road users, particularly pedestrians and cyclists at the proposal site access point at Archbold Road/Lenore Drive during construction (EMM T5)	Site inspections and audits	Possible	Minor	Medium 8	
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Attendees

Attendees

Name	Project Role	Company
Jon May	Environmental Approvals Manager	AFJV
Jeremy Glasgow	Planner	AFJV
Nigel Bond	Project Manager	AFJV
David Chan	Senior Project Engineer	AFJV
Carlos Sanabria	Project Manager	AFJV
Natalia Jongebloed	Environmental Consultant	wolfPeak
Erran Woodward	Environment Manager	AFJV
Sarah Harris	Environmental Consultant	Wolf Peak

Hierarchy

Eliminate
Substitute
Isolate
Engineer
Administrate
PPE

Likelihood

Almost Certain
Likely
Possible
Unlikely
Rare

Consequence

Insignificant
Minor
Moderate
Major
Catastrophic

Risk Grading

Extreme
High
Medium
Low

Risk Class

Extreme - Director Approval
High - Project Manager Approval
Medium - SWMS and Procedures
Low - Pre Work Brief & Existing Controls

Risk Calculator

Almost Certain	Insignificant	Almost CertainInsignificant	High 11	A
Almost Certain	Minor	Almost CertainMinor	High 16	B
Almost Certain	Moderate	Almost CertainModerate	Extreme 20	C
Almost Certain	Major	Almost CertainMajor	Extreme 23	D
Almost Certain	Catastrophic	Almost CertainCatastrophic	Extreme 25	A
Likely	Insignificant	LikelyInsignificant	Medium 7	B
Likely	Minor	LikelyMinor	High 12	C
Likely	Moderate	LikelyModerate	High 17	D
Likely	Major	LikelyMajor	Extreme 21	A
Likely	Catastrophic	LikelyCatastrophic	Extreme 21	B
Possible	Insignificant	PossibleInsignificant	Low 4	C
Possible	Minor	PossibleMinor	Medium 8	D
Possible	Moderate	PossibleModerate	High 13	A
Possible	Major	PossibleMajor	Extreme 18	B
Possible	Catastrophic	PossibleCatastrophic	Extreme 22	C
Unlikely	Insignificant	UnlikelyInsignificant	Low 2	D
Unlikely	Minor	UnlikelyMinor	Low 5	A

Unlikely	Moderate	UnlikelyModerate	Medium 9	B
Unlikely	Major	UnlikelyMajor	High 14	C
Unlikely	Catastrophic	UnlikelyCatastrophic	Extreme 19	D
Rare	Insignificant	RareInsignificant	Low 1	A
Rare	Minor	RareMinor	Low 3	B
Rare	Moderate	RareModerate	Medium 6	C
Rare	Major	RareMajor	High 10	D
Rare	Catastrophic	RareCatastrophic	High 15	A

Classification

IMS
 Project Management
 Industrial Relations
 Commercial
 Emergency Management
 Environment and Sustainability
 Quality
 Health and Safety

HOC Acceptable Level

Yes
 No

Type (Risk/Opp/Design Growth)

Risk
 Opportunity

Status

Open
 Closed
 Draft

Activity Category

Archaeology / Heritage
 Bridges (roadworks)
 Client/Developer
 Commissioning
 Compliance - Regulatory
 Construction & Delivery
 Consultants
 Contractor / Supplier performance
 Contracts & Commercial
 Design - Concept
 Design - Detailed
 Diversity & Culture
 Earthworks
 Employees
 Finance - Inflation
 Ground Conditions
 Health & Wellbeing
 Industrial Relations

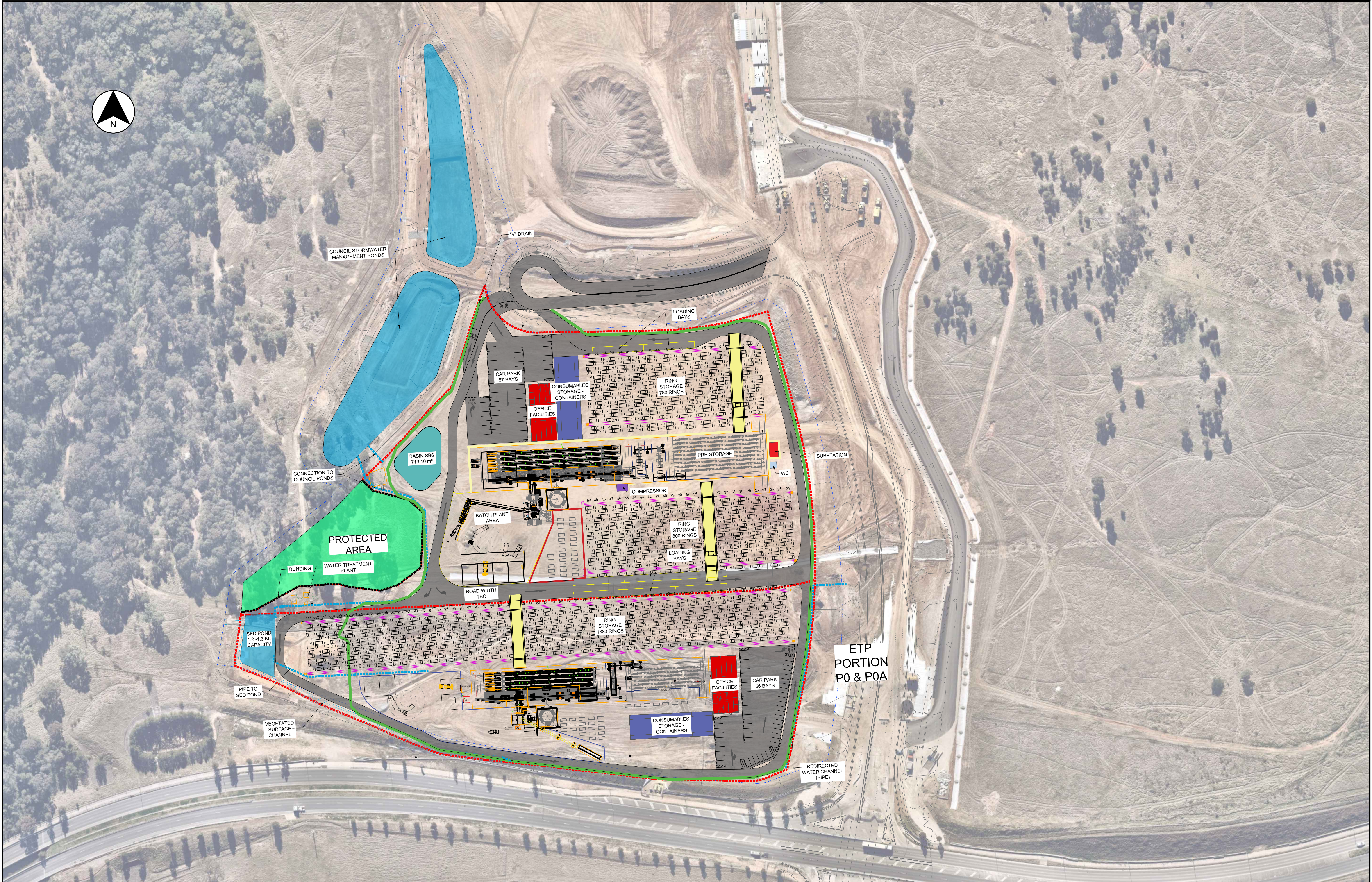
Information & Communications Technology
Infrastructure works
Insurance
Land Acquisition & Entitlements
Legislation
Local Authority Approvals &/or Works
Local community
Logistics & Security
Materials & Supply Chain
Meteorological / Weather
Neighbouring site(s)
Pavement (roadworks)
Plant / Equipment
Practical Completion
Prelims & Supervision
Procurement / Supply Chain
Productivity
Project Finalisation
Quality & Defects Management
Scheduling / Planning
Scope Control
Sustainability (drill down for details)
Tax
Traffic Management
Training, Skills & Employment
Tunnelling (roadworks)
Utilities
Waste

