Appendix D

Environmental Planning and Assessment Regulation 2000, Part 3 of Schedule 2 checklist

CONSTRUCTION ENVIRONMENTAL MANAGEMENT FRAMEWORK

APRIL 2020

Transport for NSW

MAKING IT HAPPEN

Contents

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1. Introduction

1.1 Purpose and Scope

This Construction Environmental Management Framework (CEMF) is a Sydney Metro project framework which sets out the environmental, stakeholder and community management requirements for construction. It provides a linking document between the planning approval documentation and the construction environmental management documentation to be developed by the Principal Contractors relevant to their scope of works.

Sydney Metro Principal Contractors will be required to implement and adhere to the requirements of this CEMF.

1.2 Status

This is a controlled document, please refer to the version register below which is updated as required.

Version	Description	Date
1.0	EIS 1 – Northwest Rail Link	4 April 2012
1.1	EIS 1 Submissions Report – Northwest Rail link	26 July 2012
1.2	EIS 2 and the Rapid Transit Rail Facility (RTRF) – Northwest Rail Link	31 October 2012
1.3	Updated to incorporate all planning approvals, including ECRL conversion Part 5 approvals	11 July 2014
3.0	Updated to encompass the scope of Sydney Metro – Chatswood to Sydenham EIS	16 February 2016
3.1	Updated for - Chatswood to Sydenham Submissions Report and Preferred Infrastructure Report	15 August 2016
3.2	Updated for – Sydenham to Bankstown EIS	25 August 2017
4.0	Updated for inclusion in Sydney Metro West EIS	23 January 2020

1.3 Environment and Sustainability Policy

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.

2. Legislative and Other Requirements

Table 1.1 below 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.

Table 1.1 NSW Legislative Requirements

Legislation and Administering Authority	Requirements	Application to Sydney Metro
Biosecurity Act 2015	Under this Act, all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.	Control weeds as required on land under the management of the Contractor.
Contaminated Land Management Act 1997 NSW Environment Protection Authority (EPA)	The Act provides a process for the investigation and remediation of land where contamination presents a significant risk of harm to human health or some other aspect of the environment. The Act also outlines the circumstances in which notification to the Environment Protection Authority is required in relation to the contamination of land.	Follow the legislative process where contaminated land is identified.
Dangerous Goods (Road and Rail Transport) Act 2008 EPA / SafeWork NSW	A licence is required for the storage (SafeWork NSW) and /or transport (EPA) of prescribed quantities of dangerous goods.	Obtain a licence where storage of dangerous goods would exceed licensable quantities.
Environmental Planning and Assessment Act 1979 Department of Planning and Environment (DPI&E)	Encourages proper environmental impact assessment and management of development areas for the purpose of promoting the social and economic welfare of the community and a better environment.	Adhere to mitigation measures and conditions within the planning approval documentation. The proponent and their contractors must endeavour to deliver in a consistent manner within the assessed scope of works.

Legislation and Administering Authority	Requirements	Application to Sydney Metro
Heritage Act 1977 NSW Department of Premier and Cabinet	The Act aims to encourage the conservation of the State's heritage and provides for the identification and registration of items of State heritage significance. The Heritage Council must be notified 'of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic'.	Projects assessed under Part 5, Division 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act) are exempt from approvals required under Part 4 and permits required under section 139.
Marine Pollution Act 2012	This Act includes provisions to protect the sea and waters from pollution by oil and other noxious substances discharged from vessels.	Any construction activities requiring the use of a vessel (e.g. a barge) must comply with the requirements of this Act and the Marine Pollution Regulation 2014.
National Parks and Wildlife Act 1974 OEH	The objectives of the Act are for the conservation of nature and the conservation of objects, places or features (including biological diversity) of cultural value within the landscape.	Projects assessed under Part 5, Division 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act) are exempt from obtaining an Aboriginal Heritage Impact Permit required under section 90.
Biodiversity Conservation Act 2016 OEH	The relevant purpose of the Act is to conserve biodiversity and maintain the diversity and quality of ecosystems.	Projects assessed under Part 5, Division 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act) are exempt from an order or direction under Part 11 of the Act. The Act also established that other permits and approvals are not required for projects assessed and determined under Part 5, Division 5.2 of the EP&A Act.
Protection of the Environment Operations Act 1997 EPA	The relevant objective of the Act is to prevent environmental pollution.	Where Sydney Metro projects are scheduled activities under Schedule 1 of the Act an Environment Protection Licence (EPL) must be obtained. Further details on the requirements to obtain an EPL are provided in Section 2.3.

Legislation and Administering Authority	Requirements	Application to Sydney Metro
Roads Act 1993 Roads and Maritime Service	The relevant objective of the Act is to regulate the carrying out of various activities on public roads.	Obtain consent under Section 138 for carrying out work in, on or over a public road, or digging up or disturbance of the surface of the road. Under Section 38N of the *Transport Administration Act 1988*, Section 138 of the *Roads Act 1993* does not apply to Sydney Metro activities in relation to classified roads for which a council is the roads authority. However, consent from Transport for New South Wales is still required under Section 38N(2) of the *Transport Administration Act 1988* for those activities described in Section 138(1) of the *Roads Act 1993*, when carried out in relation to a classified road.
Waste Avoidance and Resource Recovery Act 2001 EPA	The objectives of the Act are to reduce environmental harm, provide for the reduction in waste generation and the efficient use of resources.	Implement strategies to reduce waste volumes and report on waste generated.
Water Management Act 2000 NSW Office of Water	The relevant objective of the Act is to protect, enhance and restore water sources, their associated ecosystems, ecological processes and biological diversity and their water quality.	Sydney Metro projects assessed under Part 5, Division 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act) are exempt from obtaining water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91.

Table 1.2 identifies key Commonwealth environmental legislative requirements and their application to SM construction works, current as at the date of this document. Sydney Metro and its Contractors should regularly review their legislative requirements.

Table 1.2 Commonwealth Legislative Requirements

Legislation and Administering Authority	Requirements	Application to Sydney Metro
Environment Protection and Biodiversity Conservation Act 1999 Department of the Environment	The relevant objective of the Act is to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance.	A project may be defined as a controlled action under the Act due to impacts on matters of national environmental significance. If an approval under the Environment Protection and Biodiversity Conservation Act is required for the project, Sydney Metro Principal Contractors must comply with any relevant conditions of the approval.
National Greenhouse and Energy Reporting Act 2007 Department of Climate Change and Energy Efficiency	The Act established a framework for reporting of greenhouse gas emissions, abatement actions, energy consumption and production data.	Report on greenhouse gas and energy usage data as required by the Act.