Cause

Planning (of our activities/objectives)
Communication (of our activities/objectives)
Control (of our activities/objectives)
Control - Licensing / Accreditation
Client / customer
Site Issues (contamination, remediation etc)
Other Operational Cause
Meteorological
Other External Cause
External Designers
Government Legislation / Regulation / Authorities
Supply Chain / Contractors
Technology
Political
Public interface
Strategic customer shifts
Competitors / New market entrants
Economic (financial markets, growth etc)
Process Efficiency
Product Development
Other strategic cause

APPENDIX D PRELIMINARY ENVIRONMENTAL CONTROL MAP

Cad File: C:\Users\marta.cbizqueza\Acciones\JVS\Sydney Metro West - Central\Tunnelling Package - 05.30 - Drawings\POST TENDER\CAD\01-SITE\LAYOUT\SMW-AFJV-CS-DWG-605100_REV F.dwg
Plot Date: 30/09/21 - 17:28
100mm AT FULL SIZE
A1 Original



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APPENDIX E SYDNEY METRO ENVIRONMENTAL INCIDENT CLASSIFICATION AND REPORTING PROTOCOL



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
Date of issue:	18 February 2019
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1. Purpose and scope

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

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

2. Introduction

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

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

3. Definitions

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

Term	Definition
Environment	means components of the earth, including: a) land, air and water, and b) any layer of the atmosphere, and c) any organic or inorganic matter and any living organism, and d) human-made or modified structures and areas, and includes interacting natural ecosystems that include components referred to in (a)-(c).
Environmental Event	An occurrence that identifies actual or potential environmental impacts or non-compliances. Events 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	harm to the environment is material if: a) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or b) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and c) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment. It does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.

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

4. Accountabilities

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

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

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

5. Environmental Events

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

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

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

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

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

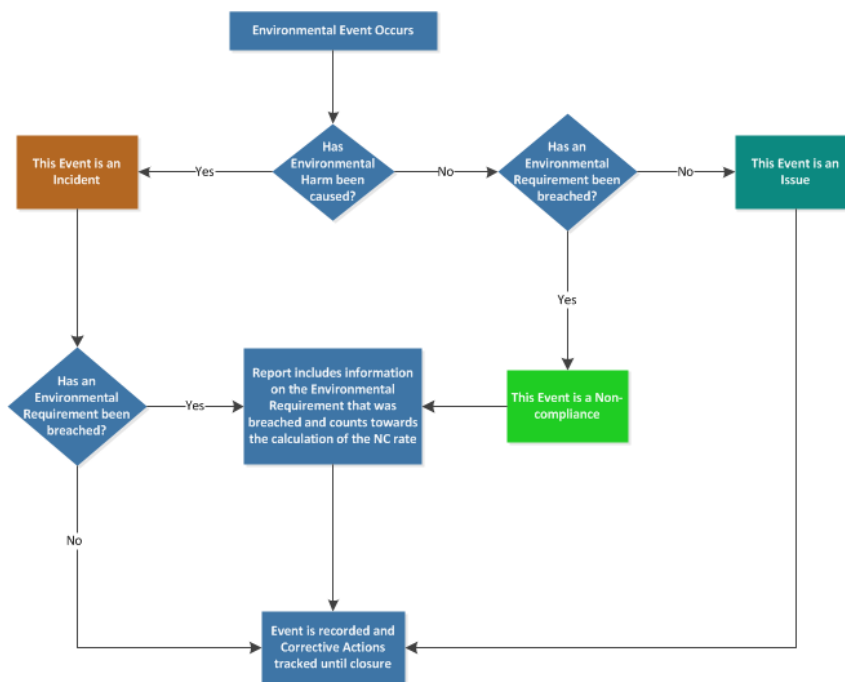


Figure 1: Environmental Event Classification Process

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

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

5.1. Worked Example – Classifying Environmental Events

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

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

5.1.1. Soil and Water Issue

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

5.1.2. Soil and Water Non-compliance

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

5.1.3. Soil and Water Incident

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

5.2. Notifiable Events

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

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

Table 1: Examples of Notifiable Events

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

5.3. Event Types

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

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

Table 2: Environmental Event Types and their descriptions

Event Type	Applies To:			Description
	Issue	Incident	Non-compliance	
Soil and Water	●	●	●	Covers the physical location, chemical composition and ecology of soils and waterways. Any event which changes these compositions is a Soil and Water event. Within this event type all instances of contamination, erosion and sedimentation of waterways is covered.
Flora and Fauna	●	●	●	Covers vegetation and vegetation communities as well as animals and animal habitat. Any event where vegetation is felled or damaged, animals are killed or injured, or habitat is harmed or destroyed is covered.
Waste and Spoil	●	●	●	Covers the management of Excavated Natural Material (ENM) and Virgin Excavated Natural Material (VENM) including on-site management, and disposal and also the classification and management of Waste materials. Note: that the transportation of spoil is covered under Traffic, Transport and Access.
Heritage	●	●	●	Covers the management of known heritage artefacts or sites, and the treatment of unexpected finds, archaeological investigations and other impacts.
Air Quality	●	●	●	Covers the management of emissions of particulate matter, odours, and gasses used as air quality parameters from worksites.
Noise and Vibration	●	●	●	Covers the management of airborne and ground borne noise and vibration and includes hold points on the commencement of any work where Out of Hours Works permits or Construction Noise Impact Statements are required.
Community Stakeholder and Business	●	●	●	Covers the management of Community and Stakeholder requirements and includes complaint response procedure, community management protocols, and the maintenance of information on websites.
Traffic Transport and Access	●	●	●	Covers the management of traffic inside and outside of sites including access points and parking requirements. This event type also covers any requirements in relation to vehicles and vehicle maintenance or the transportation of waste and spoil.
Spills and Leaks	●	●	●	Covers all instances where environmentally sensitive substances are held within a container which has the potential to leak or spill and covers pipes, hoses, fuel tanks, storage tanks and plastic containers. Note: Spills and Leaks specifically exclude anything in relation to the transport and deposition of sedimentation.
Management Systems	●	●	●	Covers procedural or 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.