2.1 Environmental Approvals

All Sydney Metro projects require a planning approval under the *Environmental Planning and Assessment Act 1979*. 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

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 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 Environment Protection Licence Requirements

Sydney Metro projects can meet the definition of a number of scheduled activities under Schedule 1 of the *Protection of the Environmental 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 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.

2.3 Standards and Guidelines

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 1.3.

Table 1.3 Environmental Standards and Guidelines

Standard / Guideline	Relevant Authority	CEMF Reference
ISO14001 Environmental Management System – Requirements with Guidelines for Use	DPIE	Section 3.1
Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009)	EPA	Section 8.2
Managing Urban Stormwater: Soil and Construction (Landcom, 2008)	EPA	Section 12.2
AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting	DPIE	Section 11.2
Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2008)	EPA	Section 14.2
Australian and New Zealand Guidelines for Fresh and Marine Water Quality	ANZECC	Section 12.2

3. Environmental Management Requirements

3.1 Environmental and Sustainability Management System

a. Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2015.

b. Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will:

i. Be consistent with the 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;

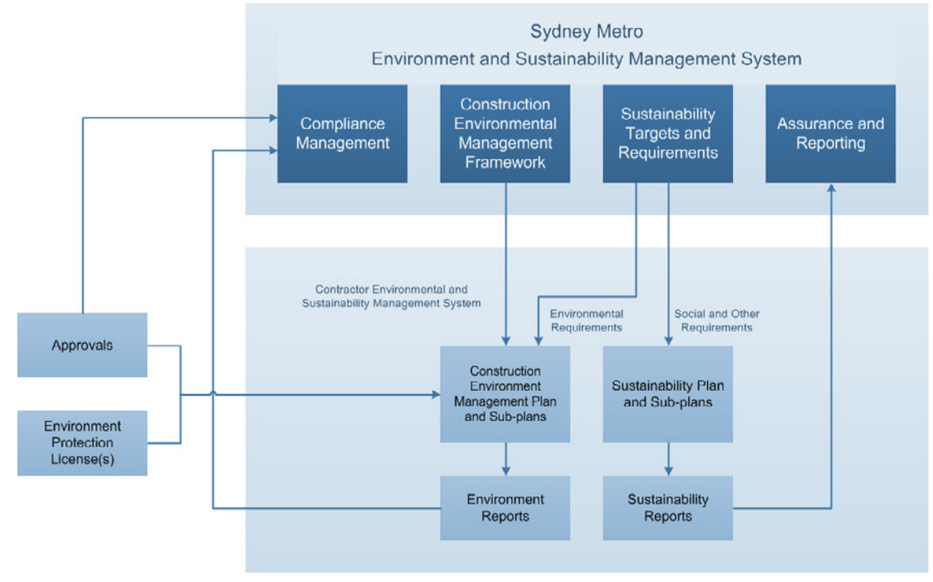
v. Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and

vi. Be consistent with the SM C&SW Sustainability Strategy and Sydney Metro Environment and Sustainability Policy.

c. All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's Environment and Sustainability Management System.

d. The relationship between the Sydney Metro Environment and Sustainability Management System and the Principal Contractor's Environment and Sustainability Management System is shown in Figure 2.

Figure 2 - Environmental Management and Sustainability Structure



3.2 Sustainability Management Plan

a. Principal Contractors are required to prepare and implement a Sustainability Management Plan (SMP) relevant to the scale and nature of the Project Works.

b. The SMP must, as a minimum, address and detail:

Reference	SMP Requirements	Design	Construction
SMP1	The relevant requirements of the Sydney Metro Environment and Sustainability Policy	•	•
SMP2	A sustainability policy statement	•	•
SMP3	The sustainability management team structure, including key personnel authority and roles of key personnel, lines of responsibility and communication, minimum skill levels of each role and interfaces with the overall project organisation structure	•	•
SMP4	How sustainability initiatives will be identified and integrated into the design of the Project Works	•	

Reference	SMP Requirements	Design	Construction
SMP5	The carbon and energy mitigation measures as detailed in the environmental approval documentation that are applicable to the Project Works	•	•
SMP6	The low carbon strategies and initiatives that will be implemented to minimise the carbon emissions	•	•
SMP7	The energy efficiency strategies and initiatives that will be implemented to minimise energy use	•	•
SMP8	Support innovative and cost effective approaches to energy efficiency, low carbon / renewable energy sources and energy procurement	•	•
SMP9	The strategies and initiatives that will be implemented to enhance the biodiversity	•	
SMP10	The processes and methodologies for assurance, monitoring, auditing, corrective action, continuous improvement and reporting on sustainability performance		•
SMP11	Process (or Processes) for compliance record generation and management		•
SMP12	The processes and methodologies which will be used to achieve the required scores under rating systems identified in General Specification Section 11 – Sustainability	•	•
SMP13	The strategy and methodology for incorporating climate change adaption in designs that respond to the climate change risks and baseline adaptation measures allocated to the Project Works	•	
SMP14	The strategies and initiatives that will be implemented to minimise overall water use, maximise the availability and use of non-potable water sources	•	•
SMP15	Estimates of the quantity of potable water which will be consumed during construction	•	
SMP16	Estimates of the quantity of water from non-potable sources which will be consumed during construction	•	
SMP17	The strategy to reduce material use throughout the project life-cycle	•	•
SMP18	The strategies and initiatives that will be implemented to maximise the use of recycled materials	•	•
SMP19	The strategies and initiatives to recycle and reuse materials onsite	•	•
SMP20	The strategies and initiatives to prioritise the use of materials with a lower embodied impact	•	•
SMP21	Estimates of the Portland cement reduction which will be achieved in concrete (averaged across all mixes) compared to a reference case	•	

Reference	SMP Requirements	Design	Construction
SMP22	The strategies and initiatives to prioritise the use of low-VOC, low emission materials	•	•
SMP23	The use of sustainably sourced and certified timber and wood products	•	•
SMP24	The development of a deconstruction plans to enable recycling and reuse at end-of-life	•	
SMP25	Estimates of fuel consumption	•	
SMP26	Estimates of electricity consumption	•	
SMP27	Estimates of 'Scope 1', 'Scope 2', 'Scope 3' and total carbon emissions (Carbon Emission Targets) that incorporates direct and indirect emissions associated with electricity and fuel consumption, on-site process emissions and embodied emissions for all main materials used	•	•
SMP28	Reporting of carbon and energy will be undertaken in accordance with the National Greenhouse and Energy Reporting Act 2007.		•
SMP29	The strategy and initiatives to influence subcontractors and materials suppliers to adopt sustainability objectives in their works and procurement		•
SMP30	A Sustainable Procurement Policy that must, as a minimum, include: ▪ The processes and procedures that will be used to provide environmental and social improvement ▪ The responsibilities of key project personnel with respect to the implementation of the policy ▪ Compliance record generation and management ▪ The processes and environmental and social criteria that will be used for the selection of Subcontractors ▪ The processes that will be used to ensure ethical sourcing of labour and materials ▪ Local sourcing ▪ Where equipment, materials or labour are procured from locations outside Australia, the processes that will be used to ensure human rights impacts and risks are identified and mitigated as well as processes to ensure compliance with modern slavery, and modern slavery reporting		•
SMP31	The retention of records detailing the consideration of sustainability in the procurement of all materials		•