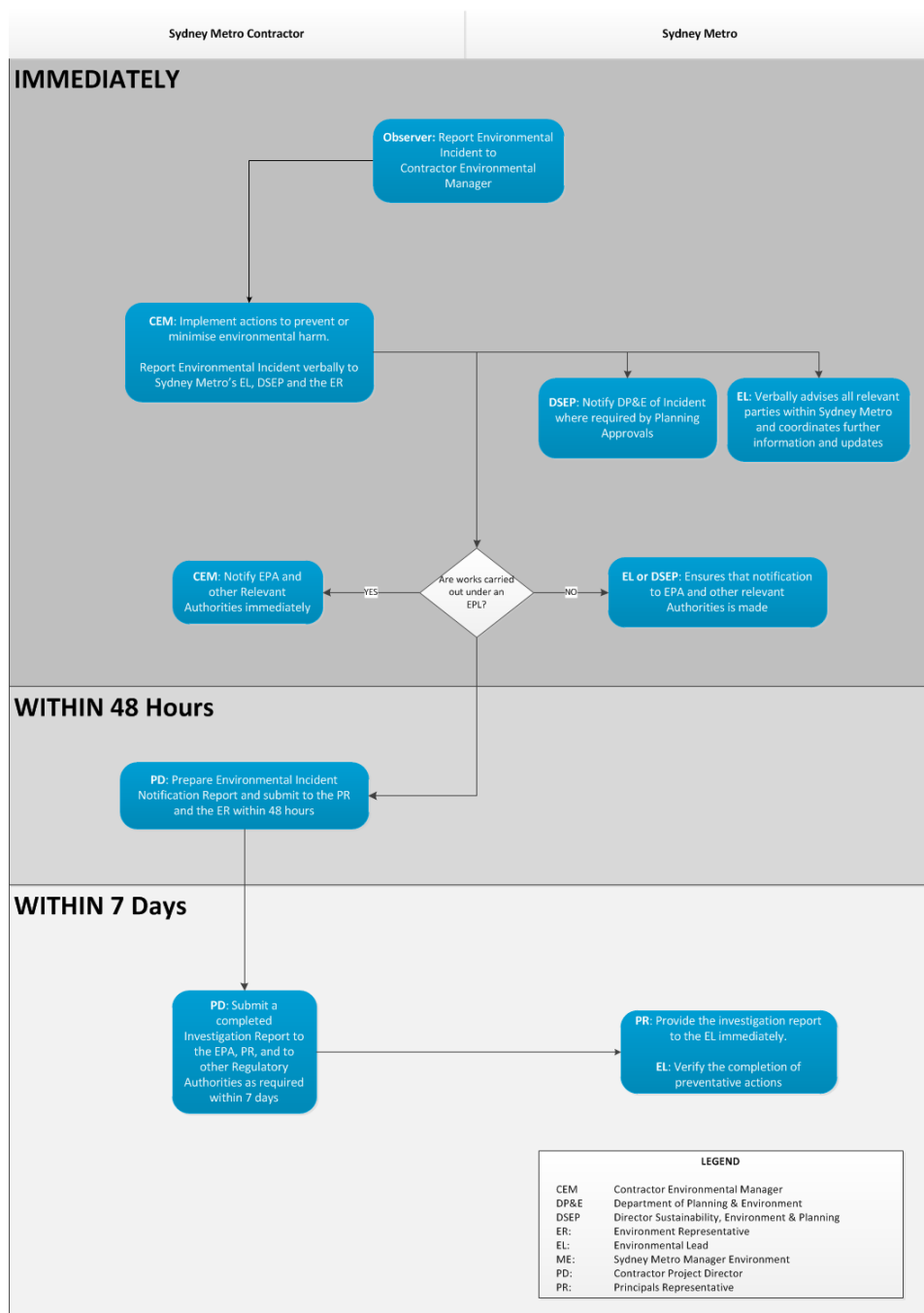


Figure 2: Environment Incident notification process for Class 1 and 2 Incidents

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 F SYDNEY METRO UNEXPECTED HERITAGE FINDS
PROTOCOL**



Sydney Metro Unexpected Heritage Finds Procedure

[SM-18-00105232]

Sydney Metro Integrated Management System (IMS)

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Document history

Version	Date of approval	Notes
1.1		Incorporates ER comments 21/06/17
1.2		Amends p13 step 8 reference to s146 added
1.3		Incorporates Planning Mods 1-4 including amended CoA E20
1.4		Incorporates ER comments 21/03/18
2.0		Removes SSI 15-7400 COA reference
3.0		Revises definition
3.1		Revises flow chart
3.2		Revises roles and responsibilities
3.3		General edits and corrections

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1. Purpose

This procedure is applicable to the Sydney Metro program of works including major projects delivered under Critical State Significant Infrastructure (CSSI) Planning Approvals, early CSSI minor and enabling works and works that are subject to the *NSW Heritage Act (1977)* including s57/139 and s60/140 exemptions and permit approvals and the *National Parks and Wildlife (NPW) Act 1974*.

This procedure has been prepared for Sydney Metro programs to provide a method for managing unexpected heritage items (both Aboriginal and non-Aboriginal) that are discovered during preconstruction (pre-Construction Heritage Management Plan approval), construction phases (post Construction Heritage Management Plan approval) and for works subject to the *NSW Heritage Act (1977)*.

In NSW, there are strict laws to protect and manage heritage objects and relics. As a result, appropriate heritage management measures need to be implemented to minimise impacts on heritage values; ensure compliance with relevant heritage notification and other obligations; and to minimise the risk of penalties to individuals, Sydney Metro and its contractors. This procedure includes Sydney Metro's heritage notification obligations under the *Heritage Act*, *NPW Act* and the *Coroner's Act 2009* and the requirements of the conditions of approval (CoA) issued by NSW Department of Planning, Industry and Environment.

Note that a Contractor must not amend the *Sydney Metro Unexpected Finds Procedure* or use a different procedure without the prior approval of Sydney Metro.

This procedure must be read in conjunction with the relevant CSSI conditions of approval (if applicable), the contract documents and other plans and procedures including the Sydney Metro Exhumation Procedure in addition to any other relevant documents as developed by the contractor during the delivery of the Sydney Metro works.

2. Definitions and Abbreviations

An unexpected heritage find is:

- any unanticipated discovery of an actual or potential heritage item, which Sydney Metro does not have approval to disturb and/or does not have an existing management process in place.
- a find that has not been previously identified or assessed
- a find that is not referenced in an Archaeological Research Design (ARD), Archaeological Method Statement (AMS) or other project document relating to heritage and archaeology
- not covered by an existing approval under the *Heritage Act 1977* (Heritage Act) or *National Parks and Wildlife Act 1974* (NPW Act).

Note that locally significant areas of historical archaeological potential identified in an Archaeological Method Statement but not identified in an Archaeological Research Design would be managed as an “expected” find.

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All terminology in this procedure is taken to mean the generally accepted or dictionary definition with the exception of the following terms which have a specifically defined meaning:

	Definitions
AHIP	Aboriginal Heritage Impact Permit
Aboriginal object	An Aboriginal object is any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains. An Aboriginal object may include a shell midden, stone tools, bones, rock art, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps.
ARD	Archaeological Research Design
AMS	Archaeological Method Statement
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CSSD	Critical State Significant Development
CSSI	Critical State Significant Infrastructure
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
Disturbance	Disturbance is considered to be any physical interference to an item that results in it being destroyed, defaced, damaged, harmed, impacted or altered in any way (this includes archaeological investigation activities).
Excavation Director	A person that has been determined by the NSW Heritage Division to meet the Heritage Council of NSW's Criteria for Assessment of Excavation Directors (4 September 2019 and as updated) and can therefore competently archaeologically investigate a site of either local and/or state significance.
Heritage Act	NSW <i>Heritage Act 1977</i>
NPW Act	NSW <i>National Parks and Wildlife Act 1974</i>
Heritage NSW	Formerly Office of Environment and Heritage (OEH). Now Heritage NSW as part of PNSW Premier and Cabinet.
SM	Sydney Metro
Relic (non-Aboriginal heritage)	A relic means any deposit, artefact, object or material evidence that: a) relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and b) is of State or local significance. A relic may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse.
TfNSW	Transport for New South Wales
Work (non-Aboriginal heritage)	Archaeological features such as historic utilities or buried infrastructure that provide evidence of prior occupations such as former rail or tram tracks, timber sleepers, kerbing, historic road pavement, fences, culverts, historic pavement, buried retaining walls, cisterns, conduits, sheds or building foundations, but are also subject to assessment by the Excavation Director to determine its classification.

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2.1. Legislation that does not apply

The following authorisations are not required for Sydney Metro approved Critical State Significant Infrastructure (and accordingly the provisions of any Act that prohibits an activity without such an authority do not apply):

- Division 8 of Part 6 of the *Heritage Act 1977* does not apply to prevent or interfere with the carrying out of approved State significant infrastructure;
- An approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*; and
- An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*.

This document provides relevant background information in Section 4, followed by the technical procedure in Sections 6 and 7. Associated guidance referred to in the procedure can be found in Appendices 1-6.

3. Scope

Even with early investigations unexpected finds may still occur during works on a Sydney Metro site. When this happens, this procedure must be followed. This procedure provides direction on when to stop work, where to seek technical advice, how to notify the regulator if required, and when works can recommence.

This procedure applies to the discovery of any unexpected heritage item, relic or object, where the find is not anticipated in an approved ARD or AMS or other project specific document related to archaeology.

This procedure must be followed by all Sydney Metro staff, contractors, subcontractors or any person undertaking works for Sydney Metro. It includes references to some of the relevant legislative and regulatory requirements, but is not intended to replace them.

This procedure *does not apply* to:

- the discovery and disturbance of heritage items as a result of investigations being undertaken in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW*⁴³⁷⁶ 2010¹; an Aboriginal Heritage Impact Permit (AHIP) issued under the NPW Act; or a permit approval issued under the Heritage Act;
- the discovery and disturbance of heritage items as a result of construction related activities, where the disturbance is permissible in accordance with an AHIP or an approval issued under the Heritage Act or CSSI /CSSD planning approval; or
- locally significant non-Aboriginal archaeology identified in an AMS and not in an ARD.

¹ An act carried out in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* as published by the Department in the Gazette on 24 September 2010 is excluded from the definition of *harm* an object or place in section 5 (1) of the NPW Act.

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4. Types of unexpected heritage finds and corresponding statutory protections

Project, field and environmental personnel (including construction contractors) are critical to the early identification and protection of unexpected finds.