3.3 Construction Workforce Development and Industry Participation Plan

a. The Workforce Development and Industry Participation Plan will address and detail:

i. *The proposed response to policies related to skills, apprenticeships, diversity, small business and Aboriginal Participation which will be delivered on the project*;

ii. *Proposed appropriately skilled key personnel to support delivery of the workforce development and industry participation requirements*;

iii. *Implementation approach, processes and systems to ensure delivery and reporting of workforce development and industry participation priority areas*:

- *Jobs and Industry Participation*;
- *Skills Development*;
- *Diversity and Inclusion*; and
- *Inspiring Future Talent*.

3.4 Construction Environmental Management Plan

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.

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.

c. The CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework.

d. As a minimum the CEMP will:

i. Include a contract specific environmental policy;

ii. Include a description of activities to be undertaken during construction;

iii. For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed;

iv. For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;

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;

vi. Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP;

vii. Identify communication requirements, including liaison with stakeholders and the community;

viii. Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.10(b);

ix. Management strategies for environmental compliance and review of the performance of environmental controls;

x. Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;

xi. Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;

xii. Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and

xiii. Include procedures for the control of environmental records.

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).

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.

3.5 Construction Environmental Management Sub-Plans

a. Subject to Section 3.4(b) the Principal Contractor will prepare issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include:

i. Spoil management;

ii. Groundwater management;

iii. Noise and vibration management;

iv. Heritage management;

v. Flora and fauna management;

vi. Visual amenity management;

vii. Soil and water management;

viii. Air quality management; and

ix. Waste management.

b. Additional detail on the minimum requirements for these sub plans is provided in Sections 6-17 of this CEMF.

3.6 Environmental Procedures and Control Maps

a. The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should supplement environmental management sub plans, but may substitute for sub plans in agreement with Sydney Metro if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.

b. The procedures will include:

i. A breakdown of the work tasks relevant to the specific activity and indicate responsibility for each task;

ii. Potential impacts associated with each task;

iii. A risk rating for each of the identified potential impacts;

iv. Mitigation measures relevant to each of the work tasks; and

v. Responsibility to ensure the implementation of the mitigation measures.

c. 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

vii. Be communicated to relevant workers, including sign-off for the appropriate procedures prior to commencing works on the specific site and / or activity.

3.7 Additional Environmental Assessments

a. 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).

3.8 Condition Surveys

a. Prior to the commencement of construction the Principal Contractors are to offer Pre-construction Building Condition Surveys, in writing, to the owners of buildings where there is a potential for construction activities to cause damage regardless of severity. If accepted, the Principal Contractor will produce a comprehensive written and photographic condition report produced by an appropriate professional prior to relevant works commencing.

b. Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles. Dilapidation reports are to include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths.

3.9 Register of Hold Points

a. Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. These hold points will be documented in relevant CEMP or relevant sub-plans. Example activities include vegetation removal and water discharge.

b. Table 1.4 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.

Table 1.4 Initial Register of Hold Points

Hold Point	Release of Hold Point	By Who
Prior to Vegetation Clearing / Ground Disturbance	Pre-clearing inspection Erosion and sediment control plan	Qualified Ecologist Contractor's Environmental Manager or delegate
Discharge of water	Water tested to verify compliance and approval to discharge	Contractor's Environment Manager or delegate
Out of hours works	Noise Assessment	Contractor's Environment Manager
Use of local roads by heavy vehicles	Road Dilapidation Report	Appropriate Professional nominated by Principal Contractor
Construction identified as affecting buildings	Building Condition Survey	Appropriate Professional nominated by Principal Contractor

3.10 Training, Awareness and Competence

a. Principal Contractors are responsible for determining the training needs of their personnel. As a minimum this will include site induction, regular toolbox talks and topic specific environmental training as follows:

i. The site induction will be provided to all site personnel and will include, as a minimum:

- Training purpose, objectives and key issues;
- Contractor's environmental and sustainability policy(s) and key performance indicators;

- Due diligence, duty of care and responsibilities;
- Relevant conditions of any environmental licence and/or the relevant conditions of approval;
- Site specific issues and controls including those described in the environmental procedures;
- Reporting procedure(s) for environmental hazards and incidents; and
- Communication 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).

b. Principal Contractors will conduct a Training Needs Analysis which:

i. Identifies that all staff are to receive environmental training;

ii. Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans;

iii. Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements; and

iv. Implements and documents as part of the CEMP a training schedule that plans attendance at environmental training events, provides mechanisms to notify staff of their training requirements, and identifies staff who do not attend scheduled training events or who have overdue training requirements.

3.11 Emergency and Incident Response

a. 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.

b. The Contractor will make all personnel aware of the plan and their responsibilities.

3.12 Independent Environmental Representatives

a. Sydney Metro will engage Independent Environmental Representatives (ERs) as required under the CSSI approval to undertake the following, along with any additional roles as required:

i. Review, provide comment on and endorse (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation, planning approval conditions, Environment Protection Licences, relevant standards and this CEMF;

ii. Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation;

iii. Provide independent guidance and advice to Sydney Metro and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions;

iv. Be the principal point of advice for the DP&E in relation to all questions and complaints concerning the environmental performance of the project;

v. Ensure that environmental auditing is undertaken in accordance with all relevant project requirements; and

vi. Recommend reasonable steps, including 'stop works', to be taken to avoid or minimise adverse environmental impacts.

3.13 Roles and Responsibilities

a. In relation to Roles and Responsibilities the CEMP will:

i. Describe the relationship between the Principal Contractor, Sydney Metro, key regulatory stakeholders, the independent environmental representative and the independent certifier;

ii. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure;

iii. Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work; and

iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders.

b. All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.