Appendix 1 illustrates the wide range of heritage items uncovered to date during Sydney Metro projects and gives an indicative guide to what unexpected finds may look like.

These discoveries are categorised as either:

- (a) Aboriginal objects;
- (b) Historic (non-Aboriginal) heritage items; or
- (c) Human skeletal remains.

The relevant legislation that applies to each of these categories is described below.

4.1. Aboriginal objects

The *NPW Act* protects Aboriginal objects which are defined as:

“any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains”².

Examples of Aboriginal objects include stone tool artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burials and scarred trees.

IMPORTANT!

All Aboriginal objects, regardless of significance, are protected under law.

If any impact is expected to an Aboriginal object, an AHIP is usually required from Heritage NSW. When a person becomes aware of an Aboriginal object they must notify the Director-General of Heritage NSW about its location³. Assistance on how to do this is provided in

4.2. Historic heritage items

Historic (non-Aboriginal) heritage items may include:

- Archaeological ‘relics’ or
- Other historic items (i.e. works, structures, buildings or movable objects).

² Section 5(1) *NPW Act*.

³ This is required under section 89(A) of the *NPW Act* and applies to all Sydney Metro projects

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4.2.1. Archaeological relics

The Heritage Act protects *relics* which are defined as:

“any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance”⁴.

Relics are archaeological items of local or state significance which may relate to past domestic, industrial or agricultural activities in NSW, and can include bottles, remnants of clothing, pottery, building materials and general refuse.

IMPORTANT!

All relics are subject to statutory controls and protections:

If a relic is likely to be disturbed, a heritage approval is usually required from the NSW Heritage Council. When a person discovers a relic they must notify the NSW Heritage Council of its location⁵.

4.2.2. Other historic items

Some historic heritage items are not considered to be ‘relics’, but are instead referred to as works, buildings, structures or movable objects. Examples of these items that may be encountered include culverts, historic pavements, retaining walls, tramlines, rail tracks, turn tables, timber sleepers, cisterns, fences, sheds, buildings and conduits. Although an approval under the *Heritage Act* may not be required to disturb these items, their discovery must be managed in accordance with this procedure.

Usually archaeological relics are uncovered via a process of excavation or soil removal. When an unexpected find is uncovered, an archaeological excavation permit under section 140 or section 60 of the *Heritage Act* may be required to further investigate or remove it if investigation is not covered by an existing approval. In contrast, ‘other historic items’ either exist above the ground surface (for example a shed), or they are designed to operate and exist beneath the ground surface (for example a culvert). They may also need a permit to alter, disturb or remove them if there is not an approval already in place.

⁴ Section 4(1) *Heritage Act*.

⁵ This is required under section 146 of the *Heritage Act* and applies to all Sydney Metro projects.

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4.3. Human skeletal remains

The *Sydney Metro Exhumation Procedure* provides a more detailed explanation of the approval processes related to human remains.

Human skeletal remains can be identified as either an Aboriginal object or non-Aboriginal relic depending on the ancestry of the individual (Aboriginal or non-Aboriginal) and the burial context (archaeological or non-archaeological). Remains are considered to be archaeological when the time elapsed since death is suspected of being 100 years or more. Depending on ancestry and context, different legislation applies.

As a simple example, a pre-European settlement archaeological Aboriginal burial would be protected under the *NPW Act*, while a historic (non-Aboriginal) archaeological burial within a cemetery would be protected under the *Heritage Act*. For a non-Aboriginal archaeological burial, the relevant heritage approval and notification requirement described in Appendix 4 would apply. In addition to the *NPW Act*, finding Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under section 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Commonwealth).

Where it is suspected that less than 100 years has elapsed since death, the human skeletal remains come under the jurisdiction of the State Coroner and the *NSW Coroners Act 2009*. Such cases are 'reportable deaths' and under legal notification obligations set out in section 35(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 (whether Aboriginal or non-Aboriginal remains). Public health controls may also apply⁶.

Guidance on what to do when suspected human remains are found is provided in Appendix 5.

IMPORTANT!

All human skeletal remains are subject to statutory controls and protections.

All bones must be treated as potential human skeletal remains and work around them must stop while they are appropriately protected and investigated, the relevant authorities advised and approvals received. This includes skeletal material found during any phase of work including geotechnical works, early works, construction works and any other site works.

⁶ Under section 19 of the *Coroners Act 2009*, the coroner has no jurisdiction to conduct an inquest into reportable death unless it appears to the coroner that (or that there is reasonable cause to suspect that) the death or suspected death occurred within the last 100 years.

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5. Legislative Requirements

Table 1 identifies some of the relevant legislation/regulations for the protection of heritage and the management of unexpected heritage finds in NSW. It should be noted that significant penalties exist for breaches of the legislation which result in unauthorised impacts to heritage items.

To avoid breaches of legislation, it is important that Sydney Metro and its contractors are aware of their statutory obligations under relevant legislation and that appropriate control measures are in place to ensure that unexpected finds are appropriately managed during all project phases. Contractors will need to ensure that they undertake their own due diligence to identify any other legislative requirements that may apply for a given project.

Table 1 Legislation and guidelines for management of unexpected heritage finds

Relevant Requirement	Objectives and offences
Environmental Planning and Assessment Act 1979 (EP&A Act)	Part 5 Division 5.2 Subdivision 2 Section 5.19 Requires heritage to be considered within the environmental impact assessment of projects.
Heritage Act 1977 (Heritage Act)	The <i>Heritage Act</i> provides for the care, protection and management of heritage items in NSW. Under section 139, it is an offence to disturb or excavate any land knowing or having 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, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by the Heritage NSW under the Act, a relic is defined as: 'any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.' A person must notify the Heritage NSW, if a person is aware or believes that they have discovered or located a relic (section 146). Penalties for offences under the <i>Heritage Act</i> can include six months imprisonment and/or a fine of up to \$1.1million.

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Relevant Requirement	Objectives and offences
National Parks and Wildlife Act 1974 (NPW Act)	The <i>NPW Act</i> provides the basis for the care, protection and management of Aboriginal objects and places in NSW. An Aboriginal object is defined as: <i>'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'</i>. An 'Aboriginal place' is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture. An Aboriginal place does not have to contain physical evidence of occupation (such as Aboriginal objects). Under section 87 of the Act, it is an offence to harm or desecrate an Aboriginal object or place. There are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an AHIP and the permit's conditions were not contravened. Defences and exemptions to the offence of harming an Aboriginal object or Aboriginal place are provided in section 87, 87A and 87B of the Act. A person must notify Heritage NSW if a person is aware of the location of an Aboriginal object. Penalties for some of the offences can include two years imprisonment and/or up to \$550,000 (for individuals), and a maximum penalty of \$1.1 million (for corporations).

6. Unexpected heritage finds protocol

6.1. What is an unexpected heritage find?

An 'unexpected heritage find' can be defined as any unanticipated archaeological discovery that has not been identified during a previous assessment or is not covered by an existing permit under the *Heritage Act*. The find may have potential cultural heritage value, which may require a heritage permit or notification if any interference of the heritage item is proposed or anticipated.

The range of potential unexpected finds can include but is not limited to:

- remains of rail infrastructure including buildings, footings, stations, signal boxes, rail lines, bridges and culverts;
- remains of other infrastructure including sandstone or brick buildings, wells, cisterns, drainage services, conduits, old kerbing and pavement, former road surfaces, timber and stone culverts, bridge footings and retaining walls;
- artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes; and
- archaeological human skeletal remains.

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6.2. Managing unexpected finds

In the event that an unexpected find is encountered on a Sydney Metro site, the steps detailed in Table 2 must be followed. There are seven steps in the procedure.

IMPORTANT!

Sydney Metro may have approval to impact certain heritage items during construction. If you think that you may have discovered a heritage item and you are unsure whether an approval is in place or not, **STOP** works and follow this procedure.