3.14 Environmental Monitoring, Inspections and Auditing

a. Issue specific environmental monitoring will be undertaken as required or as additionally required by any approval, permit or licence conditions.

b. 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.

c. 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.

d. Regular site inspections by the ERs and Sydney Metro representatives at a frequency to be agreed with the Principal Contractor.

e. Principal Contractors must undertake internal environmental audits. The scope will include:

i. Compliance with any approval, permit or licence conditions;

ii. Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures;

iii. Community consultation and complaint response;

iv. Environmental training records; and

v. Environmental monitoring and inspection results.

f. Sydney Metro (or an independent environmental auditor) will also undertake periodic audits of the Principal Contractor's E&SMS, including this Construction Environmental Management Framework.

3.15 Environmental Non-compliances

a. 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.

b. 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.

c. 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.

3.16 Environmental Records and Compliance Reporting

a. Principal Contractors will maintain appropriate records of the following:

i. Site inspections, audits, monitoring, reviews or remedial actions;

ii. Documentation as required by performance conditions, approvals, licences and legislation;

iii. Modifications to site environmental documentation (eg CEMP, sub-plans and procedures); and

iv. Other records as required by this Construction Environmental Management Framework.

b. Records must be accessible onsite for the duration of works.

c. 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.

d. 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.

3.17 Review and Improvement of the Environment and Sustainability Management System

a. 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.

b. 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.

4. Stakeholder and Community Involvement

4.1 Overview

a. 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.

b. 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.

4.2 Community Communication Strategy

a. A Community Communication Strategy will be developed by each Sydney Metro Principal Contractor.

b. Key elements of the Community Communication Strategy, which will be implemented at appropriate times in the construction process, will include:

i. Notification (including targeted letterbox drops and email) of any works that may disturb local residents and businesses (such as noisy activities and night works) at least seven days prior to those works commencing;

ii. Notification (including targeted letterbox drops and email) of works that may affect transport (such as road closures, changes to pedestrian routes and changes to bus stops);

iii. Traffic alerts (via email) to all key traffic and transport stakeholders advising of any changes to access and local traffic arrangements (at least seven days prior to significant events);

iv. Print and radio advertisements regarding major traffic changes;

v. 24-hour toll-free community project information phone line;

vi. Complaints management process;

vii. Community information sessions, as required;

viii. Regular updates to the Sydney Metro website (sydneymetro.info), including uploading of all relevant documents, and contact details for the stakeholder and community relations team;

ix. Provision of information to the Sydney Metro Community Information Centre including community newsletters, information brochures and fact sheets and interactive web-based activities;

x. Clear signage at the construction sites;

xi. Regular newspaper advertisements in local and metropolitan papers;

xii. Regular inter-agency group meetings;

xiii. Community, business and stakeholder satisfaction surveys and feedback forms;

xiv. Translator and interpreter services; and

xv. The Principal Contractor's Community Relations Team will liaise with the Sydney Metro Project Communications team as the point of contact for the community.

4.3 Complaint Handling

a. Community liaison and complaints handling will be undertaken in accordance with the Construction Complaints Management System and will include:

i. Principal Contractors will deal with complaints in a responsive manner so that stakeholders' concerns are managed effectively and promptly; and

ii. A verbal response will be provided to the complainant as soon as possible and within a maximum of two hours from the time of the complaint (unless the complainant requests otherwise). A detailed written response will then be provided, if required, to the complainant within one week.

4.4 Urban Design of Temporary Works

a. Principal Contractors will ensure as a minimum:

i. Temporary construction works consider urban design and visual impacts, including:

- Artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations;
- Project information to raise awareness on benefits, explain the proposed works at each site and provide updates on construction progress;
- Community information, including contact numbers for enquiries / complaints;
- Signage and information to mitigate impacts on local businesses which may be obscured by the construction site;
- Sydney Metro advertising / public awareness campaigns; and
- Logos / branding, including Sydney Metro, NSW Government, and Contractor branding.

ii. The design of all temporary works will require Sydney Metro approval in relation to urban design and visual impacts and Sydney Metro will stipulate the design of hording artwork, including:

- Sydney Metro advertising / public awareness campaigns; and
- Logos / branding, including Sydney Metro, NSW Government, and Contractor branding.

b. Construction hoardings, scaffolding and acoustic sheds will be regularly inspected and kept clean and free of dust build up. Graffiti on construction hoardings, scaffolding or acoustic sheds will be removed or painted over promptly.

c. The principles of Crime Prevention Through Environmental Design will be applied to all works, including temporary works, that have a public interface.

4.5 Business and Property Impacts

a. Principal Contractors will proactively work with potentially affected stakeholders to identify the likely impacts and put in place measures to minimise impacts.

b. Construction works will be undertaken to meet the following objectives:

i. Minimise the potential impact of the project to businesses affected by construction works;

ii. Ensure businesses are kept informed of the project and consulted in advance of major works or factors that are likely to have a direct impact;

iii. Consult with all business directly affected by changes to access arrangements regarding specific requirements at least two weeks prior to those changes coming into effect; and

iv. Ensure that business stakeholder enquiries and complaints regarding the project are managed and resolved effectively.

c. Principal Contractors will document in the Community Communication Strategy (Section 4.2) key issues relating to business impacts by locality with a particular focus on proactive consultation with affected businesses. Including:

i. Identification of specific businesses which are sensitive to construction activity disturbances;

ii. Summary of the commercial character of the locality, its general trading profile (daily and annually) and information gained from the business profiling such as:

- Operating hours;
- Main delivery times;
- Reliance on foot traffic;
- Any signage or advertising that may be impacted;
- Customer origin; and
- Other information specific to the business that will need to be considered in construction planning.

iii. Define the roles and responsibilities in relation to the control and monitoring of business disturbances;

iv. Identification of locality specific standard business mitigation measures which would be implemented;

v. Maps and diagrams to illustrate the information for easy identification of measures which would be implemented;

vi. Description of the monitoring, auditing and reporting procedures;

vii. Procedure for reviewing performance and implementing corrective actions;

viii. Description of the complaints handling process; and

ix. Procedure for community consultation and liaison.

5. General Site Works

Figure 3 - Aerial View of the Sydney Metro Norwest Station Site

5.1 Working Hours

a. Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.

b. Works which can be undertaken outside of standard construction hours without any further approval include:

i. Those which have been described in respective environmental assessments as being required to take place 24/7. For example, tunnelling and underground excavations and supporting activities will be required 24/7;

ii. Works which are determined to comply with the relevant Noise Management Level at sensitive receivers;

iii. The delivery of materials outside of approved hours as required by the Police or other authorities (including 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.

c. Principal Contractors may apply for EPA approval to undertake works outside of normal working hours under their respective Environment Protection Licences.

5.2 Construction Traffic Management

a. The management of traffic impacts due to construction is addressed in the Construction Traffic Management Framework (CTMF) which sets out system requirements for management plans and other associated documentation. Requirements in the CTMF must be followed by Principal Contractors.

b. The Construction Traffic Management Framework (CTMF) sets out the approach to managing traffic impacts during the construction of the Sydney Metro projects. The CTMF also outlines contractor requirements, with reference to third party agreements. Principal Contractors are required to produce these documents in accordance with the CTMF.

5.3 Site Layout

a. Principal Contractors will consider the following in the layout of construction sites:

i. The location of noise intensive works and 24 hour activities in relation to noise sensitive receivers;

ii. The location of site access and egress points in relation to noise and light sensitive receivers, especially for sites proposed to be utilised 24 hours per day;

iii. The use of site buildings to shield noisy activities from receivers;

iv. The use of noise barriers and / or acoustic sheds where feasible and reasonable for sites proposed to be regularly used outside of daytime hours;

v. Aim to minimise the requirement for reversing, especially of heavy vehicles; and

vi. Any applicable requirements of the Construction Traffic Management Framework (CTMF).

5.4 Reinstatement

a. 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.

6. Spoil Management

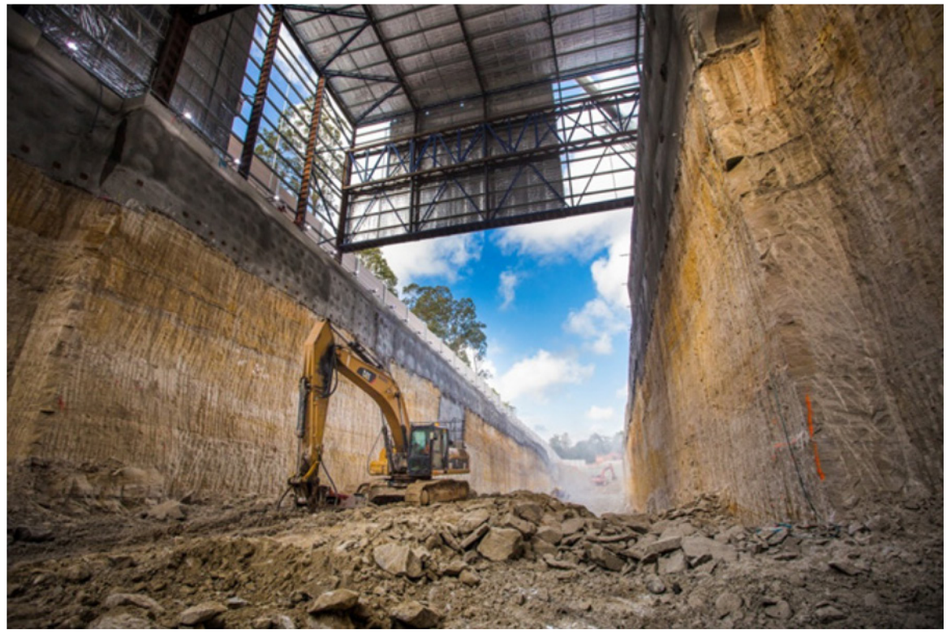


Figure 4 - Spoil and Excavation Works at the Showground Station Site

6.1 Spoil Management Objectives

a. The following spoil management objectives will apply to the construction of the project:

i. Minimise spoil generation where possible;

ii. The project will mandate 100% reuse or recycling (on or off-site) of usable spoil;

iii. Spoil will be managed with consideration to minimising adverse traffic and transport related issues;

iv. Spoil will be managed to avoid contamination of land or water;

v. Spoil will be managed with consideration of the impacts on residents and other sensitive receivers; and

vi. Site contamination will be effectively managed to limit the potential risk to human health and the environment.

6.2 Spoil Management Implementation

a. Principal Contractors will develop and implement a Spoil Management Plan for their scope of works. The Spoil Management Plan will include as a minimum:

i. The spoil mitigation measures as detailed in the environmental approval documentation;

ii. The responsibilities of key project personnel with respect to the implementation of the plan;

iii. Procedures and methodologies for the haulage and disposal locations, storage and stockpiling arrangements, including those for virgin excavated natural material, contaminated and unsuitable material;

iv. Procedures for the testing, excavation, classification, handling and reuse of spoil;

v. measures that will be implemented to both reduce spoil quantities and maximise the beneficial reuse of spoil which will be generated during the performance of the TSE Contractor's Activities, including how spoil generation is minimised through the design development process;

vi. Details, links or references to where traffic movements in relation to spoil are described, and measures that will be implemented to minimise traffic and noise impacts associated with haulage and disposal of spoil;

vii. quantities for reuse of spoil within the Construction Site, for beneficial reuse of spoil off site and for spoil disposal;

viii. Processes and procedures for the management of the environmental and social impacts of spoil transfer and reuse;

ix. A register of spoil receipt sites that includes the site or project name, location, capacity, site owner and which tier the site is classified as under the spoil reuse hierarchy;

x. Spoil management monitoring requirements; and

xi. Compliance record generation and management.

b. Spoil management measures will be included in regular inspections undertaken by the Contractor, and compliance records will be retained. These will include:

i. Records detailing the beneficial re-use of spoil either within the project or at off-site locations; and

ii. Waste dockets for any spoil disposed of to landfill sites.

6.3 Spoil Mitigation

a. Examples of spoil mitigation measures include:

i. Implementing the spoil re-use hierarchy;

ii. Handling spoil to minimise potential for air or water pollution; and

iii. Minimise traffic impacts associated with spoil removal.

7. Groundwater Management

7.1 Groundwater Management Objectives

a. 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.

7.2 Groundwater Management Implementation

a. The following content may be provided within other sub plans such as the Soil and Water Management Plan and Flora and Fauna Management Plan.

b. Principal Contractors will develop and implement a Groundwater Management Plan for their scope of works. The Groundwater Management Plan will include as a minimum:

i. The groundwater mitigation measures as detailed in the environmental approval documentation;

ii. The requirements of any applicable licence conditions;

iii. Details of proposed extraction, use and disposal of groundwater, and measures to mitigate potential impacts to groundwater sources, incorporating monitoring, impact trigger definition and response actions for all groundwater sources potentially impacted by the SSI;

iv. Evidence of consultation with relevant government agencies;

v. The responsibilities of key project personnel with respect to the implementation of the plan;

vi. Procedures for the treatment, testing and discharge of groundwater from the site;

vii. Compliance record generation and management; and

viii. Details of groundwater monitoring if required.