Table 2 Specific tasks to be implemented following the discovery of an unexpected heritage item

Step	Task	Responsibility	Guidance and tools
1	Stop work and protect the item		
1.1	Stop all work, including geotechnical investigations, in the immediate area of the item and notify the Project Manager.	Contractor/ Supervisor	Appendix 1 Identifying Unexpected Heritage items
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical. No work is to be undertaken within this zone until further investigations are completed and if required, appropriate approvals are obtained. Inform all site personnel about the no-go zone.	Project Manager/ Contractor/ Supervisor	
2	Engage an Archaeologist		
2.1	If you have Excavation Director or an archaeologist and/or Aboriginal heritage consultant has been previously appointed for the project, contact them to discuss the location and nature of the item and arrange a site inspection. The project Construction Environmental Management Plan (CEMP) may contain contact details of the archaeologist/Aboriginal heritage consultant. Provide as much information as possible, including photos and completed recording form. Inform the Sydney Metro Environmental Manager, and keep them involved in the process. The Environmental Manager will inform the Sydney Metro Senior Heritage Advisor.	Contractors Project Manager	Appendix 2 Unexpected Heritage Item Recording Form
2.2	Where there is no project archaeologist engaged for the works engage a suitably qualified consultant to assess the find: If the find is a non-Aboriginal item engage a suitably qualified and experienced historical archaeological consultant. If the find is likely to be an Aboriginal object, engage an Aboriginal heritage consultant.	Contractor's Project Manager	

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Step	Task	Responsibility	Guidance and tools
2.3	Archaeologist/Excavation Director and Sydney Metro Environmental Manager to advise the Project Manager whether Sydney Metro has approval to impact the 'item'. If yes , work may recommence in accordance with that approval or permit. There is no further requirement to follow this procedure. If no , continue to next step.	Contractor's Project Manager	
3	Arrange site access		
3.1	Arrange site access for the archaeologist/Aboriginal heritage consultant to inspect the item as soon as practicable. In most cases a site inspection is required to conduct a preliminary assessment.	Contractor's Project Manager, Excavation Director	
3.2	Subject to the archaeologist/Aboriginal heritage consultant's assessment, work may recommence at a set distance from the item. This is to protect any other archaeological material that may exist in the vicinity, which may have not yet been uncovered. Existing protective fencing established in Step 1.2 may need to be adjusted to reflect the extent of the newly assessed protective area. No works are to take place within this area once established.	Archaeologist/ Aboriginal heritage consultant Contractor's Project Manager, Excavation Director	
3.3	Occasionally, the archaeologist/Aboriginal heritage consultant may determine from the photographs provided at Step 2.1 that no site inspection is required because no heritage constraint exists for the project (for example <i>the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'</i>). Any such advice should be provided in writing (for example via email or letter with the consultant's name and company details clearly identifiable) to the Sydney Metro Project Manager, Environment Manager and Senior Heritage Advisor.	Archaeologist/ Aboriginal heritage consultant/ Excavation Director	Proceed to Step 8
4	Undertake Preliminary assessment and recording of the find		
4.1	Has the 'find' been damaged or harmed? If yes , record the incident in the Incident Management System. Implement any additional reporting requirements related to the planning approval and CEMP, where relevant.	Contractors Project Manager, Archaeologist and/or Excavation Director	
4.2	Can the works avoid further disturbance to the item? Project Manager to confirm with Sydney Metro Environment Manager. Complete the remaining tasks.	Contractor's Project Manager	

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Step	Task	Responsibility	Guidance and tools
4.3	Inspect, document and photograph the item.	Archaeologist and/or Excavation Director	Appendix 2 Unexpected Heritage Item Recording Form Appendix 3 Photographing Unexpected Heritage items
4.4	Is the item likely to be bone? If yes , follow the steps in Appendix 4 – ‘Uncovering bones’. Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site. Also refer to the Sydney Metro Exhumation Procedure If no , proceed to next step.	Archaeologist and/or Excavation Director	Appendix 4 Uncovering Bones
4.5	The archaeologist/Aboriginal heritage consultant may provide advice after the site inspection and preliminary assessment that no heritage constraint exists for the project (for example the item is not a ‘relic’ or a ‘heritage item’ or an ‘Aboriginal item’). Any such advice should be provided in writing (for example via email or letter with the consultant’s name and company details clearly identifiable) to the Metro Project Manager.	Archaeologist/ Aboriginal heritage consultant/ Contractor’s Project Manager, Excavation Director	Proceed to Step 7 Refer to Appendix 1 Examples of finds encountered during construction works
4.6	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). The archaeologist/Aboriginal heritage consultant can provide contacts for such specialist consultants.	Excavation Director Archaeologist	
4.7	Where the item has been identified as a ‘relic’ or ‘heritage item’ or an ‘Aboriginal object’ the archaeologist should formally record it.	Archaeologist/ Aboriginal heritage consultant	
4.8	NSW Heritage for non-Aboriginal relics and NSW Department of Planning, Industry and Environment for Aboriginal objects, can be notified informally by telephone at this stage by the Sydney Metro Senior Heritage Advisor. Any verbal conversations with regulators must be noted on the project file for future reference.	Contractors Project Manager, Excavation Director	

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Step	Task	Responsibility	Guidance and tools
5	Notify the regulator, if required.		
5.1	Based on the findings of the archaeological or heritage management plan and corresponding legislative requirements, is notification of Heritage NSW and the Secretary required? If no , proceed directly to Step 6 If yes , proceed to next step.	Sydney Metro Environmental Manager, Contractor's Excavation Director	
5.2	If notification is required, complete the template notification letter, including the archaeological/ heritage management plan and other relevant supporting information and forward to the Sydney Metro Environmental Manager. The Environmental Manager will seek the approval of the Sydney Metro Senior Heritage Advisor and the signature of the Principal Manager Sustainability Environment and Planning (Program).	Sydney Metro Environmental Manager Excavation Director	Appendix 6 Template Notification Letter
5.3	Forward the signed notification letter to Heritage NSW and the Secretary. Informal notification (via a phone call or email) to Heritage NSW prior to sending the letter is appropriate. The archaeological or heritage management plan and the completed Unexpected Heritage Item Recording Form (Appendix 2) must be submitted with the notification letter (for both Aboriginal objects and non-Aboriginal relics). The Department of Planning, Industry and Environment may also need to be notified.		
5.4	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form is to be kept on file and a copy sent to the Sydney Metro Project Manager.	Contractor's Project Manager, Excavation Director	
6	Implement archaeological or heritage management plan		
6.1	Modify the archaeological or heritage management plan to take into account any additional advice resulting from notification and discussions with regulator.	Contractor's Project Manager, Excavation Director	
6.2	Implement the archaeological or heritage management plan. Where impact is expected, this may include a formal assessment of significance and heritage impact assessment, preparation of excavation or recording methodologies, consultation with Registered Aboriginal Parties, obtaining heritage approvals etc, if required.	Contractor's Project Manager, Excavation Director	
6.3	Where heritage approval is required contact the Sydney Metro Environment Manager for further advice and support material. Please note there are time constraints associated with heritage approval preparation and processing.	Contractor's Project Manager, Excavation Director	

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6.4	Assess whether heritage impact is consistent with the project approval or if project approval modification is required from the Department of Planning, Industry and Environment.	Excavation Director/ Sydney Metro Environmental Manager	
6.5	Where statutory approvals (or project approval modifications) are required, impact upon relics and/or Aboriginal objects must not occur until heritage approvals are issued by the appropriate regulator.	Contractor's Project Manager, Excavation Director	
6.6	Where statutory approval is not required but where recording is recommended by the archaeologist/Aboriginal heritage consultant, sufficient time must be allowed for this to occur.	Contractor's Project Manager, Excavation Director	
6.7	Ensure short term and permanent storage locations are identified for archaeological material or other heritage material removed from site, where required. Interested third parties (for example museums, local Aboriginal land councils, or local councils) should be consulted on this issue. Contact the archaeologist or Aboriginal heritage consultant for advice on this matter, if required.	Contractor's Project Manager, Excavation Director	
7	Resume work		
7.1	Seek written clearance to resume project work from the project Excavation Director/ Archaeologist/ Aboriginal heritage consultant. Clearance would only be given once all archaeological excavation and/or heritage recommendations and approvals (where required) are complete. Resumption of project work must be in accordance with the all relevant project/heritage approvals/determinations.	Contractor's Project Manager, Excavation Director	
7.2	If required, ensure archaeological excavation/heritage reporting and other heritage approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies.	Contractor's Project Manager, Excavation Director	
7.3	If additional unexpected items are discovered this procedure must begin again from Step 1.	All	