7.3 Groundwater Mitigation

a. Examples of groundwater mitigation measures include:

i. Implementing all feasible and reasonable measures to limit groundwater inflows to stations and crossovers; and

ii. Undertaking groundwater monitoring during construction (levels and quality) in areas identified as 'likely' and 'potential' groundwater dependent ecosystems.

8. Construction Noise and Vibration Management

Figure 6 - Hebel Wall Noise Barrier at the Cheltenham Services Facility Site

8.1 Construction Noise and Vibration Management Objectives

a. The following noise and vibration management objectives will apply to construction:

i. Minimise unreasonable noise and vibration impacts on residents and businesses;

ii. Avoid structural damage to buildings or heritage items as a result of construction vibration;

iii. Undertake active community consultation; and

iv. Maintain positive, cooperative relationships with schools, childcare centres, local residents and building owners.

8.2 Construction Noise and Vibration Management Implementation

a. Principal Contractors will develop and implement a Construction Noise and Vibration Management Plan for their scope of works consistent with the Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009). The Construction Noise and Vibration Management Plan will include as a minimum:

i. Identification of work areas, site compounds and access points;

ii. Identification of sensitive receivers and relevant construction noise and vibration goals;

iii. Be consistent with, and include the requirements of the noise and vibration mitigation measures as detailed in, the environmental approval documentation and the Sydney Metro Construction Noise and Vibration Strategy (CNVS);

iv. Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities (based on representative construction scenarios) that have the potential to generate noise or vibration impacts on surrounding sensitive receivers, in particular residential areas;

v. Identification of feasible and reasonable procedures and mitigation measures to ensure relevant vibrations and blasting criteria are achieved, including a suitable blast program;

vi. Community consultation requirements and Community notification provisions specifically in relation to blasting;

vii. The requirements of any applicable licence or approval (for example EPL);

viii. Additional requirements in relation to activities undertaken 24 hours of the day, 7 days per week;

ix. Pre-construction compliance requirements and hold points;

x. The responsibilities of key project personnel with respect to the implementation of the plan;

xi. Noise monitoring requirements;

xii. Compliance record generation and management; and

xiii. An Out of Hours Works Protocol applicable to all construction methods and sites.

b. Detailed Construction Noise and Vibration Impact Statements will be prepared for noise-intensive construction sites and or activities, to ensure the adequacy of the noise and vibration mitigation measures. Specifically, Construction Noise and Vibration Impact Statements will be prepared for works proposed to be undertaken outside of standard construction hours and to support applications to undertake out of hours works (this includes variations of EPL's and applications to relevant agencies).

c. Noise and vibration monitoring would be undertaken for construction as specified in the CNVS.

d. The following compliance records would be kept by Principal Contractors:

i. Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria; and

ii. Records of community enquiries and complaints, and the Contractor's response.

8.3 Construction Noise and Vibration Mitigation

a. All feasible and reasonable mitigation measures would be implemented in accordance with the CNVS. Examples of noise and vibration mitigation measures include:

i. Construction hours will be in accordance with the working hours specified in Section 5.1;

ii. Hoarding and enclosures will be implemented where required to minimise airborne noise impacts; and

iii. The layout of construction sites will aim to minimise airborne noise impacts to surrounding receivers.

9. Heritage Management

Figure 7 –White Hart Inn Excavation Site

9.1 Heritage Management Objectives

a. The following heritage management objectives will apply to construction:

i. Embed significant heritage values through any architectural design, education or physical interpretation;

ii. Minimise impacts on items or places of heritage value;

iii. Avoid accidental impacts on heritage items; and

iv. Maximise worker's awareness of indigenous and non-indigenous heritage.

9.2 Heritage Management Implementation

a. Principal Contractors will develop and implement a Heritage Management Plan which will include as a minimum:

i. Evidence of consultation with Registered Aboriginal Parties and the NSW Heritage Council;

ii. Identify initiatives that will be implemented for the enhancement of heritage values and minimisation of heritage impacts, including procedures and processes that will be used to implement and document heritage management initiatives;

iii. The heritage mitigation measures as detailed in the environmental approval documentation;

iv. The responsibilities of key project personnel with respect to the implementation of the plan;

v. Procedures for interpretation of heritage values uncovered through salvage or excavation during detailed design;

vi. Procedures for undertaking salvage or excavation of heritage relics or sites (where relevant), consistent with and any recordings of heritage relics prior to works commencing that would affect them;

vii. Details for the short and / or long term management of artefacts or movable heritage;

viii. Details of management measures to be implemented to prevent and minimise impacts on heritage items (including further heritage investigations, archival recordings and/or measures to protect unaffected sites during construction works in the vicinity);

ix. Procedures for unexpected heritage finds, including procedures for dealing with human remains;

x. Heritage monitoring requirements; and

xi. Compliance record generation and management.

b. The Contractor's regular inspections will include checking of heritage mitigation measures.

c. Compliance records will be retained by the Contractor. These will include:

i. Inspections undertaken in relation to heritage management measures;

ii. Archival recordings undertaken of any heritage item;

iii. Unexpected finds and stop work orders; and

iv. Records of any impacts avoided or minimised through design or construction methods.

9.3 Heritage Mitigation

a. Examples of heritage mitigation measures include:

i. Induction courses for site workers will include training in the identification of Aboriginal artefacts and management of Aboriginal heritage values.

ii. Any heritage item not affected by the works will be retained and protected throughout construction;

iii. During construction undertake professional archaeological investigation, excavation, and reporting of any historical Indigenous heritage sites of state significance which will be affected. Reporting may be completed as construction progresses;

iv. Undertake archival recordings of all non-Indigenous heritage items affected by the works prior to commencement of works; and

v. Implement unexpected heritage find procedures for Indigenous and non-Indigenous heritage items.

10. Flora and Fauna Management

Figure 8 - Demarcation of Retained Flora

10.1 Flora and Fauna Management Objectives

a. The following flora and fauna management objectives will apply to construction:

i. Minimise impacts on flora and fauna;

ii. Design waterway modifications and crossings to incorporate best practice principles;

iii. Retain and enhance existing flora and fauna habitat wherever possible; and

iv. Appropriately manage the spread of weeds and plant pathogens.

10.2 Flora and Fauna Management Implementation

a. Principal Contractors will develop and implement a Flora and Fauna Management Plan which will include as a minimum:

i. The ecological mitigation measures as detailed in the environmental approval documentation;

ii. The responsibilities of key project personnel with respect to the implementation of the plan;

iii. Procedures for the clearing of vegetation and the relocation of flora and fauna;

iv. Details on the locations, monitoring program and use of nest boxes by fauna;

v. Procedures for the demarcation and protection of retained vegetation, including all vegetation outside and adjacent to the construction footprint;

vi. Plans for impacted and adjoining areas showing vegetation communities; important flora and fauna habitat areas; locations where threatened species, populations or ecological communities have been recorded;

vii. Vegetation management plan(s) for sites where native vegetation is proposed to be retained;

viii. Identification of measures to reduce disturbance to sensitive fauna;

ix. Rehabilitation details, including identification of flora species and sources, and measures for the management and maintenance of rehabilitated areas (including duration of the implementation of such measures);

x. Weed management measures focusing on early identification of invasive weeds and effective management controls;

xi. A procedure for dealing with unexpected EEC threatened species identified during construction, including cessation of work and notification of the Department, determination of appropriate mitigation measures in consultation with the OEH (including relevant relocation measures) and updating of ecological monitoring or off-set requirements;

xii. Details on the methodology for vegetation mapping and survey;

xiii. Ecological monitoring requirements; and

xiv. Compliance record generation and management.

b. Principal Contractors would undertake the following ecological monitoring as a minimum:

i. A pre-clearing inspection will be undertaken prior to any native vegetation clearing by a suitable qualified ecologist and the Contractor's Environmental Manager (or delegate). The pre-clearing inspection will include, as a minimum:

- Identification of hollow bearing trees or other habitat features;
- Identification of any threatened flora and fauna;
- A check on the physical demarcation of the limit of clearing;
- An approved erosion and sediment control plan for the worksite; and
- The completion of any other pre-clearing requirements required by any project approvals, permits or licences.

ii. The completion of the pre-clearing inspection will form a HOLD POINT requiring sign-off from the Contractor's Environmental Manager (or delegate) and a qualified ecologist; and

iii. A post clearance report, including any relevant Geographical Information System files, will be produced that validates the type and area of vegetation cleared including confirmation of the number of hollows impacted and the corresponding nest box requirements to offset these impacts.

c. The Principal Contractor's regular inspections will include a check on the ecological mitigation measures and project boundary fencing.

d. 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.

10.3 Flora and Fauna Mitigation

a. Examples of flora and fauna mitigation measures include:

i. Areas to be retained and adjacent habitat areas will be fenced off prior to works to prevent damage or accidental over clearing;

ii. Clearing will follow a two-stage process as follows:

- Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and
- Habitat trees will be cleared no sooner than 48 hours after non-habitat trees have been cleared. A suitably qualified ecologist will be present on site during the clearing of habitat trees. Felled habitat trees will be left on the ground for 24 hours or inspected by the ecologist prior to further processing.

iii. Weed management is to be undertaken in areas affected by construction prior to any clearing works in accordance with the Noxious Weeds Act 1993.

11. Visual Amenity Management

11.1 Visual Amenity Management Objectives

a. 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.

11.2 Visual Amenity Management Implementation

a. Principal Contractors will develop and implement a Visual Amenity Management Plan for temporary works which will include as a minimum:

i. The visual mitigation measures as detailed in the environmental approval documentation for construction;

ii. Input from an experienced Landscape or Urban Designer;

iii. The maintenance of outward facing elements of site hoarding or noise barriers, including the removal of graffiti and weeds;

iv. Apply the principles of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant safety design requirements and detail mitigation measures to minimise lighting impacts on sensitive receivers for all permanent, temporary and mobile light sources;

v. Identify the processes and procedures that will be used for the incorporation of the principles of Crime Prevention Through Environmental Design (CPTED) in the design and construction of any temporary site facilities; and

vi. Compliance record generation and management.

b. Visual and landscape measures will be incorporated into the Principal Contractor's regular inspections including checking the health of retained vegetation around site boundaries, checking the condition of any site hoarding and acoustic sheds, and checking the position and direction of any sight lighting.

c. The Contractor will retain compliance records of any inspections undertaken in relation to visual and landscape measures.

11.3 Visual Amenity Mitigation

a. Examples of visual amenity mitigation measures include:

i. Wherever feasible and reasonable, vegetation around the perimeter of the construction sites will be maintained;

ii. Temporary construction works will be designed with consideration of urban design and visual amenity as per Section 4.4; and

iii. Temporary site lighting, for security purposes or night works will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting.

12. Soil and Water Management

Figure 10 - Erosion and Sediment Controls at the Cudgegong Rd Site

12.1 Soil and Water Management Objectives

a. 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.

12.2 Soil and Water Implementation

a. Principal Contractors will develop and implement a Soil and Water Management Plan for their scope of works. The Soil and Water Management Plan will include as a minimum:

i. The surface water and flooding mitigation measures as detailed in the environmental approval documentation;

ii. Details of construction activities and their locations, which have the potential to impact on water courses, storage facilities, stormwater flows, and groundwater;

iii. Surface water and ground water impact assessment criteria consistent with the principles of the Australian and New Zealand Environment Conservation Council (ANZECC) guidelines;

iv. Management measures to be used to minimise surface and groundwater impacts, including identification of water treatment measures and discharge points, details of how spoil and fill material required by the project will be sourced, handled, stockpiled, reused and managed; erosion and sediment control measures; salinity control measures and the consideration of flood events;

v. A contingency plan, consistent with the NSW Acid Sulphate Soils Manual (EPA 1998), to deal with the unexpected discovery of actual or potential acid sulphate soils, including procedures for the investigation, handling, treatment and management of such soils and water seepage;

vi. Management measures for contaminated material (soils, water and building materials) and a contingency plan to be implemented in the case of unanticipated discovery of contaminated material, including asbestos, during construction;

vii. A description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be undertaken, the locations where monitoring would take place, how the results of the monitoring would be recorded and reported, and, if any exceedance of the criteria is detected how any non-compliance can be rectified;

viii. The requirements of any applicable licence conditions;

ix. The responsibilities of key project personnel with respect to the implementation of the plan;

x. Procedures for the development and implementation of Progressive Erosion and Sediment Control Plans;

xi. Identification of locations where site specific Stormwater and Flooding Management Plans are required; and

xii. Compliance record generation and management.

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

c. ESCPs will detail all required erosion and sediment control measures for the particular site at the particular point in time and be progressively updated to reflect the current site conditions. Any amendments to the ESCP will be approved by the Contractor’s Environmental Manager (or delegate).

d. Principal Contractors will develop and implement Stormwater and Flooding Management Plans for the relevant construction sites. These plans will identify the appropriate design standard for flood mitigation based on the duration of construction, proposed activities and flood risks. The plan will develop procedures to ensure that threats to human safety and damage to infrastructure are not exacerbated during the construction period.

e. Principal Contractors will undertake the following soil and water monitoring as a minimum:

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.

f. 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.

g. 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.

12.3 Soil and Water Mitigation

a. Examples of surface water and flooding mitigation measures include:

i. Clean water will be diverted around disturbed site areas, stockpiles and contaminated areas;

ii. Control measures will be installed downstream of works, stockpiles and other disturbed areas;

iii. Exposed surfaces will be minimised, and stabilised / revegetated as soon feasible and reasonable upon completion of construction;

iv. Dangerous good and hazardous materials storage will be within bunded areas with a capacity of 110 per cent of the maximum single stored volume;

v. Chemicals will be stored and handled in accordance with relevant Australian standards such as:

- AS 1940-2004 The storage and handling of flammable and combustible liquids
- AS/NZS 4452:1997 The storage and handling of toxic substances
- AS/NZS 5026:2012 The storage and handling of Class 4 dangerous goods
- AS/NZS 1547:2012 On-site domestic wastewater management

vi. Spill kits will be provided at the batch plants, storage areas and main work sites;

vii. A protocol will be developed and implemented to respond to and remedy leaks or spills.

viii. A remedial action plan and unexpected finds protocol would be established to facilitate the quarantining, isolation and remediation of contamination identified throughout the construction programme. Any asbestos identified on site would be managed in accordance with applicable regulatory requirements.

13. Air Quality

Figure 11 - Dust Mitigation at Norwest Station Site

13.1 Air Quality Management Objectives

a. 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

ii. Identify and control potential dust and air pollutant sources.

13.2 Air Quality Management Implementation

a. Principal Contractors will develop and implement an Air Quality Management Plan which will include, as a minimum:

i. The air quality mitigation measures as detailed in the environmental approval documentation;

ii. The requirements of any approval and applicable licence conditions;

iii. Site plans or maps indicating locations of sensitive receivers and key air quality / dust controls;

iv. The responsibilities of key project personnel with respect to the implementation of the plan;

v. Air quality and dust monitoring requirements; and

vi. Compliance record generation and management.

b. Air quality and dust monitoring will involve the following as a minimum:

i. Meteorological conditions will be monitored and appropriate responses will be organised and undertaken periodically by the Principal Contractor;

ii. Regular visual monitoring of dust generation from work zones; and

iii. Monitoring emissions from plant and construction vehicles to ensure they have appropriate emission controls and are being maintained correctly.

c. The following compliance records will be kept by the Principal Contractor:

i. Records of any meteorological condition monitoring;

ii. Records of any management measures implemented as a result of adverse, windy weather conditions; and

iii. Records of air quality and dust inspections undertaken.

13.3 Air Quality Mitigation

a. Examples of air quality mitigation measures include:

i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes;

ii. Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce wind-blown dust emissions;

iii. Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate; and

iv. Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure.

14. Waste Management

14.1 Waste Objectives

a. 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.

b. Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by the Principal Contractor.

14.2 Waste Implementation

a. Principal Contractors will develop and implement a Waste Management Plan which will include as a minimum:

i. The waste management mitigation measures as detailed in the environmental approval documentation;

ii. The responsibilities of key project personnel with respect to the implementation of the plan;

iii. Waste management monitoring requirements;

iv. A procedure for the assessment, classification, management and disposal of waste in accordance with Waste Classification Guidelines; and

v. Compliance record generation and management.

b. 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.

c. Principal Contractors will report all necessary waste and purchasing information to Sydney Metro as required for Sydney Metro to fulfil their WRAPP reporting requirements.

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

14.3 Waste Mitigation

a. Examples of waste management mitigation measures include:

i. All waste materials removed from the sites will be directed to an appropriately licensed waste management facility;

ii. The use of raw materials (noise hoarding, site fencing, etc...) will be reused or shared, between sites and between construction contractors where feasible and reasonable; and

iii. Recyclable wastes, including paper at site offices, will be stored separately from other wastes.

15. Acronyms

Acronym	
CEMP	Construction Environmental Management Plan
CNVS	Construction Noise and Vibration Strategy
DP&E	Department of Planning and Environment (Formerly Department of Planning and Infrastructure)
EIS	Environmental Impact Statement
EMF	Environmental Management Framework
EMS	Environmental Management System
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EPL	Environment Protection Licence (issued by EPA under the POEO Act)
ER	Environmental Representative
ESCP	Erosion and Sediment Control Plan
NOHSC	National Occupational Health and Safety Commission
OEH	Office of Environment and Heritage (Formerly DECCW)
POEO Act	Protection of the Environment Operation Act 1997
RMS	Roads and Maritime Service (Formerly RTA)
TBM	Tunnel Boring Machine
TfNSW	Transport for NSW

Appendix A – Environment and Sustainability Policy

NSW GOVERNMENT

Transport Environment and Sustainability Policy

Transport is a key enabler of economic and social activity. We are committed to delivering transport which contributes to economic prosperity and social inclusion in an environmentally responsible and sustainable manner, consistent with the Future Transport Strategy 2056.

Transport for NSW's activities cover the whole State and its infrastructure will last for generations to come. We have a duty to undertake our activities in the interest of the greater good, moving beyond compliance, and being a genuine leader in environment and sustainability performance.

We will work towards achieving this for NSW by:

- Leadership – contributing to and influencing the strategic environment and sustainability agenda of the NSW Government
- Environmental protection – being accountable for addressing and minimising the environmental impacts of our activities to satisfy the expectations and legislative requirements of the NSW Government and community
- Energy and carbon – improving energy efficiency and working towards net zero carbon emissions
- Resilience – embedding climate risk and resilience considerations in our activities
- Sustainable procurement – procuring and delivering sustainable, efficient and cost effective transport options, including responsible supply chains
- Whole of life – considering whole of life benefits and impacts from our activities across all life cycle stages - demand/need, plan, acquire, operate/maintain and disposal
- Social – recognising the social impacts and benefits of our activities, and working for healthy liveable communities
- Awareness – raising the awareness and capacity of our workforce to be accountable for implementing the Policy through their activities to achieve enhanced environmental outcomes and a culture of environmental responsibility
- Communication – communicating openly, responsively and empathetically with our customers, partners and stakeholders on environmental matters and report on our performance

This Policy applies to the agencies listed below:

- Transport for NSW
- Department of Transport
- Sydney Trains
- NSW Trains
- RailCorp
- State Transit Authority
- Sydney Metro

This Policy applies to permanent, temporary and casual staff of the above agencies, staff seconded from another organisation and contingent workers including labour hire, professional services contractors and consultants.

Rodd Staples
Secretary
13 January 2020

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