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7. Responsibilities

Table 3 Roles and Responsibilities

Role	Responsibility or role under this guideline
Contractor / Supervisor	Stop work immediately when an unexpected heritage find is encountered. Cordon off area until Environmental Manager /Excavation Director advises that work can recommence. Manage the process of identifying, protecting and mitigating impacts on the find. Liaise with Sydney Metro Project Manager, Environment Manager and Senior Heritage Advisor. Assist the archaeologist/Aboriginal heritage consultant with mitigation and regulatory requirements. Complete Incident Report and review CEMP for any changes required. Propose amendments to the CEMP if any changes are required.
Contractors Project Manager	Ensures all aspects of this procedure are implemented. Advise Contractor / Supervisor to recommence work if all applicable requirements have been satisfied and the Excavation Director /Project Archaeologist has approved recommend of work.
Contractor's or Project Heritage Advisor or Consultant	Provide expert advice to the Sydney Metro Environment Manager on find identification, significance, mitigation, legislative procedures and regulatory requirements.
Environmental Representative	Ensure compliance with relevant approvals (new and existing).
Sydney Metro Environment Manager	Notify the Sydney Metro Principal Manager, Environmental Management of find and manage Incident Reporting once completed by Environmental Manager.
Sydney Metro Senior Heritage Advisor	Provide expert advice to Sydney Metro Environment Manager and project as required.

8. Seeking Advice

Advice on this procedure should be sought from the Sydney Metro Environment Manager in the first instance. Contractors and delivery partners should ensure their own project environment managers are aware of and understand this procedure.

Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from a suitably qualified and experienced archaeologist/Aboriginal heritage consultant.

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9. Related documents and references

- Sydney Metro Environmental Incident Classification and Reporting – SM-17-00000096
- Transport for NSW Guide to Environmental Control Map – 3TP-SD-015/7.0
- NSW Heritage Office (1998), *Skeletal remains: guidelines for the management of human skeletal remains*.
- Roads and Maritime Services (2015), *Standard Management Procedure Unexpected Heritage Items*.
- Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal remains*.
- Sydney Metro Exhumation Procedure – SM-ES-PW-315/1.0

10. List of appendices

The following appendices are included to support this procedure:

- Appendix 1: Examples of finds encountered during construction works
Appendix 2: Unexpected Heritage Item Recording Form
Appendix 3: Photographing Unexpected Heritage Items
Appendix 4: Uncovering Bones
Appendix 5: Archaeological Advice Checklist
Appendix 6: Template Notification Letter

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Appendix 1: Examples of finds encountered during construction works



Photo 1 – Aboriginal artefacts found at the Wickham Transport Interchange, 2015



Photo 2 – Aboriginal artefacts (shell material) found at the Wickham Transport Interchange, 2015

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Photo 3 1840s seawall and 1880s retaining wall uncovered at Balmain East, 2016



Photo 4 Sandstone pavers uncovered at Balmain East, 2016

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Photo 5 - Platform structure at Hamilton Railway Station classified as a 'work' by the project archaeologist - Wickham Transport Interchange project, 2015

Photo 6 - Platform structure at Hamilton Railway Station classified as a 'work' by the project archaeologist - Wickham Transport Interchange project, 2015



Photo 7 - Sandstone flagging and cesspit - Wynyard Walk project, 2014

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Photo 8 - Chinese Ming Dynasty pottery and English porcelain/pottery dating back to early 19th century - Wynyard Walk project, 2014



Photo 9 - Pottery made by convict potter Thomas Ball during the early settlement - Wynyard Walk project, 2014

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The following images, obtained from the Roads and Maritime Services' *Standard Management Procedure for Unexpected Heritage items 2015*, can be used to assist in the preliminary identification of potential unexpected items during construction and maintenance works.

Photo 10 - Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at



Tarcutta); Linear archaeological feature with post holes (Hume Highway Duplication), Animal bones (Hume Highway Bypass at Woomargama); Cut wooden stake; Glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area) (RMS, 2015).

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Photo 11 - Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at Tarcutta); Linear archaeological feature with post holes (Hume Highway Duplication), Animal bones (Hume Highway Bypass at Woomargama); Cut wooden stake; Glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area) (RMS, 2015).

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Appendix 2 - Unexpected Heritage Find Recording Form

Example of unexpected heritage item recording form:

This form is to be completed Excavation Director on the discovery of an archaeological heritage find during construction or maintenance works		
Date:	Recorded by: (include name and position)	
Project name:		
Description of works being undertaken:		
Description of exact location of item		
Description of item found (What type of item is it likely to be? Tick the relevant boxes).		
A. A relic	☐	A 'relic' is evidence of a past human activity relating to the settlement of NSW with local or state heritage significance. A relic might include bottle, utensils, plates, cups, household items, tools, implements, and similar items
B. A 'work', building or structure	☐	A 'work' can generally be defined as a form infrastructure such as track or rail tracks, timber sleepers, a culvert, road base, a bridge pier, kerbing, and similar items
C. An Aboriginal object	☐	An 'Aboriginal object' may include stone tools, stone flakes, shell middens, rock art, scarred trees and human bones
D. Bone	☐	Bones can either be human or animal remains. Remember that you must contact the local police immediately by telephone if you are certain that the bone(s) are human remains.
E. Other	☐	
Provide a short description of the item (E.g. metal rail tracks running parallel to the rail corridor. Good condition. Tracks set in concrete, approximately 10 cm below the current ground surface).		

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Sketch <i>(Provide a sketch of the item's general location in relation to other road features so its approximate location can be mapped without having to re-excavate it. In addition, please include details of the location and direction of any photographs of the item taken)</i>			
Action taken (Tick either A or B)			
A. Unexpected item would not be further impacted by the works	☒	Describe how works would avoid impact on the item. (E.g. the rail tracks would be left in situ and recovered with paving).	
B. Unexpected item would be further impacted by the works	☐	Describe how works would impact on the item. (E.g. milling is required to be continued to a depth of 200 mm depth to ensure the pavement requirements are met. Rail tracks would need to be removed.)	
Excavation Director		Signature	
		Signature	

Important

It is a statutory offence to disturb Aboriginal objects and historic relics (including human remains) without an approval. All works affecting objects and relics must cease until an approval is sought.

Approvals may also be required to impact on certain works.

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Appendix 3 - Photographing unexpected heritage finds

Photographs of unexpected finds in their current context (*in situ*) may assist archaeologists/Aboriginal heritage consultants to better identify the heritage values of the item. Emailing good quality photographs to specialists can allow for better quality and faster heritage advice. The key elements that must be captured in photographs of the item include its position, the item itself and any distinguishing features. All photographs must have a scale (ruler, scale bar, mobile phone, coin etc.) and a note describing the direction of the photograph.

Context and detailed photographs

It is important to take a general photograph (Figure 1) to convey the location and setting of the item. This will add value to the subsequent detailed photographs also required (Figure 2).

Removal of the item from its context (e.g. excavating from the ground) for photographic purposes is not permitted.



Figure 2: Close up detail of the sandstone surface showing material type, formation and construction detail. This is essential for establishing date of the feature.

Figure 1: Telford road uncovered on the Great Western Highway (Leura) in 2008 (RMS, 2015).

Photographing distinguishing features

Where unexpected items have a distinguishing feature, close up detailed photographs must be taken of these features, where practicable. In the case of a building or bridge, this may include diagnostic details architectural or technical features. See Figures 3 and 4 for examples.

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Figure 3: Ceramic bottle artefact with stamp.



Figure 4: Detail of the stamp allows 'Tooth & Co Limited' to be made out. This is helpful to a specialist in gauging the artefact's origin, manufacturing date and likely significance.

Photographing bones

The majority of bones found on site will be animal bones often requiring no further assessment (unless they are in archaeological context). However, if bones are human, the police must be contacted immediately (see Appendix 5 for detailed guidance). Taking quality photographs of the bones can often resolve this issue quickly. The project archaeologist can confirm if bones are human or non-human if provided with appropriate photographs.

Ensure that photographs of bones are not concealed by foliage (Figure 5) as this makes it difficult to identify. Minor hand removal of foliage can be undertaken as long as disturbance of the bone does not occur. Excavation of the ground to remove bone(s) should not occur, nor should they be pulled out of the ground if partially exposed.

Where sediment (adhering to a bone found on the ground surface) conceals portions of a bone (Figure 6) ensure the photograph is taken of the bone (if any) that is not concealed by sediment.



Figure 5: Bone concealed by foliage.



Figure 6: Bone covered in sediment

Ensure that all close up photographs include the whole bone and then specific details of the bone (especially the ends of long bones, the *epiphysis*, which is critical for species identification). Figures 7 and 8 are examples of good photographs of bones that can easily

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be identified from the photograph alone. They show sufficient detail of the complete bone and the epiphysis.



Figure 7: Photograph showing complete bone.



Figure 8: Close up of a long bone's epiphysis.

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Appendix 4 - Uncovering bones

This appendix provides advice regarding:

- what to do on first discovering bones;
- the range of human skeletal notification pathways; and
- additional considerations and requirements when managing the discovery of human remains.

1. First uncovering bones

Refer to the Sydney Metro Exhumation Procedure

Stop all work in the vicinity of the find. All bones uncovered during project works should be **treated with care and urgency** as they have the potential to be human remains. The bones must be identified as either human or non-human as soon as possible by a qualified forensic or physical anthropologist.

On the very rare occasion where it is immediately obvious from the remains that they are human, the Project Manager (or a delegate) should **inform the police by telephone** prior to seeking specialist advice. It will be obvious that it is human skeletal remains where there is no doubt, as demonstrated by the example in Figure 1⁷. Often skeletal elements in isolation (such as a skull) can also clearly be identified as human. Note it may also be obvious that human remains have been uncovered when soft tissue and/or clothing are present.

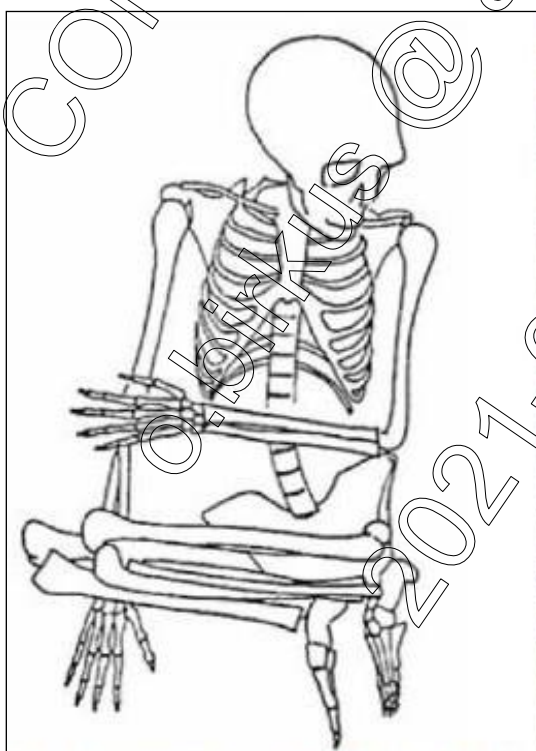


Figure 1: Schematic of a complete skeleton that is 'obviously' human¹².



Figure 2: Disarticulated bones that require assessment to determine species.

⁷ After Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal Remains*: 17

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This preliminary phone call is to let the police know that a specialist skeletal assessment to determine the approximate date of death which will inform legal jurisdiction. The police may wish to take control of the site at this stage. If not, a forensic or physical anthropologist must be requested to make an on-site assessment of the skeletal remains.

Where it is not immediately obvious that the bones are human (in the majority of cases, illustrated by Figure 2), specialist assessment is required to identify the bones. Photographs of the bones can assist this assessment if they are clear and taken in accordance with guidance provided in Appendix 3. Good photographs often result in the bones being identified by a specialist without requiring a site visit; noting they are nearly always non-human. In these cases, non-human skeletal remains must be treated like any other unexpected archaeological find.

If the bones are identified as human (either by photographs or an on-site inspection) a technical specialist must determine the likely ancestry (Aboriginal or non-Aboriginal) and burial context (archaeological or forensic). This assessment is required to identify the legal regulator of the human remains so **urgent notification** (as below) can occur.

Preliminary telephone or verbal notification by the archaeologist to the Sydney Metro Senior Heritage Advisor is appropriate. This must be followed up later by a formal letter notification to the relevant regulator when a management plan has been developed and agreed to by the relevant parties.

2. Range of human skeletal notification pathways

The following is a summary of the different notification pathways required for human skeletal remains depending on the preliminary skeletal assessment of ancestry and burial context.

A. Human bones are from a recently deceased person (less than 100 years old).

Action

The police must be notified immediately as per the obligations to report a death or suspected death under s35 of the *Coroners Act 2009* (NSW). It should be assumed the police will then take command of the site until otherwise directed.

B. Human bones are archaeological in nature (more than 100 years old) and are likely to be **Aboriginal** remains.

Action

The Department of Planning, Industry and Environment Aboriginal Heritage Section must be notified immediately. The project Aboriginal Cultural Heritage Advisor must contact and inform the relevant Aboriginal community stakeholders who may request to be present on site.

C. Human bones are archaeological in nature (more than 100 years old) and likely to be non-Aboriginal remains.

Action

The Heritage NSW must be notified immediately

Figure 3 summarises the notification pathways on finding bones.

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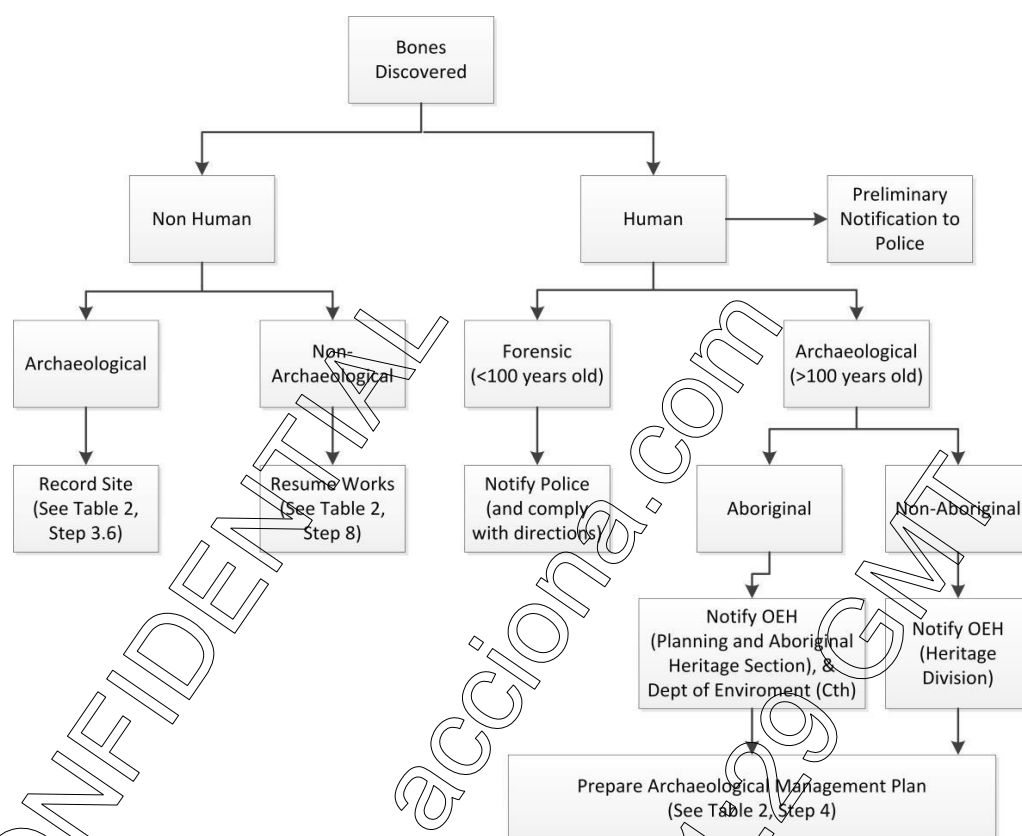


Figure 3 Overview of steps to be undertaken on the discovery of bones

After the appropriate verbal notifications (as described in 2B and 2C above), the Project Manager must proceed through the *Unexpected Heritage Items Exhumation Procedure* (Step 4). It is noted that no *Exhumation Procedure* is required for forensic cases (2A), as all future management is a police matter. Non-human skeletal remains must be treated like any other unexpected archaeological find and so must proceed to record the find.

3. Additional considerations and requirements

Uncovering archaeological human remains must be managed intensively and needs to consider a number of additional specific issues. These issues might include facilitating culturally appropriate processes when dealing with Aboriginal remains (such as repatriation and cultural ceremonies). Project Managers may need to consider overnight site security of any exposed remains and may need to manage the onsite attendance of a number of different external stakeholders during assessment and/or investigation of remains.

Project Managers may also be advised to liaise with local church/religious groups and the media to manage community issues arising from the find. Additional investigations may be required to identify living descendants, particularly if the remains are to be removed and relocated.

If exhumation of the remains (from a formal burial or a vault) is required, Project Managers should also be aware of additional approval requirements under the NSW *Public Health Act 1991*. Specifically, Sydney Metro may be required to apply to the Director General of NSW

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Department of Health for approval to exhume human remains as per Clause 26 of the NSW *Public Health (Disposal of Bodies) Regulation 2002* ⁸.

Further, the exhumation of such remains needs to consider health risks such as infectious disease control, exhumation procedures and reburial approval and registration. Further guidance on this matter can be found at the NSW Department of Health website.

In addition, due to the potential significant statutory and common law controls and prohibitions associated with interfering with a public cemetery, project teams are advised, when works uncover human remains adjacent to cemeteries, to confirm the cemetery's exact boundaries where possible.

⁸ This requirement is in addition to heritage approvals under the *Heritage Act 1977*.

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Appendix 5 - Archaeological/heritage advice checklist

The archaeologist/Aboriginal heritage consultant must advise the Sydney Metro Environment Manager and Senior Heritage Advisor of an appropriate archaeological or heritage management plan as soon as possible after an inspection of the site has been completed. An archaeological or heritage management plan can include a range of activities and processes, which differ depending on the find and its significance.

In discussions with the archaeologist/Aboriginal heritage consultant the following checklist can be used as a prompt to ensure all relevant heritage issues are considered when developing this plan. This will allow the project team to receive clear and full advice to move forward quickly. Archaeological and/or heritage advice on how to proceed can be received in a letter or email outlining all relevant archaeological and/or heritage issues.

	Required	Outcome/notes
Assessment and investigation		
• Assessment of significance	Yes/No	
• Assessment of heritage impact	Yes/No	
• Archaeological excavation	Yes/No	
• Archival photographic recording	Yes/No	
Heritage approvals and notifications		
• AHP, section 140, section 139 exceptions, section 60, exemptions etc.	Yes/No	
• Regulator relics/objects notification	Yes/No	
• Notification to Sydney Trains for s170 heritage conservation register	Yes/No	
• Compliance with CEMP or other project heritage approvals	Yes/No	
Stakeholder consultation		
• Aboriginal stakeholder consultation	Yes/No	
Artefact/heritage item management		
• Retention or conservation strategy (e.g. items may be subject to long conservation and interpretation)	Yes/No	
• Disposal strategy	Yes/No	
• Short term and permanent storage locations (interested third parties should be consulted on this issue).	Yes/No	
• Control Agreement for Aboriginal objects	Yes/No	

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Appendix 6 - Template notification letter

Insert on Sydney Metro letterhead

Select and type date]

[Select and type reference number]

XXX

Heritage NSW/ Department of Planning, Industry and
Environment

xxx

Parramatta NSW 2124

[Select and type salutation and name].

Re: Unexpected heritage item discovered during Sydney Metro activities.

I write to inform you of an unexpected [select: relic, heritage item or Aboriginal object] found during Sydney Metro investigative and construction works at [insert location] on [insert date] in accordance with the notification requirement under select: section 146 of the *Heritage Act 1977* (NSW). [Where the regulator has been informally notified at an earlier date by telephone, this should be referred to here].

NB: On finding Aboriginal human skeletal remains this letter must also be sent to the Commonwealth Minister for the Environment in accordance with notification requirements under section 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Commonwealth).

[Provide a brief overview of the project background and project area. Provide a summary of the description and location of the item, including a map and image where possible. Also include how the project was assessed under the *Environmental Planning and Assessment Act 1979* (NSW) (e.g. Part 5). Also include any project approval number, if available].

Sydney Metro [or contractor] has sought professional archaeological advice regarding the item. A preliminary assessment indicates [provide a summary description and likely significance of the item]. Please find additional information on the site recording form attached.

Based on the preliminary findings, Sydney Metro [or contractor] is proposing [provide a summary of the proposed archaeological/heritage approach (e.g. develop archaeological research design (where relevant), seek heritage approvals, undertake archaeological investigation or conservation/interpretation strategy). Also include preliminary justification of such heritage impact with regard to project design constraints and delivery program].

The proposed approach will be further developed in consultation with a nominated Office of Environment and Heritage staff member.

Should you have any feedback on the proposed approach, or if you require any further information, please do not hesitate to contact [Environment and Planning Project Manager] on (02) XXXX XXXX.

Yours sincerely

[Sender name]

Sydney Metro Director, Environment, Sustainability & Planning

[Attach the archaeological/heritage management plan and site recording form]

APPENDIX G INDICATIVE ENVIRONMENTAL INSPECTION CHECKLIST

APPROVAL

	Prepared By	Reviewed By	Approved By
Name:	Natalie Jongebloed		
Position:	Environmental Consultant		
Date:	08/10/21		

REVISION HISTORY

Rev:	Date:	Pages:	By:	Description:
00	08/10/21	All	NJ	For submission to Sydney Metro

Work Area / Location	Activity
Date of Inspection	Inspected By
Inspection Type (weekly, shutdown, rainfall, other)	
Attendees	
Weather Condition	

Corrective Action Timing	1 (immediate)	2 (within 24 hours)	3 (within 3 working days)	4 (within 5 working days)
---------------------------------	---------------	---------------------	---------------------------	---------------------------

Item	Y/N	Inspection Notes / Observations	Corrective Action	Timing
General				
Are no go zones delineated and is the area well protected in accordance with the ECM?				
All permits in place (ie. pre-clearing, water discharge, OOHV)?				
Soil and Water				
Sediment basins in good working order? ERSO controls installed as per the approved ESCP?				
Holding tanks, ponds, sumps etc are functional and managed to ensure no risk of overtopping?				

Are stockpiles segregated and positioned away from surrounding receivers?

Public roads clean (ie. tracked dirt), loads covered, and haul roads are maintained?

Hazardous storage and refuelling areas are properly managed and maintained (appropriate storage, bunds empty etc)?
Storage area away from watercourse and drainage lines?

Spill kits readily available and suitable for the work area/activity?

Noise and Vibration

Non-tonal reversing system installed?

Plant and machinery turned off when not in use?

Is any noise monitoring being undertaken?

Air Quality

Is visible dust being generated by site work activities, stockpiles, internal roads or exposed surfaces?

Are dust controls in place and being performed regularly enough to be effective?

Is plant and machinery on site producing visible emissions?

Is odour present in proximity of site boundary?

Are areas being revegetated or re-stabilised when not in use?

Are trucks loads covered when entering and exiting the site?

Heritage

Are Heritage items in the immediate vicinity protected?

Have any heritage items been identified/salvaged since the last inspection?

Has damage occurred to any heritage items since the last inspection?

Flora and Fauna

Tree protection zones of retained vegetation have been established? Protection fencing/signage is visible and in good condition.

Are all mobile plant and vehicles free of any mud or organic material, prior to arriving or departing from site?

Are there any weed infestations and are they being managed?

Visual Amenity

Is the project site clean and tidy, equipment and materials secured?

Lighting is orientated away from adjacent sensitive land user/s?

Hoardings are clean and free of dust build up and graffiti?

Signage (project information) is maintained and visible?

Waste Management

Is the site clean and waste bins available?

Any visual evidence of litter on-site?

Are waste materials segregated, classified and disposed of correctly into the "right bin"?
No cross contamination of segregated wastes and recycle bins.

Is wastewater being discharged and is there a water discharge permit?

Previous Actions Follow Up (if any)

Action Summary

Completed by:

Signature

Date: