

Waterloo Integrated Station Development

Construction Environmental Management Plan

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Glossary of terms

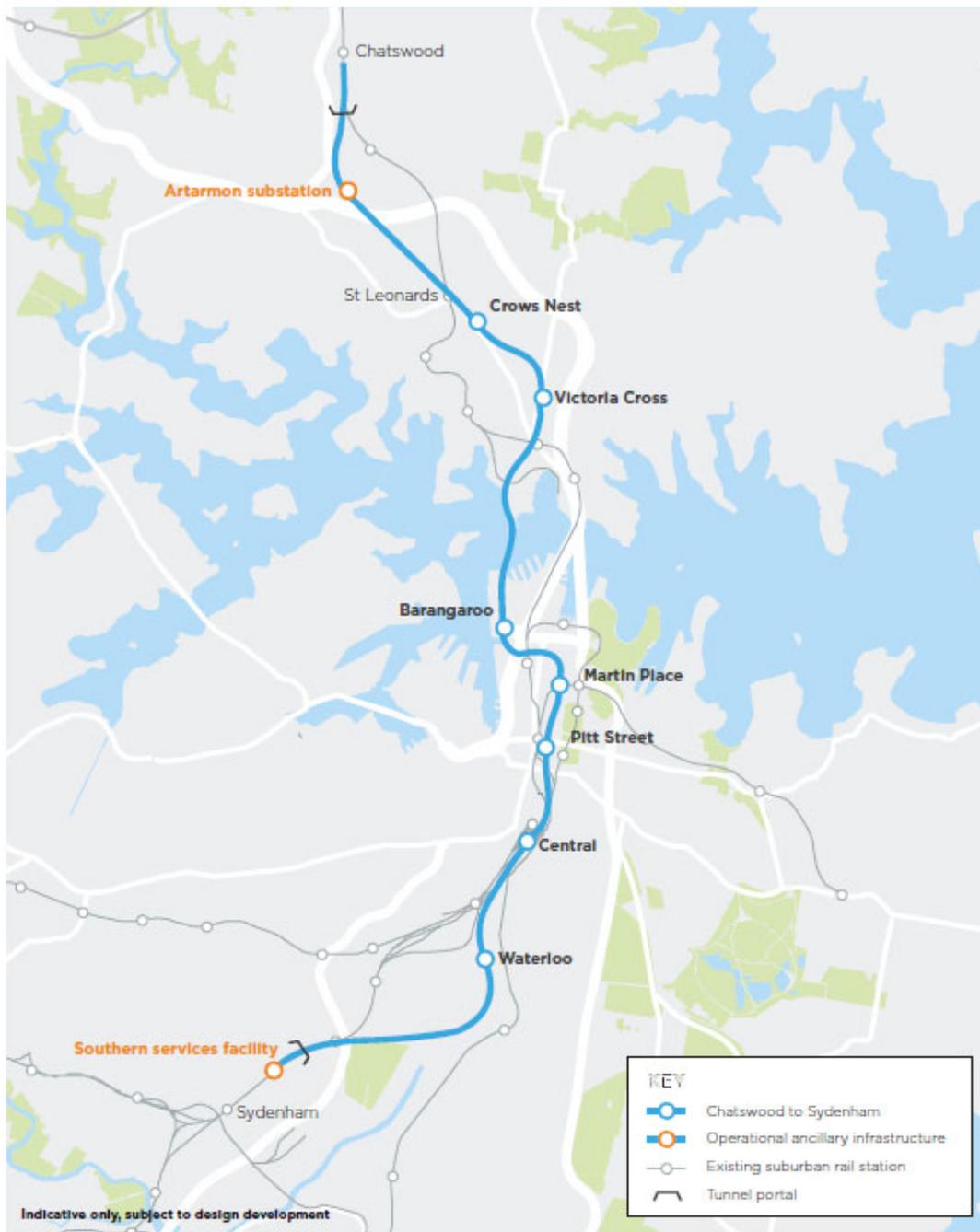
Term/Acronym	Definition
AA	The independent Acoustic Advisor appointed under the Project Planning Approval
ANZECC	Australian and New Zealand Environment Conservation Council
CEMF	Construction Environmental Management Framework (Appendix B) of the Submissions and Preferred Infrastructure Report)
CEMP	Construction Environmental Management Plan
Crown Lands and Water	Crown Lands & Water Division, Department of Industry (formerly DPI Water)
CNVIS	Construction Noise and Vibration Impact Statement
PCCR	Pre-Construction Compliance Report
CCR	Construction Compliance Report
DP	Design Package
DPIE	NSW Department of Planning, Industry and Environment
DP&I	NSW Department of Primary Industries, including DPI Agriculture, DPI Biosecurity and Food Safety, DPI Land and Natural Resources, DPI Crown Lands and Water and DPI Fisheries
EIS	Sydney Metro City & Southwest Chatswood to Sydenham Environmental Impact Statement, May 2016
EMS	Environmental Management System
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence under the POEO Act
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i> (NSW)
ER	The independent Environmental Representative appointed under the Project Planning Approval
ESCP	Erosion and Sedimentation Control Plan
ESD	Ecologically sustainable development
ISD	Integrated Station Development
NGER	National Greenhouse and Energy Reporting
OEH	Office of Environment and Heritage
OSD	Over-station Development
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
Project	Sydney Metro City & Southwest
Project Planning Approval	Critical State Significant Infrastructure Sydney Metro & Southwest Chatswood to Sydenham Infrastructure Approval dated 9 January 2017 (Application no. SSI 15_7400)
Relevant Councils	City of Sydney

Term/Acronym	Definition
REMM	Revised Environmental Mitigation Measures (Chapter 11 of the Submissions and Preferred Infrastructure Report).
RAPs	Registered Aboriginal Parties
RFT	Request for Tender
RMS	NSW Roads and Maritime Services
SCO	Sydney Coordination Office
SEP	Site Environment Plan
SEPP	State Environmental Planning Policy
Spoil	All material generated by excavation into the ground
Sub Plans	Sub Plans to the CEMP requiring the approval the Secretary of the Department of Environment and Planning under Conditions C3 and C7 including construction noise and vibration, construction soil, water and groundwater, heritage, flora and fauna and air quality
Submissions and Preferred Infrastructure Report	Sydney Metro City & Southwest Chatswood to Sydenham Submissions and Preferred Infrastructure Report, October 2016
SMP	Sustainability Management Plan
SWMS	Safe Work Method Statement
SWTC	Scope of Work and Technical Criteria
Sydney Metro	Sydney Metro
TfNSW	Transport for New South Wales
TSE Works	Tunnels and Station Excavation Works for the Sydney Metro City & Southwest Project
VENM	As defined under the POEO Act, Virgin Excavated Natural Material is natural material (such as clay, gravel, sand, soil and rock) that: is not mixed with any other type of waste; and has been excavated from areas of land that are not contaminated.
Work Area	An area of work that is identified early in construction planning to help drive early definition of construction methodology and alignment of design activities. Work Areas will be listed in the Construction Management Plan.
Work Method Statement	Description of the methodology required to complete the activity. It describes the step-wise prescriptive sequence of tasks to be undertaken. Depending on the complexity of the activity or, if the same activity is being repeated elsewhere, the work method statement may be a separate document included in the Work Pack.

1 Project Overview

The Sydney Metro City & Southwest is a 30 kilometre metro rail between Chatswood and Bankstown, including; 17 kilometres of new tunnel from Chatswood, under the harbour to Sydenham connecting 7 new underground stations at Crows Nest, Victoria Cross (North Sydney), Barangaroo, Pitt Street, Martin Place, Central and **Waterloo**. Upgrading 13 kilometres of the Bankstown line, including 11 existing stations; Sydenham, Marrickville, Dulwich Hill, Hurlstone Park, Canterbury, Campsie, Belmore, Lakemba, Wiley Park, Punchbowl and Bankstown plus southern service facilities.

Figure 1 The Project (Source: Chatswood to Sydenham Environmental Impact Statement)



A number of separate environmental impact assessment processes for the Project were progressed by Transport for NSW (TfNSW). In May 2016, an Environmental Impact Statement for the Chatswood to Sydenham section of the Project (the EIS) was placed on public exhibition for a period of 48 days (six weeks). A Preferred Infrastructure Report on the Chatswood to Sydenham component (the PIR) was prepared and publicly released in October 2016. The Project was approved on 9 January 2017 (SSI 15_7400) (Project Planning Approval). Following approval, six modifications have been approved by NSW Department of Planning and Environment.

1.1 Waterloo Integrated Station Development Overview

The Waterloo Integrated Station Development (ISD) comprises of construction of the new station infrastructure to support customer movement and experience.

The Waterloo ISD is located within Sydney's suburb of Waterloo, as shown in Figure 2, within the Metro Quarter. The Metro Quarter Development (MQD) comprises the land bounded by Botany Road, Raglan Street, Cope Street and Wellington Street, but excluding the Congregational Church located at 103 Botany Road. It is situated approximately 3km from the Sydney CBD and is surrounded by established residential and commercial land uses. The MQD incorporates the Waterloo ISD and the Over-station Development (OSD) however, the OSD component is not subject to the CSSI Project Planning Approval (SSI15_7400) and therefore does not form part of the scope of this CEMP. Section 2.1 outlines the scope of work covered by this CEMP.



Figure 2 Location of the Waterloo ISD

Waterloo ISD is designed to deliver a high-quality metro customer experience, by providing safe, seamless interchange and a range of retail services. Waterloo ISD is intended as a catalyst for significant urban renewal within the suburb of Waterloo.

An indicative diagrammatic longitudinal East section of the Waterloo ISD through the station is shown in Figure 3.



Figure 3 Indicative diagrammatic longitudinal East section

2 Purpose

This Construction Environment Management Plan (CEMP) was developed in accordance with the following documents:

- Sydney Metro Construction Environmental Management Framework – Chatswood to Sydenham (CEMF) – in particular Section 3.3.
- Sydney Metro Environment and Sustainability Policy
- Sydney Metro Chatswood to Sydenham Sustainability Strategy
- Department of Infrastructure, Planning and Natural Resources Guideline for the Preparation of Environmental Management Plans (2004)

This CEMP (this Plan) explains how John Holland will meet the environmental outcomes for the design and construction of the Waterloo ISD which forms part of the Sydney Metro City & Southwest Project (the Project). Sydney Metro are delivering the Project on behalf of Transport for NSW and the NSW Government. The CEMP comprises of a main CEMP document, issue specific sub plans, activity specific procedures and site-based Environmental Control Maps (ECMs).

The CEMP illustrates the relationship between other plans required by the contract, in particular those that relate to design management and includes the requirements of the John Holland Environmental Management System (EMS) (which is certified to ISO AS/NZS14001:2015 – refer to Appendix F) that the Waterloo ISD team will use to enhance its environmental performance and is consistent with the John Holland Environment and Sustainability Policy (Appendix A).

Implementation of this Plan will:

- Identify the environmental obligations and the hazards and risks associated with the ISD works
- Help prevent unauthorised environmental harm
- Fulfil Sydney Metro's environmental requirements as detailed in the Station Delivery Deed (SDD) and Scope of Works and Technical Criteria (SWTC)
- Ensure John Holland complies with the Minister for Planning's Project Planning Approval
- Ensure John Holland obtains and complies with relevant licences and approvals
- Comply with all relevant environmental legislation
- Minimise negative impacts on the community that relate to the environmental impacts of the works
- Identify and implement feasible opportunities to reduce the environmental impact of the works that are beyond contractual and compliance requirements.

John Holland have established, implemented, maintained and continually improved an ISO AS/NZS 14001 certified EMS since 1999. The EMS has applied to all John Holland projects since then, it is a proven and robust EMS. The basis for the John Holland EMS (and also this CEMP) is the concept of Plan-Do-Check-Act (PDCA) model. The CEMP provides a 'roadmap' that links the relevant legislative and client requirements to the Waterloo ISD EMS and describes the document structure that is used to manage and address environmental requirements.

This Plan will be submitted to the Secretary of the Department of Planning, Industry and Environment (DPIE) along with, or prior to, the submission of the sub plans no later than one (1) month before commencement of Construction. Construction will not commence until the CEMP and the subplans listed in Condition C3 of the Project Planning Approval have been approved by the Secretary of DPIE.

2.1 Waterloo ISD Description

The Waterloo ISD works under the Project Planning Approval include the design and construction as summarised in Table 1. The Waterloo ISD will include future over-station development, however the over-station development component is not subject to the Project Planning Approval and therefore does not form part of the scope for the Waterloo ISD as outlined in this CEMP or the Sydney Metro Staging Report. An indicative schedule of work is provided in Table 2.

Demolition work was been completed by the Sydney Metro TSE Contractor. No building demolition or blasting works have been identified as part of the Waterloo ISD project.

Table 1: Waterloo ISD description of work summary

Works	Description
Waterloo Station	
Station Works	<p>The works for the underground metro station include:</p> <ul style="list-style-type: none"> • detailed excavation and drilling required for sumps, track sub-invert, on-site detention tanks, drainage, services and foundations to support the structural works; • waterproofing of the station box; • all primary and secondary structural works including for the entire station box, entrances, all services, utilities, systems, fit out elements, concourses, station platforms, over-track exhaust plenums and vertical transport; • track invert slab including underline crossings, earthing mats and drainage; • plant and equipment rooms; • public and staff toilets; • all back of house areas; • architectural fit-out; • low-voltage electrical, fire, hydraulics, lighting and mechanical systems; • building management control system; • provisions for works by Interface Contractors; • provisions for advertising and vending machines; • lifts and escalators; • signage and wayfinding; • external façade to the MQD Transfer Level including over street awnings; • landscaping, kerbs and precinct activation works; • bicycle parking facilities; • public art (within the Station Lot); • security measures; and • integration of the ETS and undertaking all works including civil and cabling

Works	Description
Local Area Works	<ul style="list-style-type: none"> incorporation of heritage interpretation through design Resurfacing or reconstruction of affected roads, footpaths, cycle ways or other public amenities, and signage, traffic control signals, street lighting, flood mitigation and traffic and transport management.
Utility Service Works	<ul style="list-style-type: none"> Identification, protection, diversion, reconstruction or repair of affected utility services, new utility service connections and other general provisions.
Property Works	<ul style="list-style-type: none"> Protection and adjustments to affected existing buildings and property, including demolition of built features.
Retail Works	<ul style="list-style-type: none"> The works for the base build of the retail spaces in Waterloo Station and the station precinct, but excludes the retail spaces in the MQD Lot, including: <ul style="list-style-type: none"> shell of the retail space tenancy units (including storage areas); base building services including LV power, cold water supply, chilled water loops (for air conditioning), fire systems, sewage facilities; grease traps and ventilation exhausts (where appropriate); waste collection facility for the retail areas; loading bay for the retail areas; telephone and data systems; and glazed shopfront finishes.
MQD Enabling Works	<ul style="list-style-type: none"> The works to be performed for the areas of the MQD which are located within the footprint of the station box and below the MQD Transfer Level which are required for the integration of the MQD Works with the Station Works and to enable further construction of the MQD Works without disruption to the operating station. The MQD Enabling Works include: <ul style="list-style-type: none"> foundations and structures to support the MQD; and egress and any other Building Code of Australia compliance required to support the MQD Works.

Table 2: Indicative schedule of construction phases for Waterloo ISD

Phase	Description	Indicative Timeframe
Pre-Construction	<ul style="list-style-type: none"> CEMP preparation, review, endorsement and approval Site establishment and other activities that are not defined as Construction by the Project Planning Approval Design development 	November 2019 – August 2020
Works by the Interface Contractors	<ul style="list-style-type: none"> Track installation and associated infrastructure Electronic ticketing equipment Other activities as listed in Section 2.2 	August 2020 – mid 2024*
Construction of Waterloo ISD	<p>Construction of the station including:</p> <ul style="list-style-type: none"> Services External works Landscaping Property works Retail works MQD Enabling Works Testing and commissioning 	October 2020 – late 2022

Phase	Description	Indicative Timeframe
	Operational Readiness and handover	December 2022 – March 2024

*Not continuous access

2.2 Scope by Others

The following will be designed, constructed and commissioned by other parties:

- Supply and installation of all electronic ticketing equipment and head end equipment
- Works by the Interface Contractors:
 - (i) Track design and installation for Sydney Metro services
 - (ii) High voltage design and installation for Sydney Metro. (Note, containment of the HV will be included in the Waterloo ISD scope)
 - (iii) Overhead wire and traction supply
 - (iv) Tunnel Ventilation System
 - (v) Design and installation of the Platform Screen Doors
 - (vi) Sydney Metro Radio Systems
 - (vii) Design and installation of the Signaling System
 - (viii) Sydney Metro Central Control Systems
 - (ix) Sydney Metro Communication Systems.

2.3 Objectives and Targets

The key objectives of the CEMP is to set in place the requirements of the John Holland EMS for the Waterloo ISD which address all relevant environmental and planning requirements. Key environmental objectives and targets for the Waterloo ISD Works are included in Table 3.

Table 3: Objectives and Targets

Objective	Target	Reporting / Monitoring
Compliance with the Project Planning Approval as applicable to the Waterloo ISD scope of work and all permits and licences	Full compliance with the planning approval, all permits and licences	Compliance Tracking Program
Collaboration with Sydney Metro, regulatory agencies and other key stakeholders	Score from quarterly survey with Environmental Representative, EPA official and Heritage Council (as applicable) is greater than 65% on a rolling average	Survey report
Leadership Team proactively manage environmental performance	Leadership attendance rate at environmental inspections at 80% Actual vs. planned attendance at planned environmental awareness training at 80% (excludes tool boxes and inductions)	Inspection reports Training attendance sheet

Objective	Target	Reporting / Monitoring
Effective management of incidents	All incidents managed in accordance with the requirements of the CEMP and incident reporting protocol	Incident report
Minimise environmental risk during construction of Waterloo ISD	All environmental observations and actions raised in inspections and audits are closed out within agreed timeframes	Inspection report

3 Leadership

3.1 Leadership and commitment

John Holland project management demonstrate leadership and commitment with respect to the EMS by:

- taking accountability for the effectiveness of the EMS on the Waterloo ISD;
- ensuring that the Environment Policy and environmental objectives are established and are compatible with the strategic direction and the context of the Waterloo ISD;
- ensuring the integration of EMS requirements into the Waterloo ISD business processes;
- ensuring that the resources needed for the EMS are available;
- communicating the importance of effective environmental management and of conforming to the EMS requirements;
- ensuring that the EMS achieves its intended outcomes;
- directing and supporting the Waterloo ISD personnel to contribute to the effectiveness of the EMS;
- promoting continual improvement;
- supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility

3.2 Environmental Policy

The Waterloo ISD has developed a specific environmental policy in accordance with the John Holland Environment Policy. The Waterloo ISD Policy provides a framework for setting objectives and includes a commitment to the protection of the environment, including prevention of pollution and other specific commitments. The Environment Policy is maintained as documented information, communicated within the Waterloo ISD team, and is available to all interested parties. A copy of the Environmental Policy is presented in Appendix A and is available on the Waterloo ISD website.

4 Legal and Approval Requirements

4.1 Environmental Planning Approval Process

As set out in Section 1.0, in May 2016 an EIS for the Chatswood to Sydenham section of the Project was placed on public exhibition for a period of 48 days (six weeks). A PIR on the Chatswood to Sydenham component was prepared and publicly released in October 2016. The Chatswood to Sydenham section of the Project was approved on 9 January 2017 (SSI 15_7400) (Project Planning Approval).

Under Section 115ZG of the EP&A Act the following authorisations are not required for approved State Significant Infrastructure (SSI) (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply):

- The concurrence under Part 3 of the *Coastal Protection Act 1979* of the Minister administering that Part of that Act
- A permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*
- An approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*
- An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*
- An authorisation referred to in section 12 of the *Native Vegetation Act 2003* (or under any Act repealed by that Act) to clear native vegetation or State protected land
- A bush fire safety authority under section 100B of the *Rural Fires Act 1997*
- A 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 of the *Water Management Act 2000*.
- In addition, Division 8 of Part 6 of the *Heritage Act 1977* does not apply to prevent or interfere with the carrying out of approved SSI and the following directions, orders or notices cannot be made or given so as to prevent or interfere with the carrying out of approved critical SSI:
- An interim protection order (within the meaning of the *National Parks and Wildlife Act 1974* or the *Threatened Species Conservation Act 1995*)
- An order under Division 1 (Stop work orders) of Part 6A of the *National Parks and Wildlife Act 1974*, Division 1 (Stop work orders) of Part 7 of the *Threatened Species Conservation Act 1995* or Division 7 (Stop work orders) of Part 7A of the *Fisheries Management Act 1994*
- A remediation direction under Division 3 (Remediation directions) of Part 6A of the *National Parks and Wildlife Act 1974*
- An environment protection notice under Chapter 4 of the *Protection of the Environment Operations Act 1997*
- An order under section 124 of the *Local Government Act 1993*.

The abovementioned potential aspects and impacts are deemed to be addressed under the Project Planning Approval.

4.2 Approval and Licensing Requirements

The regulatory authority and approval requirements for the Waterloo ISD are outlined in Table 4.

Table 4: Regulatory authority and approval requirements

Regulatory authority	Approval / licence required for Waterloo ISD
Department of Planning, Industry and Environment (DPIE)	Project Planning Approval granted under Part 5.1 of the <i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i> . Approval of reports, studies and plans as required by the Project Planning Approval.
Commonwealth Department of Agriculture, Water and the Environment	The <i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i> prescribes the Commonwealth's role in environmental assessment, biodiversity conservation and the management of protected areas. Under the EPBC Act, matters of national environmental significance include world and national heritage properties and listed biodiversity impacts. The EIS concludes that the Project would not have a significant impact in relation to these matters. As such the Project is not a Controlled Action and does not require assessment and approval under the EPBC Act.
NSW Environment Protection Authority (EPA)	The <i>Protection of the Environment Operations Act 1997 (POEO Act)</i> details in Schedule 1 the activities for which a licence is required for the premises at which it is carried out. Construction works for the Waterloo ISD are not listed as scheduled activities under the POEO Act.
Roads and Maritime Services (RMS) and other road authorities	In accordance with the <i>Roads Act 1993</i> , John Holland will obtain the consent of the appropriate roads authority to erect a structure, carry out work in, on or over a public road, or dig up or disturb the surface of a public road. If the applicant is a public authority, the roads authority must consult with the applicant before deciding whether or not to grant consent or concurrence. As required, road occupancy permits will be sought in accordance with the Construction Traffic Management Plans.
Sydney Water	In accordance with the <i>Sydney Water Act 1994</i> , John Holland will obtain prior approval to connect to the sewer.

The relevant legislation for the Waterloo ISD are outlined in Table 5.

Table 5: Regulatory authority and licence requirements

Applicable Legislation	Summary of obligations for Waterloo ISD
<i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>	The assessment and approval process for a critical State significant infrastructure project is established under Part 5.1 of the EP&A Act. Approval of reports, studies and plans as required by the Project Planning Approval.
<i>Contaminated Land Management Act 1997</i>	If contaminated land is uncovered it must be assessed and managed in accordance with the Contaminated Land Management Act 1997. The Construction Soil and Water Management Procedure identifies areas of potential contamination and mitigation measures.

Applicable Legislation	Summary of obligations for Waterloo ISD
<i>Heritage Act 1977</i>	Heritage impact in accordance with the Heritage Act 1977 is assessed under Part 5.1 of the EP&A Act, therefore permits are not required. The Construction Heritage Management Plan identifies areas of potential impact and mitigation measures. The Heritage Council will be notified if a relic is uncovered during construction and if it is reasonable to believe that the Heritage Council is unaware of the location of the relic.
<i>National Greenhouse and Energy Reporting (NGER) Act 2007 (Cth)</i>	This Act provides data and accounting in relation to greenhouse gas emissions and energy consumption and production and: <ul style="list-style-type: none"> ▪ Inform policy-making and the Australian public ▪ Meet Australia's international reporting obligations, and ▪ Provide a single national reporting framework for energy and emissions reporting. John Holland will undertake reporting of the greenhouse gas emission and energy production and consumption under the NGER Act, inclusive of 'material' Subcontractors.
<i>Transport Administration Act 1988</i>	This Act created TfNSW and defines its principal role. TfNSW is the proponent of the Project under the EP&A Act.
<i>Waste Avoidance and Resource Recovery Act 2001</i>	This Act establishes the waste hierarchy. Promotes waste avoidance and resource recovery by developing waste avoidance and resource recovery strategies. Provides requirements for waste avoidance and resource recovery which are addressed in the Waste and Recycling Management Sub plan.
<i>Water Management Act 2000</i>	The objective of this Act is to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations. There is no plan to actively dewater an excavation or the tunnel as part of the works. Groundwater will be withdrawn from sumps within the tunnel and other excavations where groundwater has naturally seeped in. This has been assessed under Part 5.1 of the EP&A Act, therefore approvals are not required under Section 89 for water use, Section 90 for water management work. In addition, activities generally requiring permits under the Water Management Act are exempt from aquifer interference approval under Section 91 as no proclamation under Section 88A had been made declaring that the Act applies in relation to aquifer interference approvals
<i>Protection of the Environment Operations Act 1997</i>	The main purpose of this Act is to provide for the protection of the environment especially those aspects that are of national environmental importance and to promote ecological sustainable development. The Act binds the Crown. Do not take, use, keep or interfere with "nationally significant" cultural and natural resources, protected wildlife and protected plants without Approval
<i>Dangerous Goods (Road and Rail Transport) Act 2008</i>	The purpose of this Act is to regulate the transport of Dangerous Goods by road and rail in order to promote public safety and protect property and the environment. The transport of Dangerous Goods is required to be appropriately licensed (both vehicle and driver). Depending on the quantities being transported, the Act outlines specific requirements for including appropriate placards on the transport vehicle, emergency procedures, PPE, manifest documentation and fire extinguishers.
<i>Roads Act 1993 – Roads (General) Regulation</i>	This Act and Regulation primarily provide for such things as the opening and closing of public roads, identification of road boundaries and road widening, road levels, classification of public roads, road work, protection of public road and regulation of traffic, regulation of work, structures and activities.

Applicable Legislation	Summary of obligations for Waterloo ISD
<i>Biosecurity Act 2015</i>	The purpose of this act is to outline the management of diseases and pests that may cause harm to human, animal or plant health or the environment.
<i>Biodiversity Act 2016</i>	The purpose of this Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainability development.

4.2.1 Compliance obligations

The Waterloo ISD delivery team has determined the compliance obligations related to its environmental aspects, determined how these obligations apply, and taken these compliance obligations into account when establishing the CEMP. Table 6 provides details of the relevant Plans and Registers contained within the John Holland system which will be implemented on the Waterloo ISD under this CEMP.

Table 6: Legal Compliance Registers and Plans

Required Project documentation	Responsibility	John Holland tools to be used to manage documentation
Legal Register	Environment & Sustainability Manager	Envirolaw
Approvals & Compliance Matrix	Environment & Sustainability Manager	Project Pack Web, and Appendix B.
Obligations Register	Environment & Sustainability Manager	Project Pack Web
John Holland system requirements	Environment & Sustainability Manager	Integrated Management System

4.3 Standards & Guidelines

Numerous environmental publications, standards, codes of practice and guidelines are relevant to construction and are referenced throughout this CEMP and applicable subplans. A summary of these applicable standards and guidelines are provided in Table 7.

Table 7: Standards & Guidelines

Standard / Guideline
ISO14001 Environmental Management System – Requirements with Guidelines for Use
Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009)
Managing Urban Stormwater: Soil and Construction (Landcom, 2008)
AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting
Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2008)

Standard / Guideline

Department of Infrastructure, Planning and Natural Resources Guideline for the Preparation of Environmental Management Plans (2004)

4.4 Environmental Assessments

John Holland will assess the consistency of design and or construction methodology changes it instigates with the Project Planning Approval in accordance with Section 115ZI of the EP&A Act in consultation with Sydney Metro and the ER. Consistency Assessments will be prepared in accordance with *01.23.25 SM ES-PW-314_1.0 Sydney Metro Planning Approval Consistency Assessment*. Once Consistency Assessments are complete, they will be submitted to Sydney Metro for ER review under Project Planning Approval Condition A24(i) and determination in accordance with Section 115ZI of the EP&A Act.

Sydney Metro will provide copies of approved assessments to the ER and John Holland. If required, this CEMP or other relevant environmental and planning documents will be revised to incorporate additional commitments or mitigation measures and the ER will review and endorse these changes in accordance with Project Planning Approval Condition A24 (j).

In the event that the design change is found by Sydney Metro to be inconsistent with the Planning Approval, Sydney Metro will notify John Holland of this determination. John Holland will be required to comply with any Director-General's requirements in completing further environmental assessment of the design change and submit this assessment to Sydney Metro. Sydney Metro will then submit the proposed modification to the DPIE for assessment. A register of all design changes approved for implementation on the Waterloo ISD will be maintained by Sydney Metro with input from John Holland. Sydney Metro is responsible for assessing and obtaining any necessary approvals for changes it instigates unless otherwise specified.

4.4.1 Ancillary Facilities

In the event that John Holland is required to establish an ancillary facility in order to enable the construction of the station, the Waterloo ISD Environment and Sustainability Manager will prepare an Ancillary Facilities Management Plan (AFMP) which will outline the environmental management practices and procedures to be implemented for the establishment and operation of the ancillary facility.

The AFMP will be prepared in consultation with the relevant council (where applicable) and submitted to the Secretary and EPA for information one month before installation of the relevant ancillary facilities. The AFMP will be developed in accordance with Project Planning Approval Condition A17.

Minor ancillary facilities that have not been access under the EIS or meet the criteria set out in Project Planning Approval Condition A16 will be subjected to an Environmental Review which will be provided to the ER for approval.

5 Roles and Responsibilities

The Waterloo ISD management team ensure that the responsibilities and authorities for relevant roles are assigned and communicated to the relevant personnel associated with the delivery of the Waterloo ISD.

5.1 Key Stakeholders

John Holland will collaborate with Sydney Metro, key regulatory stakeholders, the independent Environmental Representative (ER), the Community Complaints Mediator (CCM), independent Acoustic Advisor (AA) and City of Sydney Council. The relationships are shown in Figure 4.

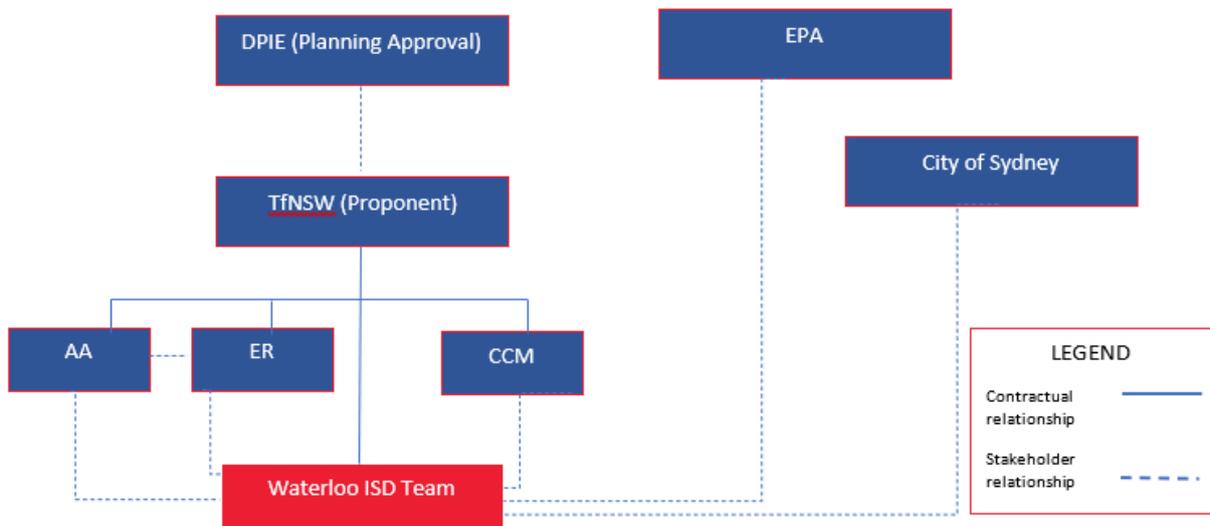
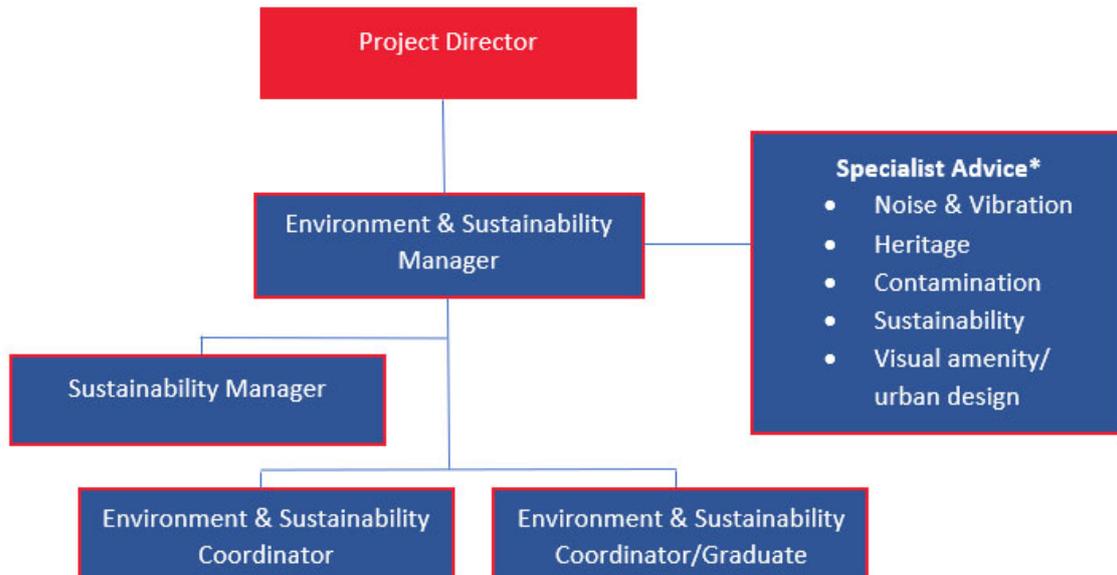


Figure 4: John Holland relationship with key stakeholders

5.2 Waterloo ISD Environment and Sustainability team

The personnel and specialist environmental consultants that make up the Waterloo ISD environment and sustainability team are shown in the organisational structure provided in Figure 5.



*advice to be provided as required

Figure 5: Waterloo ISD Environment and Sustainability team and specialist consultants

A detailed description of each of the key roles is provided in Table 8.

Table 8: Environment and Sustainability Team

Environment and Sustainability Manager	
Authority	<ul style="list-style-type: none"> Appointed by the Project Director Station and is independent of the design and construction functions Authorised to produce any correspondence and documentation necessary for approvals and environmental and sustainability management All correspondence and documentation that has legal, commercial or contractual impact must be viewed and agreed upon, by the Project Director Station Authorised to require all reasonable steps to be taken to achieve environmental compliance
Role	Accountable for environmental and sustainability performance for the works
Responsibility	<ul style="list-style-type: none"> Lead the creation of a consultative and proactive culture that ensures environmental compliance and 'No Harm' as a driver of work behaviours Effectively lead and manage the development and implementation of a risk based Environmental and Sustainability Management System for the Works, including review and continual improvement of this Plan Ensure adequate environmental and sustainability participation at Value Engineering Workshops Provide strategy advice and manage and oversee the granting and implementation of all required environmental and planning approvals governing the works Provide specialist environment, planning and sustainability advice to the Project Director Station and other functional managers to facilitate design and construction Oversee the development, implementation, assessment and verification of sustainability measures for the works

- Oversee proactive identification, assigning of responsibility, monitoring and review of environmental, sustainability and planning risks and performance expectations, goals and standards for managing all potential adverse impacts
- Oversee the environmental management and sustainability induction and training program
- Oversee the preparation of environmental assessments on design changes and obtain any necessary planning approvals
- Oversee the environmental site monitoring, inspections and audits
- Oversee investigation and close out of any environmental complaints
- Oversee compliance tracking and reporting
- In consultation with the Project Director Station, Construction Manager and where relevant the Safety Manager manage, oversee investigation, corrective action and reporting of any environmental incidents.
- Liaise with Sydney Metro to discuss sustainability performance and ensure continual improvement
- Liaise with stakeholders, including the ER and AA, to discuss performance and compliance requirements for the project.

Lines of communication

- Reports to the Project Director Station
- Principal's Representative's, Environmental Representative's, Acoustic Advisor's, and Community Complaints Mediator primary contact on environmental and sustainability matters
- Primary government agency contact for planning approvals, environmental management and sustainability.

Minimum skill level

- Tertiary qualification in Environmental Engineering, Science, Sustainability or other associated disciplines
- Recent relevant experience in environmental management on a project similar to the Waterloo ISD
- Minimum of at least 10 years environmental management experience, with extensive experience in the preparation and implementation of environmental management systems and plans
- Construction sustainability management (5+years)
- Knowledge of environmental statutes and legislation
- Understanding of sustainability rating schemes and standards
- Skill in quantitative and qualitative environmental risk assessment and development of risk controls and actions involved in delivery and implementation of projects.
- Expert understanding of incident investigations and reporting
- Ability to lead high level investigations involving multiple internal and external parties
- In-depth understanding of whole-of-business issues as they apply to environmental and sustainability systems at all levels
- Green Star Accredited Professional certification

Interface with the overall project organisation structure

- Member of the Waterloo ISD Senior Leadership Team

Sustainability Manager

Authority

Appointed by the Environment and Sustainability Manager

Role

Provide sustainability strategy and performance advice

Responsibility

- Development and implementation of the Sustainability Management System including review and continual improvement of the Sustainability Plan
- Manage the implementation, assessment and verification of sustainability measures for the works

	<ul style="list-style-type: none"> • Provide sustainability advice to the Environment and Sustainability Manager and other functional managers to facilitate design and construction • Manage the sustainability induction and training program in consultation with the Workforce Development Manager to ensure that relevant project personnel are suitably trained, and possess the necessary skills, to undertake their designated sustainability responsibilities • Assist the Commercial Manager to ensure sustainable procurement and that subcontractors fulfil their sustainability obligations • Report on the progress of sustainability initiatives and targets and ensure any required actions are initiated • Liaise with Sydney Metro to discuss sustainability performance and ensure continual improvement • Assist the Stakeholder and Community Relations Manager in developing and implementing community education strategies with respect to sustainability.
Lines of communication	Reports to the Environment and Sustainability Manager
Minimum skill level	<ul style="list-style-type: none"> • Tertiary qualification in Environmental Engineering, Science, Sustainability or other associated disciplines • Recent relevant experience in sustainability management on a project similar to the Waterloo ISD • Green Star Accredited Professional certification
Interface with the overall project organisation structure	<ul style="list-style-type: none"> • Attends environment, sustainability, design and construction meetings as required

Environment & Sustainability Coordinator

Authority	Appointed by the Environment and Sustainability Manager
Role	Assist the Environment and Sustainability Manager in day to day management of the Waterloo ISD Works
Responsibility	<ul style="list-style-type: none"> • Assist the Environment and Sustainability Manager in the creation of a consultative and proactive culture that ensures environmental compliance and 'No Harm' as a driver of work behaviours • Manage the implementation of the CEMP • Assist the Environment and Sustainability Manager in the review and continual improvement of this Plan • Manage proactive identification, assigning of responsibility, monitoring and review environmental risks and performance expectations, goals and standards for managing all potential adverse environmental impacts • Manage the preparation and implementation of specific environmental documents • Deliver the environmental management induction and training program • Assist the Environment and Sustainability Manager in the preparation of environmental assessments on design changes and obtain any necessary planning approvals • Manage environmental site monitoring and inspections • Participate in environmental audits • Manage the investigation and close out of any environmental complaints in collaboration with the Environment and Sustainability Manager and Stakeholder and Community Relations Manager • Assist the Environment and Sustainability Manager in investigation, corrective action and reporting of any environmental incidents. • Coordinate the collection of data and reporting against sustainability targets outlined in the SMP. • Assist the Sustainability Manager in the implementation of sustainability initiatives for the Waterloo ISD.

	<ul style="list-style-type: none"> Facilitate site inspections with the ER and AA (if applicable) and discuss site related performance and compliance requirements. Support the development and submission to the ER and AA of Out of Hours Work Applications and post approval documentation as required.
Lines of communication	<ul style="list-style-type: none"> Reports to the Environment and Sustainability Manager
Minimum skill level	<ul style="list-style-type: none"> Possess a relevant recognised qualification At least two years relevant experience Familiarity with current and emerging environmental issues
Interface with the overall project organisation structure	<ul style="list-style-type: none"> Attends environment, sustainability, design and construction meetings as required

Environment & Sustainability Graduate

Authority	Appointed by the Environment and Sustainability Manager
Role	Assist the Environment and Sustainability team in day to day management of the Waterloo ISD Works
Responsibility	<ul style="list-style-type: none"> Assist the Environment and Sustainability team in the creation of a consultative and proactive culture that ensures environmental compliance and 'No Harm' as a driver of work behaviours Assist in the implementation of the CEMP Assist the Environment and Sustainability Manager in the review and continual improvement of this Plan Assist the environmental team in the proactive identification, assigning of responsibility, monitoring and review environmental risks and performance expectations, goals and standards for managing all potential adverse environmental impacts Deliver the environmental management induction and training program Assist the Environment and Sustainability Manager in the preparation of environmental assessments on design changes and obtain any necessary planning approvals Manage environmental site monitoring and inspections Participate in environmental audits Assist in the investigation and close out of any environmental complaints in collaboration with the Environment and Sustainability Manager and Stakeholder and Community Relations Manager Assist the Environment and Sustainability Manager in investigation, corrective action and reporting of any environmental incidents. Coordinate the collection of data and reporting against sustainability targets outlined in the SMP. Assist the Sustainability Manager in the implementation of sustainability initiatives for the Waterloo ISD.
Lines of communication	<ul style="list-style-type: none"> Reports to the Environment and Sustainability Manager
Minimum skill level	<ul style="list-style-type: none"> Possess a relevant recognised qualification Familiarity with current and emerging environmental issues

The role, authority and responsibility of other key personnel with respect to environment and sustainability issues are shown in Table 9.

Table 9: Role, authority and responsibility of other key personnel

Waterloo ISD role	Authority and responsibility
Project Director Station	<ul style="list-style-type: none"> Managing the delivery of the works including overseeing planning approval and environmental management, including implementation of this CEMP Authority to direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts Act as the Contractor's Representative.
Commercial Manager	<ul style="list-style-type: none"> Ensure relevant sustainability requirements are considered in procuring materials and services.
Engineering Manager	<ul style="list-style-type: none"> Ensure relevant environmental and planning requirements are addressed in design development Provide input to and review consistency of assessments on design changes.
Safety Manager	<ul style="list-style-type: none"> Ensure environmental and planning requirements are addressed in relevant safety documents Collaborative incident management and reporting in the event of safety incidents with a potential to cause environmental impact.
Quality Manager	<ul style="list-style-type: none"> Oversee environmental and sustainability auditing
Workforce Development Manager	<ul style="list-style-type: none"> Ensuring the provision of appropriate training in environment and sustainability aspects for relevant project personnel in consultation with the Environment and Sustainability Manager.
Stakeholder and Community Relations Manager	<ul style="list-style-type: none"> Assist the Environment and Sustainability Manager in consulting regulatory agencies Communicate sustainability initiatives and potential environmental impacts to the surrounding community Work collaboratively with the Environment and Sustainability Manager to resolve environmental complaints.
Construction Manager and delegates	<ul style="list-style-type: none"> Manage construction in relation to environmental management for the work activity in conjunction with the Environment and Sustainability Manager Ensure compliance with this Plan, Sub Plans and Aspect Specific Management Plans and procedures.
Site superintendent	<ul style="list-style-type: none"> Construction delivery in relation to environmental management and compliance in conjunction with the Environment and Sustainability Manager Authority to direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts.
All personnel	<ul style="list-style-type: none"> Undertake site induction training, attend & sign onto relevant environment toolbox talks Report all environmental incidents to the environmental team and site supervisor Conduct all works in accordance with the Waterloo ISD CEMP, Sub Plans and Procedures

John Holland has also engaged a number of specialist environmental consultants to provide advice and assistance in developing and delivering the CEMP Sub Plans and relevant management plans. Table 10 provides an overview of the scope of work of these consultants.

Table 10: Specialist environmental consultants

Aspect	Consultant	Scope of works
Contamination assessment	TBC	Preparation of a Remediation Action Plan and validation report to meet the requirements of the EPA Site auditor

Aspect	Consultant	Scope of works
EPA Accredited Auditor	TBC	Auditing in accordance with the <i>Contaminated Land Management Act 1997</i> and the Deed
Noise and vibration assessment	TBC	Assist the Environment and Sustainability Manager to prepare and implement the Construction Noise and Vibration Management Plan
Heritage	TBC	Assist the Environment and Sustainability Team to prepare and implement the Construction Heritage Management Plan.
Visual amenity	TBC	Assist the Environment and Sustainability Team to prepare and implement the Visual Amenity Management Plan

5.3 Transport for NSW

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

Personnel from the Sydney Metro Delivery Environment and Sustainability team will ensure compliance with the Project Planning Approval and Revised Environmental Mitigation Measure obligations held by TfNSW, as set out in the City and Southwest Chatswood to Sydenham – Staging Report.

The Sydney Metro team will determine consistency assessments for the works under Section 115ZI of the EP&A Act. Personnel from Sydney Metro’s team may attend ER site inspections and collaborative audits.

5.4 Environmental Representative

The Environmental Representative (ER) is engaged by Sydney Metro and has been approved by the DPIE. The primary role of the ER is to independently oversee compliance with the Project Planning Approval and be the principle point of advice on the environmental performance of the works.

The role of the ER is specified in Project Planning Approval Conditions A22-24 and further outlined in the CEMF. The role includes the following:

- a) receive and respond to communications from the Secretary in relation to the environmental performance of the Waterloo ISD;
- b) consider and inform the Secretary on matters specified in conditions of approval;
- c) consider and recommend any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community;
- d) review documents identified in Project Planning Approval Conditions C1, C3 and C9 and any other documents that are identified by the Secretary, to ensure they are consistent with requirements in or under this approval and if so:
 - i) make a written statement to this effect before submission of such documents to the Secretary (if those documents are required to be approved by the Secretary), or

- ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Secretary for information or are not required to be submitted to the Secretary);
- e) regularly monitor the implementation of environmental management related documents to ensure implementation is being carried out in accordance with what is stated in the CEMP and Sub Plans and the terms of projects conditions of approval;
- f) review John Hollands notification of incidents in accordance with Project Planning Approval Condition A41;
- g) as may be requested by the Secretary, help plan, attend or undertake Department audits of the Waterloo ISD, briefings, and site visits;
- h) if conflict arises between John Holland, Sydney Metro and the community in relation to the environmental performance of the Waterloo ISD, follow the procedure in the Community Communication Strategy approved under Project Planning Approval Condition B3 to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary;
- i) review any draft consistency assessment that may be carried out by John Holland, and provide advice on any additional mitigation measures required to minimise the impact of the work;
- j) consider any minor amendments to be made to the documents listed in Project Planning Approval Conditions C1, C3 and C9 and any document that requires the approval of the Secretary (excluding noise and vibration documents) that comprise updating or are of an administrative or minor nature, and are consistent with the terms of the Project Planning Approval Conditions.
- k) assess the impacts of minor ancillary facilities as required by Condition A18 of this approval; and
- l) prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Environmental Representative Report detailing the ER's actions and decisions on matters for which the ER was responsible in the preceding month (or other timeframe agreed with the Secretary). The Environmental Representative Report must be submitted within seven (7) days following the end of each month for the duration of works and construction of the CSSI, or as otherwise agreed with the Secretary.

If the ER is unsure as to whether a proposed amendment can be categorised as minor, the ER shall seek advice from DPIE prior to endorsing the subject amendments. If required updates to CEMP, Sub Plans and/or Aspect Specific Management Plans will be submitted to the Secretary of DPIE for approval.

Note – construction work will not commence unless an ER has been nominated and approved by the Secretary.

5.5 Acoustic Advisor

The independent Acoustic Advisor (AA) has been engaged by Sydney Metro and approved by DPIE. The primary role of the AA is to independently oversee construction noise and vibration planning, management and mitigation in accordance with the Project Planning Approval. The AA has been engaged by Sydney Metro for the duration of construction and for no less than six (6) months following operation of the CSSI.

The role of the AA is set out under Project Planning Approval Conditions A25 to A27 and is as follows:

- receive and respond to communication from the Secretary in relation to the performance of the Waterloo ISD in relation to noise and vibration;
- consider and inform the Secretary on matters specified in the terms of the Project Planning Approval relating to noise and vibration;
- consider and recommend, to the Sydney Metro, improvements that may be made to work practices to avoid or minimise adverse noise and vibration impacts;
- review all noise and vibration documents required to be prepared under the terms of the Project Planning Approval and, should they be consistent with the terms of the Approval, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary);
- regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of the Approval to ensure implementation is in accordance with what is stated in the document and the terms of the Approval;
- review John Hollands notification of noise and vibration incidents in accordance with Condition A41 of the Approval;
- Any activities generating noise and vibration in excess of the Noise Management Level derived from the Interim Construction Noise Guideline must not commence until the AA has been approved by the Secretary.
- In conjunction with the ER, the AA must:
 - i. consider requests for out of hours construction activities and determine whether to endorse the proposed activities in accordance with Condition E47;
 - ii. as may be requested by the Secretary or Community Complaints Mediator, help plan, attend or undertake audits of noise and vibration management of the Waterloo ISD works including briefings, and site visits;
 - iii. if conflict arises between Sydney Metro and the community in relation to the noise and vibration performance during construction of the Waterloo ISD, follow the procedure in the Community Communication Strategy approved under Condition B3 to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary;
 - iv. consider relevant minor amendments made to any noise and vibration document approved by the Secretary that require updating or are of an administrative nature, and are consistent with the terms of the Approval and the document approved by the Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of the Approval;
 - v. assess the noise impacts of minor ancillary facilities as required by Condition A18 of the Approval; and
 - vi. prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Noise and Vibration Report detailing the AAs actions and decisions on matters for which the AA was responsible in the preceding month (or other timeframe agreed with the Secretary). The Noise and Vibration Report must be

submitted within seven (7) days following the end of each month for the duration of construction of the Waterloo ISD, or as otherwise agreed with the Secretary.

5.6 Other key environment and planning stakeholders

5.6.1 Department of Planning, Industry and Environment

The Department of Planning, Industry and Environment (DPIE, Major Infrastructure Assessments) is responsible for assessing compliance with the Project Planning Approval and any documents which need the specific approval of the Director-General. As shown in Figure 4, communications with the DPIE must be managed through Sydney Metro as they are the proponent under the EP&A Act. John Holland will need to be fully involved in any communication with DPIE about approvals and compliance with Project Planning Approval Conditions that John Holland have been allocated.

5.6.2 Environment Protection Authority

The Environment Protection Authority protects the community and our environment and has powers and responsibilities under a range of NSW environmental legislation. While the Waterloo ISD is not required to hold an environmental protection licence (EPL) as the construction activities are not listed in Schedule 1 of the POEO Act the Environment and Sustainability Manager will consult with the EPA to discuss specific environmental issues as required (e.g. noise monitoring, water management etc). In the event of an incident that has the potential to, or has resulted in environmental harm, the EPA will be notified in accordance with the John Holland incident management procedure, refer to Section 12.

6 Environmental Management

6.1 Environmental Management System

The EMS for the Waterloo ISD comprises a combination of governance documentation, including this plan, sub plans and procedures and tools as illustrated in Figure 6. The EMS ensures:

- Environmental risk identification and management is central to all Waterloo ISD decision making from initial design investigations to site establishment, Construction and demobilisation.
- Comprehensive integration with other management documents including environmental technical studies which will inform design development; and work area planning process which also addresses site safety and quality management systems.

This CEMP is supported by sub plans relevant to the scope of the Waterloo ISD work and outlined in the Sydney Metro Staging Report. These are listed in Table 11. Additional procedures, checklists and forms will be developed to support the delivery of the Waterloo ISD.

Construction will not commence until the CEMP and the subplans (inclusive of embedded monitoring programs, where applicable) have been approved by the Secretary of DPIE.

Table 11: Sub plans/procedures for Waterloo ISD

Document	Relevant Plan/Procedure
Spoil Management Sub Plan	Spoil Management Sub Plan
Groundwater Management Sub Plan	Groundwater Management Sub Plan
Construction Traffic Management Sub Plan	Construction Traffic Management Sub Plan
Noise and Vibration Management Sub Plan	Noise and Vibration Management Sub Plan
Heritage Management Sub Plan	Heritage Management Sub Plan
Flora and Fauna Management Procedure	CEMP (Appendix H: Flora and Fauna Management Procedure)
Visual Amenity Sub Plan	Visual Amenity Sub Plan
Carbon and Energy Management Sub Plan	Sustainability Management Plan Section 6
Materials Management Sub Plan	Sustainability Management Plan Section 6
Soil and Water Management Procedure	CEMP (Appendix G: Soil & Water Management Procedure)
Air Quality Management Procedure	CEMP (Appendix I: Air Quality & Dust Procedure)
Waste (and Recycling) Management Sub Plan	Sustainability Management Plan Section 6

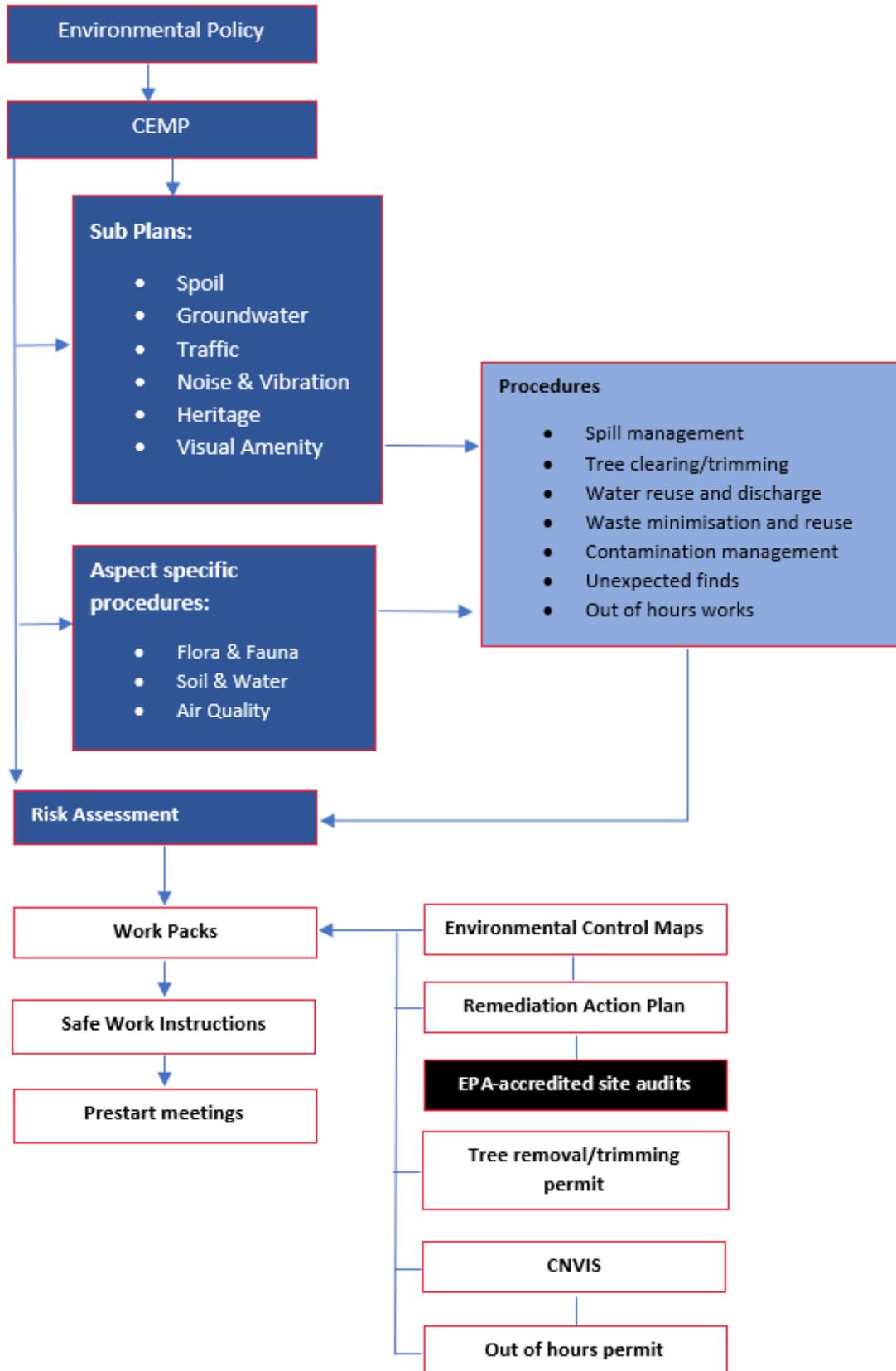


Figure 6: Overview of EMS documents

6.2 Environmental Risk Assessment

The preparation of this CEMP, Sub Plans, Environment Procedures and studies involves a detailed assessment of environmental and community based risks for the proposed construction activities. This information is drawn from the EIS, the PIR and, where required, site specific technical assessments. To assist in initial risk identification, a site specific Initial Environmental Risk Analysis has been undertaken and is contained in Appendix C. Key risks identified include:

- Potential for water discharge and/or spills from the worksite to result in pollution of adjacent waterways
- Potential noise and vibration impacts on surrounding residents and businesses, particularly from night time operations
- Potential construction traffic impacts on roads surrounding the construction worksite, particularly during peak periods
- Potential for discovery of previously unidentified contaminated soils
- Visual impacts of temporary construction worksites on surrounding residences and businesses
- Potential for discovery of previously unidentified Aboriginal or historic heritage relics.
- Potential for light pollution during night work.

The Initial Environmental Risk Analysis will not be updated as design and construction planning progresses, rather these risks have been utilised to inform the preparation of this CEMP Sub Plans and Aspect Specific Management Plans, and input to the Waterloo ISD Risk Register developed in accordance with the Risk Management Plan.

Sub Plans are to be developed in accordance with Project Planning Approval Condition C4. Each sub plan includes how:

- the environmental performance outcomes identified in the EIS as amended by the documents listed in Condition A1 will be achieved;
- the mitigation measures identified in the EIS as amended by the documents listed in Condition A1 will be implemented;
- the relevant terms of the Project Planning Approval will be complied with; and
- issues requiring management during construction, as identified through ongoing environmental risk analysis, will be managed.

The Sub Plans which require the approval of the Secretary of DPIE describe the management measures and controls, responsibilities and monitoring requirements to be implemented to minimise potential impacts on the environment and community. They also identify specific targets and objectives that the Waterloo ISD team is to meet during construction.

- Construction Noise and Vibration Management Plan
- Construction Heritage Management Plan
- Construction Groundwater Management Plan

Aspect Specific Environmental Procedures have been developed under the CEMP and as required by the CEMP to support environmental performance on site. Each procedure includes a flow

diagram for any required processes or steps to be undertaken along with details of the site hold points.

6.2.1 Managing Safety, Quality & Environment risks procedure

The John Holland management system incorporates safety, quality and environmental risks that are specific to activities or tasks. The system includes the following documentation:

- **Workplace Risk Assessment (WRA):** strategic risk assessment conducted on workplace and broken down into work components for the purpose of identifying system, training, legislative, and the identification of further detailed planning and risk assessment activities.
- **Activity Method Statement (AMS):** are operational planning risk assessments which aim to address the detailed hazard/risk control reduction strategies for workplace activities. The AMS includes the methodology for conducting activities, resources, plant, equipment and materials necessary to do the work safely. The requirements for an AMS will be identified in the WRA. The AMS is completed prior to the commencement of new activities or when an activity changes.
- **Task Risk Assessment (TRA):** are team based planning risk assessments which aim to address hazard/risk control reduction at the task level. TRAs are facilitated by the Supervisor, Leading Hand and/or Engineer and are primarily identified in the AMS. Must be completed prior to work commencing.

The WRA, AMSs and TRAs are pivotal to the management of all activities during delivery. They allow operational controls to be developed and implemented, case by case, for all the different workplaces, activities and tasks that are encountered.

The WRA's, AMS's and TRA's are owned by Project Management, Project Engineers, Supervisory Staff and Workforce. Subject matter experts act as advisors during the preparation of these documents ensuring that information from the CEMP, ECMs and ITPs is suitably incorporated and acted upon.

6.3 Environment Procedures

Aspect specific environment procedures address key elements of the Plans for implementation by the construction workforce. The procedures will:

- Include flow diagrams for any required processes or steps to be undertaken and provide an easy reference point for all site personnel in A3 charts
- Detail the 'how to', 'dos' and 'don'ts' and hold points for the implementation of controls, management and mitigation measures
- Reference relevant checklists and forms for data capture

They provide a comprehensive and informative means of communicating environmental management requirements to site personnel. The Environment and Sustainability Manager will review internal hold points identified in the Environment Procedures and if required develop forms for the release of hold points. The Environment Procedures are a key site management tool and will be revised and updated as construction progresses and in response to any issues identified during implementation.

Details of indicative internal hold points are provided in Table 12.

Table 12: Register of indicative internal hold points

Hold point description	Responsibility	Timing
Site Access		
<ul style="list-style-type: none"> All site personnel to enter site must be inducted. Site access arrangement must be made prior to entering the site. 	<ul style="list-style-type: none"> Project Director Station 	<ul style="list-style-type: none"> Ongoing
<ul style="list-style-type: none"> No Access is allowed outside the site boundary and in no-go zones without approval from the Project Manager. Site boundaries and no-go zones within the worksite will be clearly delineated. 	<ul style="list-style-type: none"> Project Director Station 	<ul style="list-style-type: none"> Prior to and during works
Flora and Fauna Management		
<ul style="list-style-type: none"> A vegetation Pre-clearing and tree trimming Checklist must be completed prior to any impact to any vegetation and signed off by the Environmental Team and Construction Team. 	<ul style="list-style-type: none"> Environment & Sustainability Coordinator Project Engineer Site Supervisor 	<ul style="list-style-type: none"> Prior to work occurring
Soil and Water Management		
<ul style="list-style-type: none"> Detailed, staged Erosion and Sediment Control Plans (ESCPs), including details of temporary stockpiles locations and management, must be developed and implemented prior to commencement of ground disturbance. Refer to the Erosion and Sediment Control Procedure 	<ul style="list-style-type: none"> Environment & Sustainability Coordinator Project Engineer Site Supervisor 	<ul style="list-style-type: none"> Prior to and during works
<ul style="list-style-type: none"> Dewatering to be undertaken in accordance with the Water Reuse and Discharge Management Procedure. No water will be discharged from the site without written approval of the Environment & Sustainability Manager (or delegate). All water will be tested (and treated if required) prior to discharge from the site to ensure compliance. 	<ul style="list-style-type: none"> Environment & Sustainability Manager 	<ul style="list-style-type: none"> During works
<ul style="list-style-type: none"> Stop work if presence of potential contamination is discovered. Prevent further activity in the area. Notify the Site Supervisor and Environment Coordinator and cordon off area (to be marked on the SEP). Refer to the Contamination & Asbestos Finds Procedure 	<ul style="list-style-type: none"> Site Supervisor Environment & Sustainability Coordinator 	<ul style="list-style-type: none"> During works
Spill Management		
<ul style="list-style-type: none"> Spills must be contained and cleaned-up immediately. All spills must be reported to the environment team regardless of quantity or location. Refer to the Soil & Water Management Procedure 	<ul style="list-style-type: none"> Site Supervisor Environment & Sustainability Coordinator 	<ul style="list-style-type: none"> During works
Heritage Management		
<ul style="list-style-type: none"> Stop work immediately if unexpected heritage finds, including human remains, are discovered. Contact Site Supervisor immediately and install temporary exclusion fencing. Project Director Station is to notify Sydney Metro. 	<ul style="list-style-type: none"> Site Supervisor Environment & Sustainability Manager Project Director Station 	<ul style="list-style-type: none"> During works

Hold point description	Responsibility	Timing
<ul style="list-style-type: none"> Refer to Aboriginal and Historic Heritage Management Procedure 		
Air Quality Management		
<ul style="list-style-type: none"> Stop work immediately if visible dust is leaving site. Dust must be minimised to the greatest extent practicable. Refer to the Air Quality and Dust Management Procedure 	<ul style="list-style-type: none"> Site Supervisor Environment & Sustainability Coordinator 	<ul style="list-style-type: none"> During works
Spoil and Waste Management		
<ul style="list-style-type: none"> Any recycled materials (aggregate, concrete, sand etc.) brought onto site requires certificates/testing results to be provided to the Environmental Team to determine material meets EPA requirements. All waste taken off-site must be taken to an appropriately licenced facility and for natural material, may require a waste classification. Refer to the Waste Management Procedure 	<ul style="list-style-type: none"> Project Engineer Environment & Sustainability Coordinator 	<ul style="list-style-type: none"> During works
<ul style="list-style-type: none"> The location (full street address) where waste will be transported to, and written confirmation from the disposal location (DA, EPL etc) that they can lawfully receive the types of waste proposed to be transported there must be provided to the Environment Coordinator. 	<ul style="list-style-type: none"> Project Engineer Environment & Sustainability Coordinator 	<ul style="list-style-type: none"> During works

6.4 Environmental Control Map

Environmental Control Map(s) (ECM) will be prepared to assist in the planning and delivery of the Waterloo ISD. The ECM will be specific to the site or work area and outlines the location of protection measures, monitoring requirements, conditions of approval and environmentally sensitive areas for the relevant stage of work. It is the practical application of the proposed control measures and will be referenced during pre-start discussions.

ECMs will be developed in accordance with Section 3.5 of the CEMF. The ECM's will include;

- An outline of which environmental procedures, environmental approvals, or licences are applicable;
- Illustrates the site showing significant structures, work areas and boundaries;
- Illustrates environmental control measures and environmentally sensitive receivers;

The ECM is a progressive document and will be updated to reflect the relevant stage as works progress. The ECM will be endorsed by the Environment and Sustainability Manager prior to the relevant stage of work commencing. Minor amendments can be marked up in the field, and major amendments will require endorsement by the Environment and Sustainability Manager.

Relevant Waterloo ISD personnel will be trained in the requirements of the ECM prior to commencing applicable work activities. Evidence of the training will be recorded (e.g. signature of trainees) by the Environment and Sustainability Coordinator.

6.5 Reinstatement

Prior to completion and as required by the CEMF Section 5.3, John Holland will develop management measures for reinstatement of the Waterloo ISD in consultation with TfNSW, the community and stakeholders. As a minimum reinstatement measures will include:

- clearing and cleaning all working areas and accesses at completion of Waterloo ISD works;
- at the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from Waterloo ISD;
- all land, including roadways, footpaths, loading facilities or other land that has been occupied temporarily will be returned to their pre-existing condition;
- community spaces, infrastructure and services will be reinstated soon as possible after completion of construction.

6.6 Summary of environmental monitoring

An indicative summary of the environmental monitoring that will be carried out as part of the Waterloo ISD works is shown in Table 13. Further detail on aspect specific monitoring is outlined in monitoring programs for relevant sub plan or management plan (Construction Noise & Vibration Management Plan and Groundwater Management Plan) and where relevant shown on the ECM.

Results from environmental monitoring will be provided to Sydney Metro in order for Sydney Metro to prepare the Construction Compliance Report (refer to section 7.3.4).

Environmental monitoring programs (embedded within applicable sub plans) must be endorsed by the ER (or the AA in regards to the Construction Noise and Vibration Sub Plan) and submitted by Sydney Metro to the Secretary of the DPIE (where applicable) for approval no later than one month before the commencement of construction.

Table 13: Indicative summary of environmental monitoring

Aspect	Monitoring Activity	Responsibility	Timing
General	<ul style="list-style-type: none"> • Site environmental inspections 	<ul style="list-style-type: none"> • Environment & Sustainability Manager • Environment Coordinator • Site Supervisor 	Weekly
	<ul style="list-style-type: none"> • ER inspections 	<ul style="list-style-type: none"> • Environment & Sustainability Manager • Environment & Sustainability Coordinator • Site Supervisor • ER 	Fortnightly (unless otherwise agreed)
Noise and Vibration	Noise and vibration monitoring (as per the monitoring program embedded in the Construction Noise and Vibration Management Plan)	<ul style="list-style-type: none"> • Noise and Vibration Consultant • Environment & Sustainability Coordinator 	As per the Noise and Vibration Monitoring Program
	Site inspection following significant rainfall event	<ul style="list-style-type: none"> • Environment & Sustainability Coordinator 	Following significant rainfall event

Waste	Waste tracking and reporting	<ul style="list-style-type: none">• Environment & Sustainability Coordinator• Project engineer	As per the requirements in the SMP
Groundwater	Groundwater monitoring (as per the monitoring program embedding in the Groundwater Management Plan)	<ul style="list-style-type: none">• Environment & Sustainability Coordinator	As per Groundwater Management Plan

7 Compliance, Auditing and Reporting

7.1 Contractor Compliance

As part of all subcontract documents, all contractors will be required to comply with the Project Planning Approval and all Licences and Permits for the Waterloo ISD and the relevant environment management documents (including this CEMP). Subcontractors will not be permitted to operate under their own environmental management documentation.

All subcontractors will be required to attend the Waterloo ISD induction as well as specific toolbox talks including the Site Environmental Plan. Each subcontractor is responsible for conducting toolbox talks with their own employees. The subcontractor will maintain a record of toolbox talks it holds which includes the date and time the meeting was conducted, the individuals who attended and the specific topics addressed.

7.2 Auditing

7.2.1 Independent Annual Environmental Audit

Sydney Metro are responsible for the Environmental Audit Program as required by Project Planning Approval Condition A37, A39 and A40. The audit program will be prepared in accordance with AS/NZS ISO 19011:2014 – *Guidelines for Auditing Management Systems*. The audits will be conducted by a suitably qualified, experienced and independent team of experts in auditing. John Holland will participate in any audits where required and provide the Independent Auditor (or AA) with any information they may require to meet their responsibilities under the Conditions of Approval.

The environmental audit report will:

- Assess the environmental performance of the Waterloo ISD, and its effects on the surrounding environment;
- Assess whether the Waterloo ISD is complying with the terms of the Project Planning Approval;
- Review the adequacy of any document required under the Project Planning Approval (where applicable to Waterloo ISD); and
- Recommend measures or actions to improve the environmental performance of the Waterloo ISD, and improvements to any document (where applicable) required under the Project Planning Approval.

The audit process will be collaborative and generally include:

- Invitation for representatives from ER, AA, Sydney Metro and John Holland to attend and participate. A briefing will be scheduled prior to the audit to confirm the audit scope and provide for input from all parties into the audit checklist. Formal opening and closing meetings
- The site inspection component of the audit will utilise the ER Inspection where possible

- Audit findings will be documented in a report by exception, with relevant timeframes for action specified. Draft reports will be circulated to audit attendees for review and comment prior to finalisation.

Sydney Metro will submit a copy of the audit report to the Secretary of DPIE with a response to any recommendations contained in the audit report within six (6) weeks of completing the audit.

7.2.2 Internal audits

As required by the CEMF, Waterloo ISD Environment and Sustainability team will undertake internal environmental audits every two months after the commencement of construction. Audits will target specific areas such as waste or noise and vibration. The audits will review the environment and sustainability risks identified in the AMS, TRA and ECM to confirm the management measures are appropriate. The audit schedule and themes are indicative and will be determined based on the current risk profile.

The audit will evaluate compliance with this CEMP and associated sub plans.

7.2.3 John Holland Environmental Audits

The John Holland Corporate Audit Team will continually improve environmental systems and performance by monitoring and reviewing their effectiveness in risk-based internal and external audits to ensure compliance the Project Planning Approval, John Holland EMS and the requirements in the CEMP, Sub Plans and Procedures.

The audits will evaluate:

- Compliance with the Project Planning Approval, licences and permits;
- Compliance with this CEMP, sub plans and procedures
- Community consultation and complaint response;
- Environmental training records; and
- Environmental monitoring and inspection results.

The audits will be conducted by the John Holland Regional Environmental Manager (or delegate) or the Project Quality Manager.

John Holland Corporate Audit Team shall conduct HSE audits of the Waterloo ISD at planned intervals to provide information on whether the EMS conforms to:

- the John Holland requirements for its EMS;
- the requirements of the International Standard; and
- is effectively implemented and maintained.

When establishing the audit programme, the John Holland Corporate Audit Team shall take into consideration the environmental risk identified for the Waterloo ISD, changes affecting the Waterloo ISD and the results of previous audits.

The John Holland audit team shall:

- define the audit criteria and scope for each audit;

- select auditors and conduct audits to ensure objectivity and the impartiality of the audit process;
- ensure that the results of the audits are reported to relevant management

The Waterloo ISD team will provide resources and collaborate and participate effectively during the audit. John Holland and the Waterloo ISD teams shall retain documented information as evidence of the implementation of the audit programme and the audit results.

7.3 Reporting

7.3.1 Monthly Reporting

A monthly environment and sustainability report will be prepared in accordance with SWTC Schedule 1 Appendix F2 for inclusion in the monthly project report. The report will include the following:

- Analysis of performance against key environmental and sustainability targets including actions taken and outstanding issues;
- Compliance and performance with the CEMP;
- Details of environmental incidents or emergencies; and
- Any environmental innovations implemented on the Waterloo ISD

7.3.2 Compliance Tracking and Reporting

Monitoring and tracking of compliance against planning, licensing and permit conditions held by John Holland will be undertaken in accordance with the Sydney Metro Compliance Tracking Program developed in accordance with Condition of Approval A28 and will entail population of Sydney Metro's template for each quarter. This completed template will be forwarded to the ER for endorsement. Sydney Metro will submit the endorsed Program to the Secretary for information before commencement of works or within another timeframe agreed with the Secretary.

7.3.3 Pre-Construction Compliance Report (PCCR)

A Pre-Construction Compliance Report (PCCR) will be developed by Sydney Metro with input from John Holland and submitted to the Secretary for information one month before the commencement of construction. The PCCR will be developed in accordance with Condition of Approval A32 and will include details of how the terms of the Conditions of Approval have been complied with prior to construction and the construction commencement date.

7.3.4 Construction Compliance Report (CCR)

Throughout the duration of the Project, Sydney Metro will develop Construction Compliance Reports (CCR) with input from the John Holland Waterloo ISD team. The CCR will be submitted by Sydney Metro to the Secretary for information every six (6) months from the date of the commencement of construction.

The CCR's will include:

- a results summary and analysis of environmental monitoring;

- the number of any complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints;
- details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;
- a register of any consistency assessments undertaken and their status;
- results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit;
- a summary of all incidents notified in accordance with Condition A41 and Condition A44 of the Condition of Approval, and
- any other matter relating to compliance with the terms of this approval or as requested by the Secretary.

8 Documentation

8.1 Records

John Holland will maintain records of the following in accordance with the requirements of the CEMF:

- Site inspections, audits, monitoring, reviews or remedial actions;
- Documentation as required by performance conditions, approvals, licences and legislation;
- Modifications to site environmental documentation; and
- Other records as required by the CEMF, this CEMP and sub plans.

All environmental documents and records generated during the delivery of the works will be stored and managed using SharePoint with the following exceptions:

- Environmental monitoring data and inspection reports will be managed and stored using PPW
- Incident reports and corrective actions will be stored and managed using the JHET Reporting System.

8.2 Documentation

This CEMP, sub plans, procedures and subsequent revisions, must be authorised by the Environment and Sustainability Manager and approved by the Waterloo ISD Project Director Station. The CEMP and applicable sub plans (inclusive of embedded monitoring programs, where applicable) must be endorsed by the ER (or the AA in regards to the Construction Noise and Vibration Sub Plan) and submitted by Sydney Metro to the Secretary of the DPIE for approval no later than one month before the commencement of construction.

All other environmental documents and records, including but not limited to, procedures, checklists and forms etc. will be prepared by the Waterloo ISD Environment Team and reviewed by the Construction Manager and approved by the Environment & Sustainability Manager.

8.2.1 John Holland Documentation requirements

The John Holland EMS includes:

- documented information required by the ISO14001:2015;
- documented information determined by John Holland as being necessary for the effectiveness of the EMS

When creating and updating documented information, the Waterloo ISD team shall ensure consistency with the John Holland EMS including the following:

- identification and description (e.g. a title, date, author, or reference number);
- format (e.g. language, software version, graphics) and media (e.g. paper, electronic);
- review and approval for suitability and adequacy.

This CEMP is a 'live' and 'working' document. The Environment and Sustainability Manager will conduct regular reviews of the CEMP at intervals of not less than annually and ensure that the CEMP is formally reviewed and updated at least annually, or earlier as change requirements dictate.

Documented information of external origin determined by the Waterloo ISD to be necessary for the planning and operation of the EMS shall be identified, as appropriate, and controlled.

9 Competence, Awareness and Training

All employees will receive suitable environmental induction and training to ensure that they are aware of their responsibilities and are competent to carry out the work. Environmental requirements will be outlined during the Waterloo ISD induction and on-going training via toolbox talks, briefings, notifications and targeted aspect specific training.

9.1 Training and Awareness

A training needs analysis will be prepared for the Waterloo ISD team by the Learning and Development representative. Details of the training requirements are outlined in the Training Management Plan. Environmental training will be implemented by the Training Coordinator in consultation with the Environment and Sustainability Manager.

All John Holland operational staff will be provided with training in the requirements and implementation of this CEMP. Training in aspects outlined in Table 14 will be undertaken (as required) as the Waterloo ISD works progress.

Table 14: Training requirements

Aspect	Detail	Responsible key contributor	Deliverables
Project Induction	<p>To ensure this CEMP is effectively implemented all personnel involved with the Waterloo ISD will be required to complete the Waterloo ISD induction prior to commencing construction activities on site. The induction will include the following:</p> <ul style="list-style-type: none"> ▪ Purpose, objectives and key issues relating to the environment; ▪ Environmental policy and key performance indicators ▪ Due diligence, duty of care and responsibilities ▪ Conditions of approval and any licence requirements applicable to the Waterloo ISD ▪ Site specific issues and controls that are included in the environmental procedures ▪ the significant environmental aspects and related actual or potential environmental impacts associated with their work; ▪ Reporting procedures for environmental hazards and incidents; ▪ individuals contribution to the effectiveness of the EMS, including the benefits of enhanced environmental performance ▪ the implications of not conforming with the EMS requirements, including not fulfilling the Waterloo ISD compliance obligations 	<p>Workforce Development and Industry Participation Manager</p> <p>Environment and Sustainability Manager</p> <p>Environment & Sustainability Coordinator</p>	<ul style="list-style-type: none"> ▪ Induction materials ▪ Attendee records ▪ Completed induction assessment

Aspect	Detail	Responsible key contributor	Deliverables
	<ul style="list-style-type: none"> ▪ Communications protocols, including contact details in the event of an incident. ▪ As part of the Waterloo ISD Induction, all attendees are required to complete a Competency Assessment. <p>A visitor induction will be available which must be completed by all visitors to site. Visitors will be accompanied around the site by John Holland personnel.</p>		
Pre-start/toolbox talk	<p>Pre-starts/toolbox talks will occur at the commencement of Construction and when activities change. These will highlight the specific environmental aspects, requirements and activities being undertaken within each work area as part of ongoing training and development. The environmental component of will typically cover:</p> <ul style="list-style-type: none"> ▪ The scope and requirements of the specific ECM ▪ Familiarisation with site environmental controls and monitoring ▪ Traffic/access, location of entry/exit points, traffic routes, parking ▪ Soil and water issues and controls and dewatering and discharge requirements ▪ Air quality and dust issues and management ▪ Waste and recycling management ▪ Contamination issues and management ▪ Sensitive environmental areas and site specific issues such as no-go areas e.g. demarcated of protected vegetation or heritage items <p>Regular toolbox talks will be conducted for employees and subcontractors to maintain and improve awareness of environmental issues and management requirements. A wide range of topics will be covered over time with a focus on issues most relevant to current or upcoming works.</p>	<p>Environment and Sustainability Manager Environment & Sustainability Coordinator Site Supervisor Project Engineer</p>	<ul style="list-style-type: none"> ▪ Prestart record ▪ Toolbox record
Targeted environmental training	<p>Targeted environmental training will be provided to reflect the requirements of the construction risks and program.</p> <p>Topics may include:</p> <ul style="list-style-type: none"> ▪ Emergency preparedness and response, including spill response ▪ Heritage awareness ▪ Contamination awareness ▪ Environmental legal obligations ▪ Energy and resource usage ▪ Noise, vibration and out of hours work ▪ Specific monitoring and/or sample collection 	<p>Environment and Sustainability Manager Environment & Sustainability Coordinator</p>	<ul style="list-style-type: none"> ▪ Training record ▪ Presentation materials

Aspect	Detail	Responsible key contributor	Deliverables
	<ul style="list-style-type: none"> John Holland Global Mandatory Requirements: 9: <i>Site environmental management</i> 10: <i>Clearing, Water Management and Earthworks</i> 11: <i>Resources, Recycling and Waste Management</i> 		

9.1.1 HSE behavioural framework

John Holland’s HSE Behaviours describe a set of everyday behaviours that are expected of all people working on behalf of the Waterloo ISD. The HSE Behavioural Framework encourages a culture that serves as an operational control. At Waterloo ISD, the HSE behaviours will be implemented accordingly. The HSE Behaviours are outlined in Figure 7 (excerpt from the “Our HSE Behaviours Handout”). The Behaviours are included in the Waterloo ISD Induction material.

Theme	Everyone	Supervisors	Managers
Standards	Follow rules	Ensure compliance	Set high standards
Communications	Speak up	Encourage the team	Communicate openly
Risk management	Be mindful	Promote risk awareness	Confront risk
Involvement	Get Involved	Involve the team	Involve others

Figure 7: Overview of HSE Behavioural Framework

The framework describes the behaviours that are expected of ‘Everyone’, ‘Supervisors’ and ‘Managers’. Four themes (that are critical to any strong HSE culture) are displayed. These are ‘Standards’, ‘Communication’, ‘Risk Management’ and ‘Involvement’. These are the key elements of our strong safety culture which supports our vision.

There are twelve sets of behaviours across each of the three employee groups and the four themes, all of which are interdependent. Each of the twelve sets of behaviours are supported by a set of positive and negative statements that provide practical guidance on what is expected.

The HSE Behaviours that will be implemented will be based on the risk profile of the project, size and scope, in accordance with the Waterloo ISD HSE Behaviours Implementation Plan.

Below is an example of the guidance that sits behind one of the behaviours. Further details will be provided in the Waterloo ISD Induction.

Everyone's HSE Behaviours <i>(including Supervisors and Managers)</i> To improve our HSE performance			
	<i>I will...</i>		<i>I will not...</i>
STANDARDS	Follow rules	<input type="radio"/> EP1.1 Learn the standards, rules and procedures that apply to me in my job <input type="radio"/> EP1.2 Follow rules and use the right procedure for the job <input type="radio"/> EP1.3 Identify impractical rules and procedures, and suggest improvements promptly	<input type="radio"/> EN1.4 Ignore rules and procedures <input type="radio"/> EN1.5 Disregard the consequences of not following a rule or procedure <input type="radio"/> EN1.6 Rush or take short cuts to get the job done <input type="radio"/> EN1.7 Fail to seek approval or advice if the plan changes or deviates

Figure 8: Example of specific HSE Behaviours

9.2 Training Records

Records of all training activities, including inductions, will be maintained by the Human Resources team. Records will include the name and role of the attendee, the name of the course, the name of the trainer, when the training was undertaken, and, where applicable, reference to the document controlled version of the material presented, and a copy of the assessment completed.

9.3 Subcontractor management

John Holland will build effective relationships with subcontractors and suppliers to ensure they positively contribute to the environmental management and sustainability performance of the Waterloo ISD Works by:

- Considering environment and sustainability proactively when procuring all supplier agreements and subcontracts including:
- Preparing Environment and Sustainability Subcontractor requirements to be included in requests for tenders to set out sustainability and workforce targets
- Using the pre-award tender interview questionnaire to request detailed information on environmental performance, sustainability compliance and workforce details
- Using environment, sustainability and workforce criteria in selecting subcontractors and suppliers
- Writing key sustainability and workforce requirements into contracts where relevant
- Assessing compliance with local regulations and human rights standards for proposed supply contracts with a value over \$5M where the proposed supplier undertakes some manufacturing in a developing country

As part of their subcontract all sub-contractors will be required to comply with the Project Planning Approval and all Licences and Permits and the relevant John Holland environment management documentation. All subcontractors undertaking work at the Waterloo ISD will be required to comply

with this CEMP. Subcontractors will not be permitted to operate under their own environmental management documentation.

All subcontractors will be required to participate in or complete a risk assessment including the potential environmental risks associated with their particular work package and comply with all relevant John Holland environment and planning documents. All subcontractors will be required to attend the Waterloo ISD Induction as well as a specific site induction/prestart/toolbox talks relevant to the area they are working in. Subcontractors will be required to attend formal training courses and/or site toolbox talks at the direction of John Holland. In addition, subcontractors will be required to be inducted into ECM relevant to their work. Each subcontractor is responsible for conducting toolbox talks with their own employees. The subcontractor will maintain a record of toolbox talks it holds which includes the date and time the meeting was conducted, the individuals who attended and the specific topics addressed.

10 Communication and Consultation

The Waterloo ISD has established the processes needed for internal and external communications relevant to the EMS, including:

- on what it will communicate;
- when to communicate;
- with whom to communicate;
- how to communicate;

John Holland will effectively and openly communicate and consult with external and internal stakeholders to create an environment of trust, openness and involvement. Section 5 includes details for key communication responsibilities.

John Holland shall retain documented information as evidence of its communications, as appropriate.

10.1 Coordination Meetings

Environment and Planning Coordination meetings attended by representatives from the Environment and Sustainability Team, ER and representatives from Sydney Metro will be held fortnightly (unless otherwise agreed) to discuss:

- Environment planning approval documentation and approvals progress
- Any observations, issues and trends arising from ER Inspections
- The management of any environmental complaints
- Any non-conformance notices
- Upcoming works

This meeting is an 'open' forum for discussions of environment and planning related items. Meetings will be minuted and actions allocated. The minutes will be distributed via Teambinder.

10.2 Internal communication

Internal communication will include written instruction, drawings, specifications, method statements, risk assessments, contracts and sub-contracts.

Internal communication regarding the notification of events, incidents and associated environmental actions will be managed using John Holland event tracking software (JHET). Internal communication of the Waterloo ISD performance will also be undertaken via monthly environmental reporting using the John Holland reporting software, Project Pack and JHET.

10.3 Stakeholder consultation

The Project Planning Approval Condition C3 outlines the consultation requirements with the relevant government agencies for the relevant Sub Plan. The CEMF further specifies the consultation requirements. The approach to consultation with agencies is outlined below:

- Agencies provided with copies of the relevant Sub Plan for review and an opportunity to provide comment/feedback
- Agency workshop to provide an overview of the construction methodology and the environmental aspects and management measures
- Sub plan will be amended to incorporate comments (as applicable)
- Response provided to agencies demonstrating close out of each comment.

The specific consultation requirements for Waterloo ISD as outlined in Condition of Approval C3 and C9 and allocated in the CEMF is detailed in Table 15.

Table 15: Consultation requirements for Waterloo ISD

Sub Plan	Agency
Noise and Vibration	City of Sydney Council
Groundwater	NSW Department of Primary Industries Water
Heritage	Heritage Council (or its delegate) City of Sydney Council
Monitoring program	Agency
Noise and Vibration	EPA and City of Sydney Council
Groundwater	NSW Department of Primary Industries Water

A register of comments from agencies will be managed by the Environment and Sustainability Manager. The register will include details of how each comment has been addressed and provided to DPIE during the Sub Plan approval process.

10.3.1 Working Groups

Separate forums on the management of key environmental issues such as contamination and construction noise and vibration may be held from time to time. Where relevant, John Holland will invite Sydney Metro, the ER and AA to attend along with John Holland's specialist environmental consultants. The purpose of these forums is to provide a proactive and comprehensive understanding of the issues and intended management approach.

11 Monitoring, measurement and analysis

11.1 Environment and Sustainability Inspections

Site inspections will be used to identify potential environmental issues and ensure compliance against regulatory requirements. A risk based approach will be adopted for all inspections, in general, environment and sustainability inspections will include:

- Erosion and Sediment Control
- Contamination investigations (if being undertaken)
- Noise and Vibration Controls
- Air quality and Dust Controls
- Onsite Waste Management and Recycling
- Site tidiness and other visual amenity considerations including graffiti.

Actions from inspections will be discussed on site with high risk actions to be closed out within 24 hours, medium risk actions within 2 – 3 days and low risk actions to be closed out within a suitable timeframe agreed at the time of the inspection. The actions will be recorded in the John Holland Project Pack Web (PPW) system (or equivalent).

11.1.1 Daily Inspections

The site supervisor, as part of their daily duties will conduct inspection of the site. These inspections will identify environmental issues observed and detail any required actions. The inspection will be recorded in the daily diary and any actions documented as part of the shift handover.

11.1.2 Weekly Inspections

The Environment and Sustainability Manager and/or Environment and Sustainability Coordinator, accompanied by site supervisor (or delegate) will conduct environmental inspections on a weekly basis and pre / post a significant rainfall event (greater than 20mm in 24hours).

11.1.3 ER Inspections

Regular site inspections will be completed by the ER and Sydney Metro representatives on a fortnightly basis or at a frequency agreed with all parties. The ER will prepare an inspection checklist documenting the inspection and any observations and actions with an agreed close out timeframe based on the environmental risk of the action.

11.1.4 AA Inspections

The AA may request to undertake inspections to monitor the implementation of noise and vibration requirements. The inspections may be required out of hours to review requirements of the permits are implemented. The Waterloo ISD Environment and Sustainability Coordinator will facilitate the inspection with the AA. The AA will prepare an inspection checklist documenting the inspection and any observations and actions with an agreed close out timeframe based on the environmental risk of the action.

11.1.5 Shutdown Inspections

Prior to any period where the Waterloo ISD will be shut down for more than four days (i.e. long weekends, the Christmas period, etc.) a shutdown inspection to identify any additional environmental controls needed to minimise the potential for environmental impacts during the site shutdown period will be undertaken by the Environmental Coordinator. Copies of these internal inspection records will be provided to Sydney Metro, the ER for information.

11.1.6 External Stakeholder Inspections

In monitoring environmental performance and compliance with any conditions specified in the Project Planning Approval, an authorised DPIE Officer may undertake a site inspection of the Waterloo ISD. The Waterloo ISD team is obliged to grant access and assist DPIE during all site inspections. DPIE officers inspecting the site will be asked to undertake a Visitors Induction, remain with, and follow the directions of their Waterloo ISD escort at all times to ensure that they are aware of safety requirements and maintain their safety while on site.

Where required, an authorised EPA Officer may undertake a site inspection of the Waterloo ISD if monitoring compliance with the POEO Act 1997. The Waterloo ISD team is obliged to grant access and assist EPA during all site inspections. EPA Officers inspecting the site will be asked to undertake a Visitors Induction, remain with, and follow the directions of their Waterloo ISD escort at all times to ensure that they are aware of safety requirements and maintain their safety while on site.

11.2 Non-Compliance management

An environmental or sustainability non-compliance can generally be defined as a failure to comply with:

- Relevant environmental legislation
- Project Planning Approval, Licence or Permit
- Station Delivery Deed

Details of the non-compliance will be documented on a non-conformance report which include the cause, proposed remediation action and close out requirements. Sydney Metro, the ER, the AA or the EPA (if applicable) may raise non-compliances against environmental requirements.

Where a non-compliance is raised as part of an audit or an incident or complaint investigation the audit, incident or complaint report may be used to close out the non-conformance and it is not necessary to raise a separate non-compliance reporting process.

Management system non-compliances identified during a John Holland audit will be handled in accordance with the John Holland EMS – Corrective and Preventative Action Procedure by the Environment and Sustainability Manager. The Environment and Sustainability Manager is responsible for the investigation, tracking and ensuring appropriate closeout of non-compliance, corrective and preventative actions.

Reporting of non-compliance is detailed in Section 7.3.

11.2.1 Corrective and Preventative Actions

Corrective actions will be identified as follows:

- Where an issue is identified and raised, the Environment and Sustainability Manager or delegate will liaise with the appropriate Waterloo ISD personnel or qualified person(s) to determine the most appropriate corrective action to implement.
- Where assessed by Environment and Sustainability Manager to be appropriate, the corrective action will be actioned through the PPW.

Preventive actions will be identified as follows:

- Environmental events, relevant incidents, complaints, audit findings and non-compliance are discussed at the Planning, Environment and Sustainability Coordination Meetings (see Section 10). Trends relating to environmental incidents and non-compliance findings are reviewed at these meetings to identify any reoccurring issues that are indicative of the need to take preventative action. Any member of the Waterloo ISD team, including subcontractors can contribute and provide suggestion to any required or appropriate preventative action.
- Where assessed by the Environment and Sustainability Manager as necessary, a preventive action will be raised and action undertaken using PPW.

11.2.2 Environmental Improvement Notice

An improvement notice provides a mechanism to elevate ongoing unresolved actions or major actions within the environmental inspection reports. Where an improvement notice is raised as part of the inspection it will be detailed on the environmental inspection. Where specific actions have

been put on the improvement notice, the report will be forwarded to the Project Director Station for information. The need for a non-compliance report to be raised will be considered if the action is not closed out in accordance with the priority indicated on the inspection report. Waterloo ISD, the ER or Sydney Metro can nominate specific actions to be placed on Environmental Improvement Notice.

11.3 Management review

John Holland management conduct yearly reviews of the John Holland EMS, to ensure its continuing suitability, adequacy and effectiveness. When the EMS review is complete an update of system improvements is communicated to all employees.

The management review shall include consideration of:

- the status of actions from previous management reviews;
- changes in:
 1. external and internal issues that are relevant to the environmental management system;
 2. the needs and expectations of interested parties, including compliance obligations;
 3. its significant environmental aspects;
 4. risks and opportunities;
- the extent to which environmental objectives have been achieved;

- information on the organisation's environmental performance, including trends in:
 1. nonconformities and corrective actions;
 2. monitoring and measurement results;
 3. fulfilment of its compliance obligations;
 4. audit results;
- adequacy of resources;
- relevant communication(s) from interested parties, including complaints;
- opportunities for continual improvement

The outputs of the management review shall include:

- conclusions on the continuing suitability, adequacy and effectiveness of the EMS;
- decisions related to continual improvement opportunities;
- decisions related to any need for changes to the environmental management system, including resources;
- actions, if needed, when environmental objectives have not been achieved;
- opportunities to improve integration of the EMS with other business processes, if needed;
- any implications for the strategic direction of the organisation
- review of this CEMP, sub plans and procedures will be completed as part of this review process. Where required updates to the documents will be made and endorsement/approval requested in accordance with Section 8.2.

Management reviews are conducted at project level through the internal project reports and/or John Holland HSEQ Valuations Report. John Holland shall retain documented information as evidence of the results of management reviews.

12 Incident and Emergency Management

12.1 Environmental Incident Classification

Environmental incidents will be classified by the Environment and Sustainability Manager in consultation with the Project Director Station. All incidents will be reported;

- Using the John Holland incident management system JHET - in accordance with the John Holland incident classification matrix (Appendix D).
- In accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure Version 5.1 (SM-17-00000096).

12.2 Environmental Incident Response and Notification

The immediate response to all incidents is to make the area safe and undertake measures to prevent further environmental harm. An assessment is made in consultation with the Environment and Sustainability Manager to ensure that responses do not result in further harm. For further details see the Emergency Response Plan.

The Project Director Station, Environment and Sustainability Manager and Stakeholder and Community Relations Manager are to be notified immediately in the event of any Class 1, 2 and 3 environmental incidents or procedural or legal breaches.

The Project Director Station will notify Sydney Metro of any incidents. Sydney Metro will notify the Secretary as soon as possible and in any event within 24 hours of any incident as required by Project Planning Approval A41. The incident notification under Condition A41 must include the time and date of the incident, and must identify any non-conformance with the CSSI Approval as required by Condition A42.

Incident notification will also be provided by the Environment and Sustainability Manager to the EPA (as required by the POEO Act), the ER and AA (for noise and vibration incidents). This notification will be done in accordance with the “*Sydney Metro – Environmental Incident and Non-compliance Reporting Procedure*” (version 5.1, 18 February 2019).

Under Condition A24(f) the ER will be provided by the Environment and Sustainability Manager with the incident notification for review prior to Sydney Metro submitting to the Secretary.

If statutory notification is given to the EPA under the POEO Act, the notification will also be provided by the Environment and Sustainability Manager to Sydney Metro to provide to the Secretary for information within 24 hours of the notification being given to the EPA as required by Condition A44.

An incident is defined as per the Project Planning Approval as the following:

An occurrence or set of circumstances that causes, or threatens to cause, material harm to the environment, community or any member of the community, being actual or potential harm to the health or safety of human beings or to threatened species, endangered ecological communities or ecosystems that is not trivial

Note: This meaning of “material harm” applies for the purpose of this approval only.

In the event that emergency construction is required in order to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm John Holland will notify Sydney Metro, the AA, the ER and the EPA (if applicable) of the need for those activities or work. John Holland will also use best endeavours to notify all affected sensitive receivers of the likely impact and duration of those works.

12.3 Environmental Incident Investigations

Before any project staff member is questioned by officers of a statutory authority, they will endeavour to consult the Project Director Station to determine whether Legal Council is needed.

Regulatory inspectors must be given appropriate access and assistance during their own investigations.

An investigation team will be established based on the severity of the incident and the experience of personnel. The investigation team will have a mix of operational and environmental personnel.

12.4 Corrective and Preventative Actions

Following an incident, corrective and preventative actions will be identified, assigned to the appropriate person/s and closed out in accordance with the appropriate time frames set in response to the circumstances. Examples of corrective and preventative actions that may be raised in response to an environmental incident may include:

- Site clean-up and reinstatement/implementation of controls
- Amending environmental or other procedures and forms/permits
- Conducting toolbox talks and/or other training
- Preparing and distributing Environmental Alerts
- Increased site monitoring

Corrective and preventative actions will be developed on a case by case basis and shall be appropriate to the significance of the effects of the nonconformities encountered, including the environmental impact(s).

Time frames are set to ensure damage incurred is rectified and any chance of recurrence is eliminated as soon as practicable. The timeframe for close-out of corrective and preventative actions in response to an environmental incident is dependent upon the nature and circumstances of the incident, and is subject to the completion of incident investigation processes. Certain actions would require an immediate response (e.g. site clean-up) while others may take several weeks to close out (e.g. obtaining additional approvals). As an indicative target, corrective and preventative actions that arise from incidents would be closed out within 3 days to a week.

The action database of the HSE Reporting System (JHET) will be used to assign and track corrective actions. All corrective actions will include reference to the relevant incident record for ease of tracking.

Periodically the Environment and Sustainability Manager will, identify trends in incidents (as a minimum, all Class 1 and Class 2 incidents) and trends in root causes to suggest the nature of preventative actions which are warranted. The Project Director Station will approve actions to address incident occurrences and incident and root cause trends. Actions will be managed using JHET. Reviews will also identify lessons learnt and if considered necessary share them with JH corporate and more broadly in the construction industry.

Any requirements of the Secretary or Relevant Public Authority (as determined by the Secretary) to address the cause or impact of an incident reported in accordance with Condition of Approval A41, A42 & A44 (refer to section 12.2), must be met within the timeframe determined by the Secretary or relevant public authority.

12.5 Accountable Culture Tool

The John Holland Accountable Culture Tool (ACT) is designed for line managers to help them to understand, categorise and address appropriate actions of their staff, work force and subcontractors in a fair and just way.

The ACT is a step-by step decision making tool that provides managers with a structured process to address an event and the people involved in a constructive way and not simply react on the outcome. It also encourages the recognition of positive performance. The ACT will be referenced during incident investigations.

12.6 Emergency preparedness and response

An Emergency Response Plan that addresses all identified potential high risk environmental emergencies and incorporates the Pollution Incident Response Management Plan required under the POEO Act has been developed. The Emergency Response Plan will be updated in response to audit findings and reviews or when there are significant changes to activities or in response to revised and new risk assessments.

In accordance with the Emergency Response Plan, emergency response drills will be conducted. The emergency scenario of the drills will include environmental incidents, be rotated to avoid repetition and be relevant to the activities occurring at the time or to commence.

Where testing and evaluation shows a deficiency in either emergency preparations or the Emergency Response Plan, appropriate corrective and preventive actions will be raised, implemented and closed out.

Appendix A – Environmental Policy Statement

Waterloo ISD commitment to Environmental Management

To value the natural environment and communities in which we work.

Our goal across all Waterloo ISD activities is to use resources efficiently, respond to climate change, prevent pollution, enhance and protect the environment and our heritage.

OUR APPROACH

John Holland's four values of caring, empowering, imaginative and future-focused are the platform for our everyday interactions. We use these values to guide our approach to the environment. The Waterloo ISD team has adopted these four values to deliver the project.

We care deeply about what we do and how it affects the environment now and for the future by:

- Driving a strong culture to respect the environment across the business in our offices, on our projects and with our joint venture partners;
- Prioritising the environment, the community, sustainable products and resource efficiency in our decision making;
- Providing best practice training and education to our people to build awareness and capability to protect the environment and respect the communities in which we work and live.

We gain trust through action by:

- Empowering our people, partners and subcontractors to speak up about how we can better protect and enhance the environment;
- Encouraging participation and collaboration to achieve sound environmental performance and outcomes;
- Driving accountability by ensuring everyone is responsible for valuing and protecting the environment.

We push the boundaries by:

- Focusing on continual learning and improvement by reviewing performance, capturing and sharing lessons learnt and celebrating successes;
- Exploring and introducing new technologies and approaches that minimise impacts on the environment and provide cost effective solutions that are resource efficient;
- Having a transparent critical risk management process that helps us to continuously identify opportunities and improvements to our systems and processes.

We're in it for the long, long term by:

- Exceeding our legislative, customer and other mandatory requirements;
- Establishing and maintaining an effective management system;
- Ensuring our work leaves a positive legacy for the communities we serve and the environments we operate in.

Andrew Knispel
Waterloo ISD
Project Director – Station
John Holland Pty Ltd

Appendix B - Approvals and Compliance Matrix

Project Planning Approval (Application No. SSI 15_7400) including modifications		
Reference	Detail	Document Reference
A9	Where the terms of this approval require consultation with identified parties, details of the consultation undertaken, matters raised by the parties, and how the matters were considered must accompany the strategies, plans, programs, reviews, audits, protocols and the like submitted to the Secretary.	Section 10.1
A16	<p>Ancillary facilities that are not identified by description and location in the IS as amended by the documents listed in A1, must meet the following criteria, unless otherwise approved by the Secretary:</p> <p>(a) the facility is development of a type that would, if it were not for the purpose of the CSSI, otherwise be exempt or complying development; or</p> <p>(b) the facility is located as follows:</p> <ol style="list-style-type: none"> i. at least 50 metres from any waterway unless an erosion and sediment control plan is prepared and implemented so as not to adversely affect water quality in the waterway in accordance with Managing Urban Stormwater series; ii. within or adjacent to land upon which the CSSI is being carried out unless it can be demonstrated that performance criteria established in this approval can be met and that there will be a reduction in impact at other sites and a reduction in the construction program; iii. with ready access to a road network; iv. to prevent heavy vehicles travelling on local streets or through residential areas in order to access the facility, except as identified in the EIS and amended by the documents listed in A1; v. on level land; vi. so as to be in accordance with the Interim Construction Noise Guideline (DECC 2009) or as otherwise agreed in writing with affected landowners and occupiers; vii. so as not to require vegetation clearing beyond the extent of clearing approved under other terms of this approval except as approved by the ER as minor clearing; viii. so as not to have any impact on heritage items (including areas of archaeological sensitivity) beyond the impacts identified, assessed and approved under other terms of this approval; ix. so as not to unreasonably interfere with lawful uses of adjacent properties that are being carried out at the date upon which construction or establishment of the facility is to commence; x. to enable operation of the ancillary facility during flood events and to avoid or minimise, to the greatest extent practicable, adverse flood impacts on the surrounding environment and other properties and infrastructure; and xi. so as to have sufficient area for the storage of raw materials to minimise, to the greatest extent practicable, the number of deliveries required outside standard construction hours. 	Section 4.4.1

Project Planning Approval (Application No. SSI 15_7400) including modifications		
Reference	Detail	Document Reference
A17	<p>Before establishment of any ancillary facility that satisfies the criteria in Condition A16, the Proponent must prepare an Ancillary Facilities Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment and operation of the ancillary facility. The Ancillary Facilities Management Plan must be prepared in consultation with the EPA and the relevant council(s) and submitted to the Secretary and EPA for information one month before installation of the relevant ancillary facilities. The Ancillary Facilities Management Plan must detail the management of the ancillary facilities and include:</p> <p>(a) a description of activities to be undertaken during construction (including scheduling of construction);</p> <p>(b) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the CSSI; and</p> <p>(c) details of how the activities described in subsection (a) of this condition will be carried out to:</p> <p>i. meet the performance outcomes stated in the EIS as amended by documents listed in A1; and</p> <p>ii. manage the risks identified in the risk analysis undertaken in subsection (b) of this condition.</p>	Section 4.4.1
A18	<p>Minor ancillary facilities comprising lunch sheds, office sheds, portable toilet facilities or the like, that are not identified in the EIS as amended by the documents listed in A1 and which do not satisfy the criteria set out in Condition A16 of this approval must satisfy the following criteria:</p> <p>(a) have no greater environmental and amenity impacts than those that can be managed through the implementation of environmental measures detailed in the CEMP required under Condition C1 of this approval; and</p> <p>(b) have been assessed by the ER to have:</p> <p>i. minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts;</p> <p>ii. minimal environmental impact with respect to waste management and flooding; and</p> <p>iii. no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.</p>	Section 4.4.1
A19	<p>Boundary fencing that incorporates screening must be erected around all ancillary facilities that are adjacent to sensitive receivers for the duration of construction unless otherwise agreed with Relevant Council(s), and affected residents, business operators or landowners.</p>	Visual Amenity Management Sub Plan
A20	<p>Boundary screening required under Condition A19 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.</p>	Visual Amenity Management Sub Plan

Project Planning Approval (Application No. SSI 15_7400) including modifications

Reference	Detail	Document Reference
A22	<p>A suitably qualified and experienced Environmental Representative (ER) who is independent of the design and construction personnel must be nominated by the Proponent, approved by the Secretary and engaged for the duration of construction of the CSSI. Additional ERs may be engaged for the purpose of this condition in which case the obligations to be carried out by an ER under the terms of this approval may be satisfied by any ER that is approved by the Secretary. The details of nominated ER(s) must be submitted to the Secretary for approval no later than one month before the commencement of works, or within another timeframe agreed with the Secretary.</p>	Section 5.4
A23	<p>Works must not commence until an ER nominated under Condition A22 of this approval in respect of such works has been approved by the Secretary.</p>	Section 5.4
A24	<p>From commencement of construction until completion of construction, the approved ER must:</p> <ul style="list-style-type: none"> (a) receive and respond to communications from the Secretary in relation to the environmental performance of the CSSI; (b) consider and inform the Secretary on matters specified in the terms of this approval; (c) consider and recommend any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review documents identified in Conditions C1, C3 and C9 and any other documents that are identified by the Secretary, to ensure they are consistent with requirements in or under this approval and if so: <ul style="list-style-type: none"> i. make a written statement to this effect before submission of such documents to the Secretary (if those documents are required to be approved by the Secretary), or ii. make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Secretary for information or are not required to be submitted to the Secretary); (e) regularly monitor the implementation of environmental management related documents to ensure implementation is being carried out in accordance with what is stated in the document and the terms of this approval; (f) review the Proponent's notification of incidents in accordance with Condition A41 of this approval; (g) as may be requested by the Secretary, help plan, attend or undertake Department audits of the CSSI, briefings, and site visits; (h) if conflict arises between the Proponent and the community in relation to the environmental performance of the CSSI, follow the procedure in the Community Communication Strategy approved under Condition B3 of this approval to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary; (i) review any draft consistency assessment that may be carried out by the Proponent, and provide advice on any additional mitigation measures required to minimise the impact of the work; 	Section 5.4

Project Planning Approval (Application No. SSI 15_7400) including modifications

Reference	Detail	Document Reference
	(j) consider any minor amendments to be made to the documents listed in Conditions C1, C3 and C9 and any document that requires the approval of the Secretary (excluding noise and vibration documents) that comprise updating or are of an administrative or minor nature, and are consistent with the terms of this approval and the documents listed in Conditions C1, C3 and C9 or other documents approved by the Secretary and, if satisfied such amendment	
A25	<p>A suitably qualified and experienced Acoustics Advisor (AA), who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of construction and for no less than six (6) months following operation of the CSSI.</p> <p>The details of the nominated AA must be submitted to the Secretary for approval no later than one (1) month before commencement of works, or within another timeframe as agreed with the Secretary. The Proponent may nominate additional suitably qualified and experienced persons to assist the lead Acoustics Advisor for the Secretary's approval.</p> <p>The Proponent must cooperate with the AA by:</p> <ul style="list-style-type: none"> (a) providing access to noise and vibration monitoring activities as they take place; (b) providing for review of noise and vibration plans, assessments, monitoring reports, data and analyses undertaken; and (c) considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted. 	Section 5.5
A26	<p>Any activities generating noise and vibration in excess of the Noise Management Level derived from the Interim Construction Noise Guideline must not commence until an AA, nominated under Condition A25 of this approval, has been approved by the Secretary.</p>	Section 5.5
A27	<p>The approved AA must:</p> <ul style="list-style-type: none"> (a) receive and respond to communication from the Secretary in relation to the performance of the CSSI in relation to noise and vibration; (b) consider and inform the Secretary on matters specified in the terms of this approval relating to noise and vibration; (c) consider and recommend, to the Proponent, improvements that may be made to work practices to avoid or minimise adverse noise and vibration impacts; (d) review all noise and vibration documents required to be prepared under the terms of this approval and, should they be consistent with the terms of this approval, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary); (e) regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of this approval to ensure implementation is in accordance with what is stated in the document and the terms of this approval; (f) review the Proponent's notification of noise and vibration incidents in accordance with Condition A41 of this approval; (g) in conjunction with the ER (where required), the AA must: 	Section 5.5

Project Planning Approval (Application No. SSI 15_7400) including modifications

Reference	Detail	Document Reference
	<p>i. consider requests for out of hours construction activities and determine whether to endorse the proposed activities in accordance with Condition E47;</p> <p>ii. as may be requested by the Secretary or Complaints Mediator, help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits;</p> <p>iii. if conflict arises between the Proponent and the community in relation to the noise and vibration performance during construction of the CSSI, follow the procedure in the Community Communication Strategy approved under Condition B3 of this approval to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary;</p> <p>iv. consider relevant minor amendments made to any noise and vibration document approved by the Secretary that require updating or are of an administrative or minor nature, and are consistent with the terms of this approval and the document approved by the Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval;</p> <p>v. assess the noise impacts of minor ancillary facilities as required by Condition A18 of this approval; and</p> <p>vi. prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Noise and Vibration Report detailing the AAs actions and decisions on matters for which the AA was responsible in the preceding month (or other timeframe agreed with the Secretary). The Noise and Vibration Report must be submitted within seven (7) days following the end of each month for the duration of construction of the CSSI, or as otherwise agreed with the Secretary.</p>	
A29	The Compliance Tracking Program must be endorsed by the ER then submitted to the Secretary for information before the commencement of works or within another timeframe agreed with the Secretary	Section 7.3.2
A30	The Compliance Tracking Program in the form required under Condition A28 of this approval must be implemented for the duration of construction and for a minimum of one (1) year following commencement of operation, or for a longer period as determined by the Secretary based on the outcomes of independent environmental audits, Environmental Representative Reports and regular compliance reviews submitted through Compliance Reports. If staged operation is proposed, or operation is commenced of part of the CSSI, the Compliance Tracking Program must be implemented for the relevant period for each stage or part of the CSSI.	Section 7.3.2
A31	A Pre-Construction Compliance Report must be prepared and submitted to the Secretary for information no later than one month before the commencement of construction or within another timeframe agreed with the Secretary.	Section 7.3.3
A32	The Pre-Construction Compliance Report must include:	Section 7.3.4

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Reference	Detail	Document Reference
	(a) details of how the terms of this approval that must be addressed before the commencement of construction have been complied with; and (b) the commencement date for construction.	
A33	Construction must not commence until the Pre-Construction Compliance Report has been submitted to the Secretary	Section 7.3.3
A34	Construction Compliance Reports must be prepared and submitted to the Secretary for information every six (6) months from the date of the commencement of construction or within another timeframe agreed with the Secretary, for the duration of construction. The Construction Compliance Reports must include: (a) a results summary and analysis of environmental monitoring; (b) the number of any complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints; (c) details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period; (d) a register of any consistency assessments undertaken and their status; (e) results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit; (f) a summary of all incidents notified in accordance with Condition A41 and Condition A44 of this approval; and (g) any other matter relating to compliance with the terms of this approval or as requested by the Secretary.	Section 7.3.4
A37	An Environmental Audit Program for independent annual environmental auditing against the terms of this approval must be prepared in accordance with AS/NZS ISO 19011:2014 - Guidelines for Auditing Management Systems and submitted to the Secretary for information no later than one month before the commencement of construction or within another timeframe agreed with the Secretary.	Section 7.2
A38	The Environmental Audit Program, as submitted to the Secretary, must be implemented for the duration of construction and operation.	Section 7.2
A39	All independent environmental audits of the CSSI conducted under Conditions A35 and A36 must be conducted by a suitably qualified, experienced and independent team of experts in auditing and be documented in an Environmental Audit Report which: (a) assesses the environmental performance of the CSSI, and its effects on the surrounding environment; (b) assesses whether the project is complying with the terms of this approval; (c) reviews the adequacy of any document required under this approval; and (d) recommends measures or actions to improve the environmental performance of the CSSI, and improvements to any document required under this approval.	Section 7.2
A40	The Proponent must submit a copy of the Environmental Audit Report to the Secretary with a response to any recommendations contained in the audit report within six (6) weeks of completing the audit, or within another timeframe agreed with the Secretary.	Section 7.2

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Reference	Detail	Document Reference
A41	The Secretary must be notified as soon as possible and in any event within 24 hours of any incident.	Section 12.2
A42	Notification of an incident under Condition A41 of this approval must include the time and date of the incident, details of the incident and must identify any non-compliance with this approval.	Section 12.2
A43	Any requirements of the Secretary or Relevant Public Authority (as determined by the Secretary) to address the cause or impact of an incident reported in accordance with Condition A41 of this approval, must be met within the timeframe determined by the Secretary or relevant public authority.	Section 12.4
A44	If statutory notification is given to the EPA as required under the POEO Act in relation to the CSSI, such notification must also be provided to the Secretary for information within 24 hours after the notification was given to the EPA.	Section 12.2
B1	A Community Communication Strategy must be prepared to facilitate communication between the Proponent, and the community (including Relevant Councils, adjoining affected landowners and businesses, and others directly impacted by the CSSI), during the design and construction of the CSSI and for a minimum of 12 months following the completion of construction of the CSSI.	Community Communication Strategy.
B2	The Community Communication Strategy must: <ul style="list-style-type: none"> (a) identify people or organisations to be consulted during the design and construction phases; (b) set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the CSSI; (c) identify opportunities to provide accessible information regarding regularly updated site construction activities, schedules and milestones at each construction site including use of construction hoardings to provide information regarding construction, specific to the location; (d) identify opportunities for the community to visit construction sites (taking into consideration workplace, health and safety requirements); (e) involve construction personnel from each construction site in engaging with the local community; (f) provide for the formation of issue or location-based community forums that focus on key environmental management issues of concern to the relevant community(ies) for the CSSI; (g) set out procedures and mechanisms: <ul style="list-style-type: none"> i. through which the community can discuss or provide feedback to the Proponent; ii. through which the Proponent will respond to enquiries or feedback from the community; and iii. to resolve any issues and mediate any disputes that may arise in relation to environmental management and delivery of the CSSI. 	Community Communication Strategy.
B3	The Community Communication Strategy must be submitted to the Secretary for approval no later than three months from the date of this approval or one (1) month before commencement of any work, whichever is the latter.	Community Communication Strategy
B4	Work for the purposes of the CSSI must not commence until the Community Communication Strategy has been approved by the Secretary, or within another timeframe agreed with the Secretary.	Community Communication

Project Planning Approval (Application No. SSI 15_7400) including modifications

Reference	Detail	Document Reference
		Strategy
B5	The Community Communication Strategy, as approved by the Secretary, must be implemented for the duration of the works and for 12 months following the completion of construction.	Community Communication Strategy
B6	A Complaints Management System must be prepared before the commencement of any works in respect of the CSSI and be implemented and maintained for the duration of works and for a minimum for 12 months following completion of construction of the CSSI.	Community Communication Strategy
B7	The Complaints Management System must include a Complaints Register to be maintained recording information on all complaints received about the CSSI during the carrying out of any works associated with the CSSI and for a minimum of 12 months following the completion of construction. The Complaints Register must record the: <ul style="list-style-type: none"> (a) number of complaints received; (b) number of people affected in relation to a complaint; and (c) nature of the complaint and means by which the complaint was addressed and whether resolution was reached, with or without mediation. 	Community Communication Strategy
B8	The Complaints Register must be provided to the Secretary upon request, within the timeframe stated in the request.	Community Communication Strategy
B9	The following facilities must be available within one (1) month from the date of this approval and for 12 months following the completion of construction and appropriately broadcast to collect community enquiries and complaints: <ul style="list-style-type: none"> (a) a 24 hour telephone number for the registration of complaints and enquiries about the CSSI; (b) a postal address to which written complaints and enquires may be sent; (c) an email address to which electronic complaints and enquiries may be transmitted; and (d) place-based community manager for each of the station locations available to meet with community members on request. 	Community Communication Strategy
B10	The telephone number, postal address and email address required under Condition B9 of this approval must be published in a newspaper circulating in the local area and on site hoarding at each construction site before commencement of construction and published in the same way again before commencement of operation. This information must also be provided on the website required under Condition B15 of this approval.	Community Communication Strategy
B11	A Community Complaints Mediator that is independent of the design and construction personnel must be nominated by the Proponent, approved by the Secretary and engaged during all works associated with the CSSI. The nominated Community Complaints Mediator must be submitted to the Secretary for approval within one month of the date of this approval or within another timeframe agreed with the Secretary.	Community Communication Strategy

Project Planning Approval (Application No. SSI 15_7400) including modifications

Reference	Detail	Document Reference
B12	<p>The role of the Community Complaints Mediator must address any complaint where a member of the public is not satisfied by the Proponent's response. Any member of the public that has lodged a complaint which is registered in the Complaints Management System identified in Condition B6 may ask the Community Complaints Mediator to review the Proponent's response. The application must be submitted in writing and the Community Complaints Mediator must respond within 28 days of the request being made or other specified timeframe agreed between the Community Complaints Mediator and the member of the public.</p>	Community Communication Strategy
B13	<p>The Community Complaints Mediator will:</p> <ul style="list-style-type: none"> (a) review the Proponent's unresolved disputes between the project and members of the public if the procedures and mechanisms under Condition B2(g)(iii) do not satisfactorily address complaints; and (b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes. 	Community Communication Strategy
B14	<p>The Community Complaints Mediator will not act before the Proponent has provided an initial response to a complaint and will not consider issues such as property acquisition where other dispute processes are provided for in this approval, or clear government policy and resolution processes are available, or matters which are not within the scope of the CSSI.</p>	Community Communication Strategy
B15	<p>A website providing information in relation to the CSSI must be established before commencement of works and maintained for the duration of construction, and for a minimum of 12 months following the completion of construction or other timeframe as agreed with the Secretary. The following up-to-date information (excluding confidential, private and commercial information or other documents as agreed to by the Secretary) must be published prior to the relevant works commencing, or in the case of documents prepared in accordance with E66 and E67 when finalised in accordance with the requirements of this approval, and maintained on the website or dedicated pages:</p> <ul style="list-style-type: none"> (a) information on the current implementation status of the CSSI; (b) a copy of the documents listed in Condition A1 and Condition A2 of this approval, and any documentation relating to any modifications made to the CSSI or the terms of this approval; (c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval; (d) a copy of any Environment Protection Licence obtained in relation to the CSSI or link to any existing Environment Protection Licence applied to the CSSI; and (e) a current copy of each document required under the terms of this approval must be published within one week of its endorsement / approval or before the commencement of any works to which they relate or before their implementation as the case may be. 	Community Communication Strategy
	<p>Note: Environment Protection Licences relevant to each stage of the project need to be clearly differentiated to identify how and where they specifically apply.</p>	

Project Planning Approval (Application No. SSI 15_7400) including modifications

Reference	Detail	Document Reference
C1	A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the PIR and the Department's Guideline for the Preparation of Environmental Management Plans to detail how the performance outcomes, commitments and mitigation measures specified in Chapter 11 of the PIR will be implemented and achieved during construction.	Section 2.0
C2	The CEMP must provide:	
	(a) a description of activities to be undertaken during construction (including the scheduling of construction);	Section 2.0
	(b) details of environmental policies, guidelines and principles to be followed in the construction of the CSSI;	Section 4.3 Appendix A
	(c) a schedule for compliance auditing;	Section 7.2
	(d) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the CSSI;	Section 6.2 Appendix C
	(e) details of how the activities described in subsection (a) of this condition will be carried out to:	Section 6.1
	i. meet the performance outcomes stated in the EIS as amended by the PIR; and	
	ii. manage the risks identified in the risk analysis undertaken in subsection (d) of this condition;	
	(f) an inspection program detailing the activities to be inspected and frequency of inspections;	Section 11.1
	(g) a protocol for managing and reporting any:	Section 12.2
	i. incidents; and	
	ii. non-compliances with this approval and with statutory requirements;	
	(h) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;	Section 11.2
	(i) a list of all the CEMP sub-plans required in respect of construction, as set out in Condition C3. Where staged construction of the CSSI is proposed, the CEMP must also identify which CEMP sub-plan applies to each of the proposed stages of construction;	Section 6.1
	(j) a description of the roles and environmental responsibilities for relevant employees and their relationship with the ER;	Section 5.2
	(k) for training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval;	Section 9.1
	(l) for periodic review and update of the CEMP and all associated plans and programs.	Section 11.3

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Reference	Detail	Document Reference
C3	<p>The following CEMP sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP sub-plan and be consistent with the CEMF and CEMP referred to in Condition C1. The Construction Traffic Management Plan must also be prepared in accordance with the Construction Traffic Management Framework as required by Condition E81.</p> <p>(a) Noise and Vibration Relevant Council (b) Biodiversity OEH and Relevant Council (c) Air Quality n/a (d) Soil and Water DPI Water, Relevant Council, OEH, SES, NSW Fire and Rescue (e) Groundwater DPI Water (f) n/a (g) Heritage Heritage Council (or its delegate and relevant council) (h) n/a</p>	Section 10.1
C4	<p>The CEMP sub-plans must state how:</p> <p>(a) the environmental performance outcomes identified in the EIS as amended by the PIR as modified by these conditions will be achieved; (b) the mitigation measures identified in the EIS as amended by the PIR as modified by these conditions will be implemented; (c) the relevant terms of this approval will be complied with; and (d) issues requiring management during construction, as identified through ongoing environmental risk analysis, will be managed.</p>	Section 6.1 Appendix B
C5	<p>The CEMP sub-plans must be developed in consultation with relevant government agencies. Where an agency(ies) request(s) is not included, the Proponent must provide the Secretary justification as to why. Details of all information requested by an agency to be included in a CEMP sub-plan as a result of consultation and copies of all correspondence from those agencies, must be provided with the relevant CEMP sub-plan.</p>	Section 10.1
C6	<p>Any of the CEMP sub-plans may be submitted to the Secretary along with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before commencement of construction.</p>	Section 2.1 Section 4.1 Section 8.1
C7	<p>The CEMP must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month before the commencement of construction or within another timeframe agreed with the secretary.</p>	Section 4.2 Section 5.4 Section 8.2
C8	<p>Construction must not commence until the CEMP and all CEMP sub-plans have been approved by the Secretary. The CEMP and CEMP sub-plans, as approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where the CSSI is being staged, construction of that stage is not to commence until the relevant CEMP and sub-plans have been approved by the Secretary.</p>	Section 2.0 Section 8.2
C9	<p>The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies identified for each Construction Monitoring Program to compare actual performance of construction of the CSSI against predicted performance.</p> <p>(a) Noise and Vibration (d) Groundwater</p>	Section 6.6

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Reference	Detail	Document Reference
C10	Each Construction Monitoring Program must provide: (a) details of baseline data available; (b) details of baseline data to be obtained and when; (c) details of all monitoring of the project to be undertaken; (d) the parameters of the project to be monitored; (e) the frequency of monitoring to be undertaken; (f) the location of monitoring; (g) the reporting of monitoring results; (h) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and (i) any consultation to be undertaken in relation to the monitoring programs.	Section 6.6
C11	The Noise and Vibration Construction Monitoring Program and Blast Construction Monitoring Program must include provision of real time noise and vibration monitoring data. The real time data must be available to the construction team, Proponent, ER and AA in real time. The Department and EPA must be provided with access to the real time monitoring data in real time.	Construction Noise and Vibration Management Plan
C12	The Construction Monitoring Programs must be developed in consultation with relevant government agencies as identified in Condition C9 of this approval and must include, to the written satisfaction of the Secretary, information requested by an agency to be included in a Construction Monitoring Programs during such consultation. Details of all information requested by an agency including copies of all correspondence from those agencies, must be provided with the relevant Construction Monitoring Program.	Section 6.6 Section 10.3
C13	The Construction Monitoring Programs must be endorsed by the ER and then submitted to the Secretary for approval at least one (1) month before commencement of construction or within another timeframe agreed with the Secretary.	Section 6.6 Section 8.2
C14	Construction must not commence until the Secretary has approved all of the required Construction Monitoring Programs, and all relevant baseline data for the specific construction activity has been collected.	Section 6.6
C15	The Construction Monitoring Programs, as approved by the Secretary including any minor amendments approved by the ER (or AA in regards to the Noise and Vibration Construction Monitoring Program), must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Secretary, whichever is the greater.	Section 6.6
C16	The results of the Construction Monitoring Programs must be submitted to the Secretary for information, and relevant regulatory agencies, for information in the form or a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.	Section 6.6 Section 7.3
C17	Where a relevant CEMP sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP sub-plan.	Section 6.6
E5	In addition to the performance outcomes, commitments and mitigation measures specified in PIR, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the construction and operation of the CSSI.	Appendix I – Air Quality & Dust Management Procedure

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Reference	Detail	Document Reference
E6	<p>The CSSI must be designed to retain as many trees as possible and provide replacement trees such that there a net increase in the number of trees. The Proponent must commission an independent, experienced and suitably qualified arborist to prepare a comprehensive Tree Report before removing any trees as detailed in the EIS, as amended by the documents listed in A1. The Tree Report must include:</p> <ul style="list-style-type: none"> (a) a description of the conditions of the tree(s) and its amenity and visual value; (b) consideration of all options to avoid tree removal, including relocation of services, redesign or relocation of ancillary components (such as substations, fencing etc.) and reduction of standard offsets to underground services; and (c) measures to avoid tree removal, minimise damage to, and ensure the health and stability of those trees to be retained and protected. This includes details of any proposed canopy or root pruning, root protection zone, excavation, site controls on waste disposal, vehicular access, materials storage and protection of public utilities. <p>In the event that tree removal cannot be avoided, then replacement trees are to be planted within, or in close proximity to the CSSI or other location in consultation with the Relevant Councils and agreed by the Secretary. The size of the replacement trees will be determined in consultation with the relevant Council. A copy of the Tree Report must be submitted to the Secretary before the removal, damage and/or pruning of any trees, including those affected by the site establishment works. All recommendations of the Tree Report must be implemented by the Proponent, unless otherwise agreed by the Secretary.</p> <p>The Tree Report may be prepared for the entire CSSI or separate reports may be prepared for individual areas where tree removal and/or pruning is proposed.</p>	Appendix H – Flora & Fauna Procedure
E8	Measures identified in Chapter 11 of the PIR to maintain or improve flood characteristics, as amended by the documents listed in A1, must be incorporated into the detailed design of the CSSI. The incorporation of these measures into the detailed design, including modelling, must be reviewed and endorsed by a suitably qualified and experienced person in consultation with directly affected landowners and businesses, Sydney Water, DPI Water, OEH, NSW State Emergency Service (SES) and Relevant Councils.	DP20 – Civils
E9	Flood information including flood reports, models and geographic information system outputs, and work as executed information from a registered surveyor certifying finished ground levels and the dimensions and finished levels of all structures within the flood prone land, must be provided to the relevant Councils, Sydney Water, OEH and the SES. The Relevant Councils, Sydney Water, OEH and the SES must be notified in writing that the information is available no later than one month following the completion of construction and be provided with that information. Information requested by the relevant Council, Sydney Water, OEH or the SES must be provided no later than six months following the completion of construction or within another timeframe agreed with the Relevant Council(s), Sydney Water, OEH and the SES.	DP20 – Civils
E10	The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1.	Heritage Management Plan

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Reference	Detail	Document Reference
E17	<p>The Archaeological Assessment Research Design Report (AARD) in the documents listed in A1 must be implemented. Final Archaeological Method Statements must be prepared in consultation with the Heritage Council of NSW (or its delegate) before commencement of archaeological excavation works. The final methodology must:</p> <ul style="list-style-type: none"> (a) provide for the detailed analysis of any heritage items discovered during the investigations; (b) include detailed site specific archaeological management and artefact management strategies; (c) include cored soil samples for soil and pollen for the Pitt Street site within the Tank Stream Valley; and (d) provide for a sieving strategy. 	Heritage Management Plan
E18	<p>Before excavation of archaeological management sites, the Proponent must nominate a suitably qualified Excavation Director who complies with the Heritage Council of NSW's Criteria for Assessment of Excavation Directors (July 2011) to oversee and advise on matters associated with historic archaeology and advise the Department and OEH.</p> <p>Where archaeological excavation is required, the Excavation Director must be present to oversee excavation and advise on archaeological issues. The Excavation Director must be given the authority to advise on the duration and extent of oversight required as informed by the provisions of the approved AARD and Excavation Methodology.</p> <p>A final archaeological report must be submitted to the Heritage Council of NSW within two (2) years of the completion of archaeological excavation on the project. The report must include information on the entire historical archaeological program relating to the CSSI.</p>	Heritage Management Plan
E19	<p>An Unexpected Heritage Finds Procedure must be prepared:</p> <ul style="list-style-type: none"> (a) to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or OEH; and (b) by a suitably qualified and experienced heritage specialist <p>The procedure must be included in the AARD and must be implemented for the life of the project.</p>	Heritage Management Plan
E20	<p>In the event that a potential relic/s is/are discovered, relevant construction must cease in the affected area and the Excavation Director must be notified and assess the significance level of the find/s and provide mitigation advice according to the significance level and the impact proposed. The Excavation Director must attend the site in accordance with E18 to oversee the excavation where relics of State significance are found.</p> <p>The Secretary must be notified at the same time as the Heritage Council of NSW (or its delegate) of any relic of State significance found.</p> <p>An Archaeological Relic Management Plan specific to the relic of State significance must be prepared in consultation with the Heritage Council of NSW (or its delegate) to outline measures to be implemented to avoid and/or minimise harm to and/or salvage the relic of State significance.</p>	Heritage Management Plan

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Reference	Detail	Document Reference
	<p>Construction in the vicinity of the discovery must not recommence until the requirements of the ARMP have been implemented, in consultation with the Excavation Director. The Proponent must notify the Secretary in writing of the outcome of consultation on the Archaeological Relic Management Plan with the Heritage Council of NSW.</p>	
E21	<p>The Proponent must prepare a Heritage Interpretation Plan which identifies and interprets the key Aboriginal and Non-Aboriginal heritage values and stories of heritage items and heritage conservation areas impacted by the CSSI. The Heritage Interpretation Plan must inform the Station Design and Precinct Plan referred to in Condition E101. The Heritage Interpretation Plan must be prepared in accordance with the NSW Heritage Manual, the NSW Heritage Office's Interpreting Heritage Places and Items: Guidelines (August 2005), and the NSW Heritage Council's Heritage Interpretation Policy and include, but not be limited to:</p> <ul style="list-style-type: none"> (a) a discussion of key interpretive themes, stories and messages proposed to interpret the history and significance of the affected heritage items and sections of heritage conservation areas including, but not limited to the Sydney Terminal and Central Railway Stations Group, Martin Place Station, Sydenham Station and Sydenham Pit and Drainage Pumping Station Precincts; (b) identification and confirmation of interpretive initiatives implemented to mitigate impacts to archaeological Relics, heritage items and conservation areas affected by the CSSI including: <ul style="list-style-type: none"> i. use of interpretative hoardings during construction ii. community open days iii. community updates iv. station and precinct design; and (c) Aboriginal cultural and heritage values of the project area including the results of any archaeological investigations undertaken. <p>The Heritage Interpretation Plan must be prepared in consultation with the Heritage Council of NSW (or its delegate), Relevant Councils and Registered Aboriginal Parties, and must be submitted to the Secretary before commencement of construction.</p>	Heritage Interpretation Plan
E23	<p>The Proponent must take all reasonable steps so as not to harm, modify or otherwise impact any Aboriginal object associated with the CSSI except as authorised by this approval.</p>	Heritage Management Plan
E24	<p>Before excavation, the Proponent must implement the Aboriginal Cultural Heritage Assessment prepared for the CSSI and included in the PIR. Excavation and/or salvage must be undertaken by a qualified archaeologist in consultation with the Registered Aboriginal Parties for the CSSI.</p>	Heritage Management Plan

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Reference	Detail	Document Reference
E25	Where previously unidentified Aboriginal objects are discovered during construction of the CSSI, construction must stop in the vicinity of the affected area and a suitably qualified and experienced Aboriginal heritage expert must be contacted to provide specialist heritage advice, before works recommence. The measures to consider and manage this process must be specified in the Heritage Management sub-plan required by Condition C3 and, where relevant, include registration in the OEH's Aboriginal Heritage Information Management System (AHIMS).	Heritage Management Plan
E26	This approval does not allow the Proponent to harm, modify, or otherwise impact human remains uncovered during the construction and operation of the CSSI, except in accordance with the Exhumation Management Plan (Condition E27).	Heritage Management Plan
E27	An Exhumation Management Plan must be prepared to guide the relocation of recovered human remains. The Exhumation Management Plan must be prepared: <ul style="list-style-type: none"> (a) in consultation with, and meeting the requirements of, the OEH and NSW Health; and (b) in accordance with the Guidelines for Management of Human Skeletal Remains (NSW Heritage Office, 1998b) and NSW Health Policy Directive – Exhumation of human remains (December, 2013), and other relevant guidelines and standards prepared by the Heritage Council of NSW or OEH. <p>The Exhumation Management Plan must be provided to the Secretary for information before the commencement of excavation works.</p> <p><i>Note: Human remains that are found unexpectedly during works are under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.</i></p>	Heritage Management Plan
E28	The Proponent must ensure that vibration from construction activities does not exceed the vibration limits set out in the British Standard BS 7385-2:1993 Evaluation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration	Construction Noise & Vibration Management Plan
E29	Owners of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before construction that generates vibration commences in the vicinity of those properties. The management of construction works in the vicinity of properties at risk of exceeding the screening criteria for cosmetic damage must be considered in the Noise and Vibration management sub plan required by Condition C3.	Construction Noise & Vibration Management Plan
E30	The Proponent must conduct vibration testing before and during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures.	Construction Noise & Vibration Management Plan
E31	The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring of heritage-listed structures.	Heritage Management Plan

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Reference	Detail	Document Reference
E32	<p>The Proponent must review the Sydney Metro City and Southwest Construction Noise and Vibration Strategy in the PIR during detailed construction planning to consider scale and duration of impacts, the requirements of this approval and all measures to limit construction noise impacts to sensitive receivers including:</p> <ul style="list-style-type: none"> (a) at property or architectural treatment; (b) relocation; and (c) other forms of mitigation where impacts are predicted to be long term and significant. <p>The revised Sydney Metro City and Southwest Construction Noise and Vibration Strategy must be submitted to the Secretary for approval at least one (1) month before construction commences.</p>	Construction Noise & Vibration Management Plan
E33	<p>Construction Noise and Vibration Impact Statements must be prepared for each construction site before construction noise and vibration impacts commence and include specific mitigation measures identified through consultation with affected sensitive receivers.</p>	Construction Noise & Vibration Management Plan
E34	<p>Noise generating works in the vicinity of potentially-affected, religious, educational, community institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) must not be timetabled within sensitive periods, unless other reasonable arrangements to the affected institutions are made at no cost to the affected institution or as otherwise approved by the Secretary.</p>	Construction Noise & Vibration Management Plan
E35	<p>The Proponent must review alternative methods to rock hammering and blasting for excavation as part of the detailed construction planning with a view to adopting methods that minimise impacts on sensitive receivers. Construction Noise and Vibration Impact Statements must be updated for each location or activity to adopt the least impact alternative in any given location unless it can be demonstrated, to the satisfaction of the AA, why it should not be adopted.</p>	Construction Noise & Vibration Management Plan
E36	<p>Construction, except as allowed by Condition E48 (excluding cut and cover tunnelling), must only be undertaken during the following standard construction hours:</p> <ul style="list-style-type: none"> (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays. 	Construction Noise & Vibration Management Plan
E39	<p>The Proponent must consult with proponents of other construction works in the vicinity of the CSSI and take reasonable steps to coordinate works to minimise cumulative impacts of noise and vibration and maximise respite for affected sensitive receivers.</p>	Community Communication Strategy
E40	<p>The Proponent must ensure all works (including utility works associated with the CSSI where undertaken by third parties) are coordinated to provide the required respite periods identified in accordance with the terms of this approval</p>	Community Communication Strategy

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Reference	Detail	Document Reference
E41	<p>The Proponent must ensure that residential receivers, located in non-residential zones, likely to experience an internal noise level exceeding Leq(15 minute) 60 dB(A) between 8pm and 9pm or Leq(15 minute) 45 dB(A) between 9pm and 7am (inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise, or a perceptible level of vibration is planned (including works associated with utility adjustments)) must be offered additional mitigation in accordance with the Sydney Metro City and South West Noise and Vibration Strategy referenced in Condition E32.</p>	<p>Construction Noise & Vibration Management Plan</p>
E42	<p>The Proponent must ensure that residential receivers in residential zones likely to experience an internal noise level of Leq(15 minute) 45 dB(A) or greater between 8pm and 7am (inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise, or a perceptible level of vibration is planned (including works associated with utility adjustments)) must be offered additional mitigation in accordance with the Sydney Metro City and South West Noise and Vibration Strategy referenced in Condition E32.</p>	<p>Construction Noise & Vibration Management Plan</p>
E43	<p>At no time can noise generated by construction exceed the National Standard for exposure to noise in the occupational environment of an eight-hour equivalent continuous A-weighted sound pressure level of LAeq,8h, of 85dB(A) for any employee working at a location near the CSSI.</p>	<p>Construction Noise & Vibration Management Plan</p>
E44	<p>Notwithstanding Condition E36 construction associated with the CSSI may be undertaken outside the hours specified under those conditions in the following circumstances:</p> <ul style="list-style-type: none"> (a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or (c) where different construction hours are permitted or required under an EPL in force in respect of the construction; or (d) construction that causes LAeq(15 minute) noise levels: <ul style="list-style-type: none"> i. no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and ii. no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and iii. continuous or impulsive vibration values, measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), and iv. intermittent vibration values measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or 	<p>Construction Noise & Vibration Management Plan</p>

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Reference	Detail	Document Reference
	<p>(e) where a negotiated agreement has been reached with a substantial majority of sensitive receivers who are within the vicinity of and may be potentially affected by the particular construction, and the noise management levels and/or limits for ground-borne noise and vibration (human comfort) cannot be achieved. All agreements must be in writing and a copy forwarded to the Secretary at least one (1) week before the works commencing; or</p> <p>(f) construction approved through an Out of Hours Work Protocol referred to in Condition E47, provided the relevant council, local residents and other affected stakeholders and sensitive receivers are informed of the timing and duration at least five (5) days and no more than 14 days before the commencement of the works.</p> <p>Note: This condition does not apply where an EPL is in force in respect of the construction.</p>	
E45	<p>On becoming aware of the need for emergency construction in accordance with Condition E44(b), the Proponent must notify the AA, the ER and the EPA (if an EPL applies) of the need for those activities or work. The Proponent must also use best endeavours to notify all affected sensitive receivers of the likely impact and duration of those works.</p>	<p>Section 5.4 Section 12.2</p>
E46	<p>Notwithstanding Conditions E44 and E48, rock breaking and other particularly annoying activities for station shaft or cut and cover stations is not permitted outside of standard construction hours, except at Central (excluding Central Walk works at 20-28 Chalmers Street, Surry Hills); or</p> <p>(a) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or</p> <p>(b) where different construction hours are permitted or required under an EPL in force in respect of the construction; or</p> <p>(c) construction that causes LAeq(15 min) noise levels:</p> <p>i. no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009); and</p> <p>ii. no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses; and</p> <p>iii. continuous or impulsive vibration values, measures at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006); and</p> <p>iv. intermittent vibration values measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006).</p>	<p>Construction Noise & Vibration Management Plan</p>
E47	<p>An Out of Hours Work Protocol for the assessment, management and approval of work outside of standard construction hours, as defined in Condition E36 of this approval, must be prepared in consultation with the EPA and submitted to the Secretary for approval before construction commences for works not subject to an EPL. The protocol must include:</p> <p>(a) the identification of low and high risk construction activities;</p>	<p>Construction Noise & Vibration Management Plan</p>

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Reference	Detail	Document Reference
	<p>(b) a risk assessment process in which the AA reviews all proposed out of hours activities and identifies their risk levels;</p> <p>(c) a process for the endorsement of out of hours activities by the AA and approval by the ER for construction activities deemed to be of:</p> <p>i. low environmental risk; or</p> <p>ii. high risk where all construction works cease by 9pm.</p> <p>All other high risk out of hours construction must be submitted to the Secretary for approval unless otherwise approved through an EPL.</p> <p>The protocol must detail standard assessment, mitigation and notification requirements for high and low risk out of hours works, and detail a standard protocol for referring applications to the Secretary.</p>	
E48	<p>Notwithstanding Condition E36 of this approval and subject to Condition E47, the following activities may be undertaken 24 hours per day, seven (7) days per week:</p> <p>(a) tunnelling and associated support activities (excluding cut and cover tunnelling, and excluding the installation and decommissioning of the Blues Point acoustic shed except where compliance with Condition E44 is achieved);</p> <p>(b) excavation within an acoustic enclosure (excluding the Blues Point temporary site except where compliance with Condition E44 is achieved);</p> <p>(c) excavation at Central (excluding Central Walk works at 20-28 Chalmers Street, Surry Hills) without an acoustic enclosure;</p> <p>(d) station and tunnel fit out; and</p> <p>(e) haulage and delivery of spoil and materials.</p>	Construction Noise & Vibration Management Plan
E49	<p>All acoustic sheds must be erected as soon as site establishment works at the facilities are completed and before undertaking any works or activities which are required to be conducted within the sheds.</p>	Construction Noise & Vibration Management Plan
E58	<p>The CSSI must be designed and constructed with the objective of minimising impacts to, and interference with, third party property and infrastructure, and that such infrastructure and property is protected during construction.</p>	Construction & Site Management Plan
E59	<p>Before commencement of construction, all property owners of buildings identified as being at risk of damage must be offered a building condition survey. Where an offer is accepted a structural engineer must undertake the survey. The results of the surveys must be documented in a Building Condition Survey Report for each building surveyed. Copies of Building Condition Survey Reports must be provided to the owners of the buildings surveyed, and if agreed by the owner, the Relevant Council within three (3) weeks of completing the Survey Report and no later than one (1) month before the commencement of construction.</p>	Construction Noise & Vibration Management Plan

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Reference	Detail	Document Reference
E60	Within three (3) months of the completion of construction, all property owners of buildings for which a building condition survey was carried out in accordance with Condition E59 must be offered a second building condition survey. Where an offer is accepted, building condition surveys must be undertaken by a structural engineer. The results of the surveys must be documented in a Building Condition Survey Report for each building surveyed. Copies of Building Condition Survey Reports must be provided to the owners of the buildings surveyed within one (1) month of the survey being completed.	Construction Noise & Vibration Management Plan
E61	The Proponent must install appropriate equipment to monitor areas in proximity to construction sites and the tunnel route during construction and for a period of not less than six (6) months after settlement has stabilised with particular reference to risk areas identified in the building and infrastructure condition surveys required by conditions E59 and E60 and/or the geotechnical analysis as required. If monitoring during construction indicates exceedance of the criteria, then all construction affecting settlement must cease immediately and must not resume until fully rectified or a revised method of construction is established that will ensure protection of affected buildings.	Construction Noise & Vibration Management Plan
E63	The Proponent must monitor settlement for any period beyond the minimum timeframe requirements of condition E61 if directed so by the Independent Property Impact Assessment Panel following its review of the monitoring data from the period not less than six (6) months after settlement has stabilised, consistent with Condition E61. The results of the monitoring must be made available to the Secretary on request.	Construction Noise & Vibration Management Plan
E65	All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise any water pollution. When implementing such controls, any relevant guidance in the Managing Urban Stormwater Series must be considered.	Appendix G: Soil & Water Procedure
E66	A Site Contamination Report, documenting the outcomes of Phase 1 and Phase 2 contamination assessments of land upon which the CSSI is to be carried out, that is suspected to be, or known to be, contaminated must be prepared by a suitably qualified and experienced person in accordance with guidelines made or approved under the Contaminated Land Management Act 1997 (NSW).	Contamination & Asbestos Finds Procedure
E67	If a Site Contamination Report prepared under Condition E66 finds such land contains contamination, a site audit is required to determine the suitability of a site for a specified use. If a site audit is required, a Site Audit Statement and Site Audit Report must be prepared by a NSW EPA Accredited Site Auditor. Contaminated land must not be used for the purpose approved under the terms of this approval until a Site Audit Statement is obtained that declares the land is suitable for that purpose and any conditions on the Site Audit Statement have been complied with.	Contamination & Asbestos Finds Procedure
E68	A copy of the Site Audit Statement and Site Audit Report must be submitted to the Secretary and Council for information no later than one (1) month before the commencement of operation.	Section 7.3
E69	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared and must be followed should unexpected contaminated land or asbestos be excavated or otherwise discovered during construction.	Contamination & Asbestos Finds Procedure

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Reference	Detail	Document Reference
E70	The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.	Contamination & Asbestos Finds Procedure
E71	The proponent must seek to achieve a best practice level of performance for the CSSI using market leading sustainability ratings tools (including a minimum 'Design' and 'As built' rating score of 65 using the Infrastructure Sustainability Council of Australia infrastructure rating tool, or an equivalent level of performance using a demonstrated equivalent rating tool).	Sustainability Management Plan
E73	Opportunities to reduce operational greenhouse gas emissions must be investigated during detailed design. The sustainability initiatives identified must be implemented, reviewed and updated regularly throughout design development and construction, and annually during operation.	Sustainability Management Plan
E75	<p>The CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and, accessibility of the networks, and facilitate an improved level of service in relation to permanent and operational changes. Detailed design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken:</p> <p>(a) in consultation with, and to the reasonable requirements of the Traffic and Transport Liaison Group(s) established under Condition E77;</p> <p>(b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements;</p> <p>(c) to minimise and manage local area traffic impacts;</p> <p>(d) to ensure access is maintained to property and infrastructure; and</p> <p>(e) to meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, and RMS (RTA) requirements.</p> <p>Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation before the commencement of the relevant works.</p>	Traffic Management Plan
E76	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Secretary upon request.	Traffic Management Plan
E79	The Proponent must consult with the Relevant Road Authority regarding the use of any weight restricted road by heavy vehicles.	Traffic Management Plan
E80	The Proponent must minimise truck movements during peak periods within commercial centres. Peak periods are 7am to 10am and 4pm to 7pm Monday to Friday.	Traffic Management Plan

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Reference	Detail	Document Reference
E82	Construction Traffic Management Plans (CTMPs), consistent with the CEMF and CTMF required in Condition E81, must be prepared for each construction site in consultation with the TTLG(s), and submitted to the RMS for approval following Sydney Coordination Office endorsement before construction commences at the relevant construction site. A copy of any Construction Traffic Management Plans approved by the RMS must be submitted to the Secretary for information.	Traffic Management Plan
E83	Where construction results in a worsening of the matters identified in Condition E81(a)-(o), the Proponent must review the measures identified in the CTMPs in consultation with the TTLG(s), as relevant. Any changes to the CTMPs must be submitted to the RMS for approval following Sydney Coordination Office endorsement and implemented.	Traffic Management Plan
E85	Heavy vehicle haulage must not use local roads unless no feasible alternatives are available.	Traffic Management Plan
E86	During construction, measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses. Such arrangements must be outlined in the Business Management Plan required in Condition E64 and implemented as required. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	Traffic Management Plan
E87	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists and public transport users will be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be included within each relevant CTMP and carried out in consultation with the TTLG before the completion and use of the subject infrastructure and must be made available to the Secretary on request.	Traffic Management Plan
E88	Details of haulage routes and heavy vehicle sizes to transport material to and from any construction site must be specified in the Construction Traffic Management Plan(s) and be approved by the RMS following endorsement by Sydney Coordination Office and consultation with the TTLG(s)	Traffic Management Plan
E89	The Proponent must implement traffic and transport management measures with the aid of a truck marshalling and logistics facility located within close proximity to the Sydney and North Sydney CBDs. The facility must be operational in advance of tunnel spoil generation. Details of the facility must be documented in the Ancillary Facilities Management Plan required by Condition A16.	Not Applicable for Waterloo ISD
E90	A Road Dilapidation Report must be prepared for local roads proposed to be used by heavy vehicles for the purposes of the CSSI before the commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to the Relevant Council within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles.	Traffic Management Plan
E91	If damage to roads occurs as a result of construction of CSSI, the Proponent must either (at the landowner's discretion):	Traffic Management Plan

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Reference	Detail	Document Reference
	<p>(a) compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner; or</p> <p>(b) rectify the damage so as to restore the road to at least the condition it was before construction commenced as identified in the Road Dilapidation Report(s).</p>	
E97	<p>The Proponent must provide adequate bicycle infrastructure at stations that form part of the project and provide adequate areas for future expansion of that infrastructure.</p>	Traffic Management Plan
E99	<p>The CSSI must be constructed in a manner that minimises visual impacts of construction sites, including, providing temporary landscaping where appropriate to soften views of the construction sites, minimising light spill, and incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located.</p>	Visual Amenity Management Sub Plan
E101	<p>Before commencement of permanent built surface works and/or landscaping, the Proponent must prepare Station Design and Precinct Plans (SDPP) for each station. The SDPP must be prepared by a suitably qualified and experienced person(s), in collaboration and consultation with relevant stakeholders including but not limited to relevant council(s), the Department, and the local community. The SDPP(s) must present an integrated urban and place making outcome for each station or end state element. The SDPP(s) must be approved by the Secretary following review by the DRP and before commencement of permanent aboveground work.</p> <p>Each SDPP must include, but not be limited to:</p> <p>(a) identification of specific design objectives, principles and standards based on -</p> <ul style="list-style-type: none"> i. the project design objectives as refined by the DRP; ii. maximising the amenity of public spaces and permeability around entrances to stations; iii. local environmental, heritage and place making values; iv. urban design context; v. sustainable design and maintenance; vi. community safety, amenity and privacy, including 'safer by design' principles where relevant; vii. relevant urban design and infrastructure standards and guidelines (including relevant council standards, policies and guidelines); viii. minimising the footprint of the project (including at operational facilities); <p>(b) opportunities for public art;</p> <p>(c) landscaping and building design opportunities to mitigate the visual impacts of rail infrastructure and operational fixed facilities (including the Chatswood Dive, Marrickville Dive, Sydney Metro Trains Facility South, Artarmon Substation, station structures and services, noise walls etc.);</p> <p>(d) the incorporation of salvaged historic and artistic elements onto the project design, including but not limited to the Tom Bass P&O fountain, the Douglas Annand glass screen (if present), the Douglas Annand wall frieze and heritage fabric from Martin Place Station, unless otherwise agreed by the Secretary;</p>	Station Design Precinct Plan SDPP

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Reference	Detail	Document Reference
	<p>(e) details on the location of existing vegetation and proposed landscaping (including use of endemic and advanced tree species where practicable). Details of species to be replanted/revegetated must be provided, including their appropriateness to the area and habitat for threatened species;</p> <p>(f) a description of the CSSI design features, including graphics such as sections, perspective views and sketches for key elements of the CSSI;</p> <p>(g) the location, design and impacts of operational lighting associated with the CSSI and measures proposed to minimise lighting impacts;</p> <p>(h) details of where and how recommendations from the DRP have been considered in the plan;</p> <p>(i) the timing for implementation of access, landscaping and public realm initiatives;</p> <p>(j) monitoring and maintenance procedures for vegetation and landscaping (including weed control), performance indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail; and</p> <p>(k) evidence of consultation with the community, local Councils and agencies in the preparation of on the SDPP(s) and how feedback has been addressed before seeking endorsement by the DRP.</p> <p>Elements covered by SDPP(s) must be complete no later than the commencement of operation of the Sydney Metro to paid services, unless otherwise agreed with the Secretary.</p> <p>Note: The SDPP may be submitted in stages to address the built elements of the CSSI and landscaping aspects of the CSSI.</p>	
E102	<p>The SDPP must achieve a minimum visual impact rating of at least “Minor Benefit” as defined in the EIS, as amended by the documents listed in A1, for all design elements of the project, where feasible and reasonable. Where it can be demonstrated, to the DRP’s satisfaction, that a “Minor Benefit” is not achievable, then a “Negligible” visual impact rating must be achieved as a minimum.</p>	Station Design Precinct Plan
E104	<p>All permanent external lighting must be the minimum level of illumination necessary and must comply with AS: 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.</p>	Station Design Precinct Plan
E105	<p>The placement of CCTV cameras associated with the CSSI must be undertaken in consultation with the relevant public authority and the NSW Police.</p>	Station Design Precinct Plan
E106	<p>Waste generated during construction and operation is to be dealt with in accordance with the following priorities:</p> <p>(a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced;</p> <p>(b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered; and</p> <p>(c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of.</p>	Sustainability Management Plan

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Reference	Detail	Document Reference
E107	The CSSI must be constructed and operated so as to maintain the NSW Water Quality Objectives where they are being achieved as at the date of this approval, and contribute towards achievement of the NSW Water Quality Objectives over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the CSSI contains different requirements in relation to the NSW Water Quality Objectives, in which case those requirements must be complied with.	Appendix G: Soil & Water Procedure
E108	Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be undertaken in accordance with relevant guidelines and designed by a suitably qualified and experienced person.	DP20 – Civil and Drainage

Revised Environmental Mitigation Measures (REMMs)

Reference	Detail	Document Reference
T1	Ongoing consultation would be carried out with (as relevant to the location) the CBD Coordination Office, Roads and Maritime Services, Sydney Trains, NSW Trains, the Port Authority of NSW, Barangaroo Delivery Authority, local councils, emergency services and bus operators in order to minimise traffic and transport impacts during construction.	Traffic Management Plan
T2	Road Safety Audits would be carried out at each construction site. Audits would address vehicular access and egress, and pedestrian, cyclist and public transport safety	Traffic Management Plan
T3	Directional signage and line marking would be used to direct and guide drivers and pedestrians past construction sites and on the surrounding network. This would be supplemented by Variable Message Signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternate routes.	Traffic Management Plan
T4	In the event of a traffic related incident, co-ordination would be carried out with the CBD Coordination Office and / or the Transport management Centre's Operations Manager.	Traffic Management Plan
T5	The community would be notified in advance of proposed road and pedestrian network changes through media channels and other appropriate forms of community liaison.	Community Communication Strategy
T6	Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.	Traffic Management Plan
T7	Additional enhancements for pedestrian, cyclist and motorist safety in the vicinity of the construction sites would be implemented during construction. This would include measures such as: (1) Use of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers	Traffic Management Plan

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
	<p>(3) Specific construction driver training to understand route constraints, expectations, safety issues, human error and its relationship with fitness for work and chain of responsibility duties, and to limit the use of compression braking</p> <p>(4) Use of In Vehicle Monitoring Systems (telematics) to monitor vehicle location and driver behaviour</p> <p>(5) Safety devices on construction vehicles that warn drivers of the presence of a vulnerable road user located in the vehicles' blind spots and warn the vulnerable road user that a vehicle is about to turn.</p>	
T8	Access to existing properties and buildings would be maintained in consultation with property owners.	Traffic Management Plan
T9	All trucks would enter and exit construction sites in a forward gear, where feasible and reasonable.	Traffic Management Plan
T10	Any relocation of bus stops would be carried out by Transport for NSW in consultation with Roads and Maritime Services, the CBD Coordination Office (for relevant locations), the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops.	Traffic Management Plan
T11	For special events that require specific traffic measures, those measures would be developed in consultation the CBD Coordination Office (for relevant locations), Roads and Maritime Services, Barangaroo Delivery Authority (for relevant locations) and the organisers of the event.	Traffic Management Plan
T12	<p>Construction sites would be managed to minimise construction staff parking on surrounding streets. The following measures would be implemented:</p> <ul style="list-style-type: none"> •Encouraging staff to use public or active transport •Encouraging ride sharing • Provision of alternative parking locations and shuttle bus transfers where feasible and reasonable. <p>Transport for NSW would work with local councils to minimise adverse impacts of construction on parking and other kerbside use in local streets, such as loading zones, bus zones, taxi zones and coach zones.</p>	Traffic Management Plan
T13	Construction site traffic would be managed to minimise movements in the AM and PM peak periods.	Traffic Management Plan
T14	Construction site traffic immediately around construction sites would be managed to minimise movements through school zones during pick up and drop off times.	Traffic Management Plan
T19	Where existing parking is removed to facilitate construction activities, alternative parking facilities would be provided where feasible and reasonable.	Traffic Management Plan
T20	Alternative pedestrian routes and property access would be provided where these are affected during the construction of the power supply routes.	Traffic Management Plan

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
T21	The potential combined impact of trucks from multiple construction sites would be further considered during the development of Construction Traffic Management Plans.	Traffic Management Plan
T22	Where existing footpath routes used by pedestrians and / or cyclists are affected by construction, a condition survey would be carried out to confirm they are suitable for use (eg suitably paved and lit), with any necessary modifications to be carried out in consultation with the relevant local council.	Traffic Management Plan
NV1	<p>The Construction Noise and Vibration Strategy would be implemented with the aim of achieving the noise management levels where feasible and reasonable. This would include the following example standard mitigation measures where feasible and reasonable:</p> <ul style="list-style-type: none"> (1) Provision of noise barriers around each construction site (3) The coincidence of noisy plant working simultaneously close together would be avoided (4) Offset distances between noisy plant and sensitive receivers would be increased (5) Residential grade mufflers would be fitted to all mobile plant (6) Dampened rock hammers would be used (7) Non-tonal reversing alarms would be fitted to all permanent mobile plant (8) High noise generating activities would be scheduled for less sensitive period considering the nearby receivers (9) The layout of construction sites would consider opportunities to shield receivers from noise. <p>This would also include carrying out the requirements in relation to construction noise and vibration monitoring</p>	Construction Noise & Vibration Management Plan
NV2	<p>Unless compliance with the relevant traffic noise criteria can be achieved, night time heavy vehicle movements at the Chatswood dive site, Crows Nest Station, Victoria Cross Station and Waterloo Station sites would be restricted to:</p> <ul style="list-style-type: none"> •The Pacific Highway and Mowbray Road at the Chatswood dive site •The Pacific Highway, Hume Street and Oxley Street at the Crows Nest Station construction site •McLaren Street, Miller Street and Berry Street at the Victoria Cross Station construction site • Botany Road and Raglan Street at the Waterloo Station construction site. 	Construction Noise & Vibration Management Plan
NV3	<p>Where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure and attended vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for that structure.</p> <p>For heritage items, the more detailed assessment would specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.</p>	Construction Noise & Vibration Management Plan
NV4	Feasible and reasonable measures would be implemented to minimise ground borne noise where exceedences are predicted.	Construction Noise & Vibration Management Plan

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
NV6	<p>Transport for NSW would engage an Independent Acoustic Advisor to act independently of the design and construction teams and provide oversight of construction methods, construction noise and vibration planning, management and mitigation, and construction noise and vibration monitoring and reporting. The key responsibilities of the Independent Acoustic Advisor would include :</p> <ul style="list-style-type: none"> • Assurance of contractor noise and vibration planning, modelling, management and monitoring practices • Verification of compliance with relevant guidelines and approval requirements • Audit noise and vibration management practices. 	Section 7.2
NV7	<p>Alternative demolition techniques that minimise noise and vibration levels would be investigated and implemented where feasible and reasonable. This would include consideration of:</p> <ul style="list-style-type: none"> • The use of hydraulic concrete shears in lieu of hammers/rock breakers • Sequencing works to shield noise sensitive receivers by retaining building wall elements • Locating demolition load out areas away from the nearby noise sensitive receivers • Providing respite periods for noise intensive works • Methods to minimise structural-borne noise to adjacent buildings including separating the structural connection prior to demolition through saw-cutting and propping, using hand held splitters and pulverisers or hand demolition • Installing sound barrier screening to scaffolding facing noise sensitive neighbours • Modifying demolition works sequencing / hours to minimise impacts during peak pedestrian times and / or adjoining neighbour outdoor activity periods. 	Construction Noise & Vibration Management Plan
BI1	<p>Specific consultation would be carried out with businesses potentially impacted during construction. Consultation would aim to identify and develop measures to manage the specific construction impacts for individual businesses</p>	Community Communication Strategy
BI2	<p>A business impact risk register would be developed to identify, rate and manage the specific construction impacts for individual businesses</p>	Community Communication Strategy
BI3	<p>Appropriate signage would be provided around construction sites to provide visibility to retained businesses.</p>	Community Communication Strategy
NAH1	<p>Archival recording and reporting of the following heritage items would be carried out in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998a), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006):</p> <ul style="list-style-type: none"> • The internal heritage fabric and any non-original elements removed from within the curtilage of Mowbray House, Chatswood • The interior, exterior and setting of the shop at 187 Miller Street, North Sydney 	Heritage Management Plan (note: no impact to heritage items will occur as a result of Waterloo ISD scope of work)

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
	<ul style="list-style-type: none"> The fabric and setting of the North Sydney bus shelters requiring removal and temporary relocation at Victoria Cross Station and Blues Point temporary site Any component of the Blues Point Waterfront Group and the McMahons Point South heritage conservation area to be directly affected or altered, including vegetation and significant landscape features Hickson Road wall in the vicinity of proposed ventilation risers and skylights for Barangaroo Station The interior, exterior and setting of the 'Flat Building' at 7 Elizabeth Street, Sydney Martin Place, between Elizabeth and Castlereagh streets, Sydney The heritage fabric of areas of the existing Martin Place Station affected by the project The Rolling Stock Officers Garden, Rolling Stock Officers Building and Cleaners Amenities Building in Sydney Yard and any other component of the Sydney Terminal and Central Railway Stations group to be removed or altered Directly impacted parts of the Congregational Church at Waterloo. 	
NAH2	The archaeological research design would be implemented. Significant archaeological findings would be considered for inclusion in heritage interpretation (as per NAH8) for the project and be developed in consultation with the relevant local council.	Heritage Interpretation Plan
NAH3	An Exhumation Policy and Guideline would be prepared and implemented. It would be developed in accordance with the Guidelines for Management of Human Skeletal Remains (NSW Heritage Office, 1998b) and NSW Health Policy Directive – Exhumation of human remains (December 2013). It would be prepared in consultation with NSW Heritage Office and NSW Health.	Sydney Metro Exhumation Management Plan (SM ES-PW-315/1.0)
NAH4	The method for the demolition of existing buildings and / or structures at Chatswood dive site, Victoria Cross Station, Martin Place Station, Pitt Street Station, Central Station and Waterloo Station would be developed to minimise direct and indirect impacts to adjacent and / or adjoining heritage items.	Section 2.1
NAH7	The project design would be sympathetic to heritage items and, where reasonable and feasible, minimise impacts to the setting of heritage items. The detailed design for Martin Place Station and Central Station would be developed with input from a heritage architect.	Heritage Interpretation Plan
NAH8	Appropriate heritage interpretation would be incorporated into the design for the project in accordance with the NSW Heritage Manual, the NSW Heritage Office's Interpreting Heritage Places and Items: Guidelines (August 2005), and the NSW Heritage Council's Heritage Interpretation Policy.	Heritage Interpretation Plan
NAH19	Subject to outcomes of consultation with the church, temporary and permanent works at the Congregational Church would: <ul style="list-style-type: none"> Minimise impacts to heritage fabric Be sympathetic to the heritage values and architectural form of the building. 	Heritage Interpretation Plan

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
AH1	Aboriginal stakeholder consultation would be carried out in accordance with the NSW Office of Environment and Heritage's Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.	Heritage Management Plan
AH2	The cultural heritage assessment report would be implemented.	Heritage Management Plan
AH3	Archaeological test excavation (and salvage when required) would be carried out where intact natural soil profiles with the potential to contain significant archaeological deposits are encountered at the Blues Point temporary site, Barangaroo Station, Martin Place Station, Pitt Street Station, Central Station, Waterloo Station and Marrickville dive site. Excavations would be conducted in accordance with the methodology outlined in the Aboriginal cultural heritage assessment report.	Heritage Management Plan
AH4	Appropriate Aboriginal heritage interpretation would be incorporated into the design for the project in consultation with Aboriginal stakeholders.	Heritage Management Plan
LV1	Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts, for example materials and machinery would be stored behind fencing.	Visual Amenity Management Sub Plan
LV2	Existing trees to be retained would be protected prior to the commencement of construction in accordance with Australian Standard AS4970 the Australian Standard for Protection of Trees on development Sites and Adjoining Properties.	Appendix H: Flora and Fauna Management Procedure
LV3	Lighting of construction sites would be oriented to minimise glare and light spill impact on adjacent receivers.	Visual Amenity Management Sub Plan
LV4	Visual mitigation would be implemented as soon as feasible and reasonable after the commencement of construction, and remain for the duration of the construction period.	Visual Amenity Management Sub Plan
LV5	Opportunities for the retention and protection of existing street trees would be identified during detailed construction planning.	Waterloo ISD Tree Report
LV6	The design and maintenance of construction site hoardings would aim to minimise visual amenity and landscape character impacts, including the prompt removal of graffiti. Public art opportunities would be considered.	Visual Amenity Management Sub Plan
LV7	The selection of materials and colours for acoustic sheds would aim to minimise their visual prominence.	Section 2.1 Visual Amenity Management Sub Plan
LV10	Temporary impacts to public open space would be rehabilitated in consultation with the relevant local council and / or landowner.	Visual Amenity Management Sub Plan
GWG1	A detailed geotechnical model for the project would be developed and progressively updated during design and construction. The detailed geotechnical model would include: <ul style="list-style-type: none"> Assessment of the potential for damage to structures, services, basements and other sub-surface elements through settlement or strain 	Groundwater Management Plan

Revised Environmental Mitigation Measures (REMMs)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> • Predicted changes to groundwater levels, including at nearby water supply works. • Where building damage risk is rated as moderate or higher (as per the CIRIA 1996 risk-based criteria), a structural assessment of the affected buildings / structures would be carried out and specific measures implemented to address the risk of damage. <p>With each progressive update of the geotechnical model the potential for exceedance of the following target changes to groundwater levels would be reviewed:</p> <ul style="list-style-type: none"> • Less than 2.0 metres – general target • Less than 4.0 metres – where deep building foundations present • Less than 1.0 metre – residual soils • Less than 0.5 metre – residual soils (Blues Point) (fill / Aeolian sand). <p>Where a significant exceedance of target changes to groundwater levels are predicted at surrounding land uses and nearby water supply works, an appropriate groundwater monitoring program would be developed and implemented.</p> <p>The program would aim to confirm no adverse impacts on groundwater levels or to appropriately manage any impacts.</p> <p>Monitoring at any specific location would be subject to the status of the water supply work and agreement with the landowner.</p> <p>The geotechnical model and groundwater monitoring program would be developed in consultation with the Department of Primary Industries (Water).</p>	
GWG2	Condition surveys of buildings and structures in the vicinity of the tunnel and excavations would be carried out prior to the commencement of excavation at each site.	Construction & Site Management Plan
SCW1	<p>Updated desktop contamination assessments would be carried out for Chatswood dive site, Blues Point temporary site, Barangaroo Station, Central Station and Waterloo Station. If sufficient information is not available to determine the remediation requirements and the impact on potential receivers, then detailed contamination assessments, including collection and analysis of soil and groundwater samples would be carried out.</p> <p>Detailed contamination assessment would also be carried out for the Barangaroo power supply route within Hickson Road and the Marrickville power supply route adjacent to Sydney Park and Camdenville Oval.</p> <p>In the event a Remediation Action Plan is required, these would be developed in accordance with Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land (Department of Urban Affairs and Planning and Environment Protection Authority, 1998) and a site auditor would be engaged.</p>	Sydney Metro City & South West - Tunnel and Station Excavation Works Package Proposed Waterloo Station, Botany Road and Cope Street, Waterloo (April 2018)
SCW2	Prior to ground disturbance in high probability acid sulfate areas at Barangaroo Station, Waterloo Station and Marrickville dive site, testing would be carried out to determine the presence of acid sulfate soils.	Appendix G: Soil & Water Procedure

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
	If acid sulfate soils are encountered, they would be managed in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998).	
SCW3	Erosion and sediment control measures would be implemented in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008). Measures would be designed as a minimum for the 80 th percentile; 5-day rainfall event.	Appendix G: Soil & Water Procedure Contamination & Asbestos Finds Procedure
SCW4	Discharges from the construction water treatment plants would be monitored to ensure compliance with the discharge criteria in an environment protection licence issued to the project.	N/A an EPL will not be required for Waterloo ISD
SQ2	Specific consultation would be carried out with sensitive community facilities (including aged care, child care centres, educational institutions and places of worship) potentially impacted during construction. Consultation would aim to identify and develop measures to manage the specific construction impacts for individual sensitive community facilities.	Community Communication Strategy
B2	Potential bat roosting locations at Central Station, Waterloo Station and Marrickville dive sites would be checked by a qualified ecologist or wildlife handler prior to demolition. Any bats found would be relocated, unless in torpor, in which case the relocation would be delayed until the end of the torpor period.	Section 2.1
B3	The local WIRES group and / or veterinarian would be contacted if any fauna are injured on site or require capture and / or relocation.	Appendix H: Flora & Fauna Procedure
FH1	Detailed construction planning would consider flood risk at Barangaroo Station, Martin Place Station and the Waterloo Station construction sites. This would include identification of measures to avoid, where feasible and reasonable, not worsen existing flooding characteristics up to and including the 100 year annual recurrence interval event in the vicinity of the project. Not worsen is defined as: <ul style="list-style-type: none"> • A maximum increase flood levels of 50mm in a 100 year Average Recurrence Interval flood event • A maximum increase in time of inundation of one hour in a 100 year Average Recurrence Interval flood event • No increase in the potential for soil erosion and scouring from any increase in flow velocity in a 100 year Average Recurrence Interval flood event. 	DP20 – Civil and Drainage Design Report
FH9	Design of the project would be reviewed to, where feasible and reasonable, not worsen existing flooding characteristics up to and including the 100 year annual recurrence interval event in the vicinity of the project. Detailed flood modelling would consider: <ul style="list-style-type: none"> • Potential changes to flood prone land and flood levels • Potential changes to overland flow paths • Redistribution of surface runoff as a result of project infrastructure • Behaviour of existing stormwater runoff • Potential changes required to flood evacuation routes, flood warning systems and signage. 	DP20 - Civil and Drainage Design Report

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
	<p>Flood modelling to support detailed design would be carried out in accordance with the following guidelines:</p> <ul style="list-style-type: none"> • Floodplain Development Manual (NSW Government, 2005b) • Floodplain Risk Management Guideline: Practical Consideration of Climate Change (DECC, 2007b) • Floodplain Risk Management Guide: Incorporating Sea Level Rise Benchmarks in Flood Risk Assessments (DECCW, 2010c) • New guideline and changes to section 117 direction and EP&A Regulation on flood prone land, Planning Circular PS 07-003 (NSW Department of Planning, 2007). <p>Flood modelling and consideration of mitigation measures would be carried out in consultation with the relevant local councils, the Office of Environment and Heritage and the State Emergency Services.</p> <p>Not worsen is defined as:</p> <ul style="list-style-type: none"> • A maximum increase flood levels of 50mm in a 100 year Average Recurrence Interval flood event • A maximum increase in time of inundation of one hour in a 100 year Average Recurrence Interval flood event • No increase in the potential for soil erosion and scouring from any increase in flow velocity in a 100 year Average Recurrence Interval flood event. 	
FH10	<p>During detailed design, project infrastructure would be designed to meet the following criteria, where feasible and reasonable:</p> <ul style="list-style-type: none"> • Locate station and service entrances to underground stations above the greater of the 100 year annual recurrence interval flood level plus 500mm or the probable maximum flood level • Provide site surface grading and drainage collection systems at the Chatswood and Marrickville dive structures to manage the risk of local catchment and overland flooding for events up to and including the probable maximum flood event • Locate aboveground rail system facilities (such as traction power supply sub stations) at least above the 100 year annual recurrence interval flood level plus 500mm • Protect facilities that are identified as being critical to emergency response operations from the probable maximum flood level. 	DP20 - Civil and Drainage Design Report
AQ1	The engines of all on-site vehicles and plant would be switched off when not in use for an extended period.	Appendix I: Air Quality & Dust Management Procedure
AQ2	Plant would be well maintained and serviced to minimise emissions. Emissions from plant would be considered as part of pre-acceptance checks.	Appendix I: Air Quality & Dust Management Procedure
AQ3	Construction site layout and placement of plant would consider air quality impacts to nearby receivers.	Appendix I: Air Quality & Dust Management Procedure

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
AQ4	Hard surfaces would be installed on long term haul routes and regularly cleaned.	Appendix I: Air Quality & Dust Management Procedure
AQ5	Unsurfaced haul routes and work area would be regularly damped down in dry and windy conditions.	Appendix I: Air Quality & Dust Management Procedure
AQ6	All vehicles carrying loose or potentially dusty material to or from the site would be fully covered.	Appendix I: Air Quality & Dust Management Procedure
AQ7	Stockpiles would be managed to minimise dust generation.	Appendix I: Air Quality & Dust Management Procedure
AQ8	Demolition would be managed to minimise dust generation.	Section 2.1
AQ9	Ventilation from acoustic sheds would be filtered.	N/A for Waterloo ISD
HR1	All hazardous substances that may be required for construction would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005) and Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011).	Appendix G: Soil & Water Management Procedure
HR2	Dial before you dig searches and non-destructive digging would be carried out to identify the presence of underground utilities.	Construction & Site Management Plan
HR3	A hazardous material survey would be completed for those buildings and structures suspected of containing hazardous materials (particularly asbestos) prior to their demolition. If asbestos is encountered, it would be handled and managed in accordance with relevant legislation, codes of practice and Australian standards.	Section 2.1
HR4	The method for delivery of explosives would developed prior to the commencement of blasting in consultation with the Department of Planning and Environment and be timed to avoid the need for on-site storage.	Section 2.1
WM1	All waste would be assessed, classified, managed and disposed of in accordance with the NSW Waste Classification Guidelines.	Sustainability Management Plan
WM2	100 per cent of spoil that can be reused would be beneficially reused in accordance with the project spoil reuse hierarchy	Sustainability Management Plan
WM3	A recycling target of at least 90 per cent would be adopted for the project.	Sustainability Management Plan
WM4	Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging.	Sustainability Management Plan

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
SUS1	Sustainability initiatives would be incorporated into the detailed design and construction of the project to support the achievement of the project sustainability objectives.	Sustainability Management Plan
SUS2	A best practice level of performance would be achieved using market leading sustainability rating tools during design and construction.	Sustainability Management Plan
SUS3	A workforce development and industry participation strategy would be developed and implemented during construction.	Sustainability Management Plan
SUS4	Climate change risk treatments would be incorporated into the detailed design of the project including: <ul style="list-style-type: none"> Ensuring that adequate flood modelling is carried out and integrated with design Testing the sensitivity of air-conditioning systems to increased temperatures, and identify potential additional capacity of air-conditioning systems that may be required within the life of the project, with a view to safeguarding space if required Testing the sensitivity of ventilation systems to increased temperatures and provide adequate capacity. 	Sustainability Management Plan
SUS5	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 defined reference footprint.	Sustainability Management Plan
SUS6	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction would be offset.	Sustainability Management Plan
CU1	Transport for NSW would manage and co-ordinate the interface with projects under construction at the same time. Coordination and consultation with the following stakeholders would occur, where required: <ul style="list-style-type: none"> CBD Coordination Office Department of Planning and Environment Roads and Maritime Services Sydney Trains NSW Trains Sydney Buses Sydney Water Port Authority of NSW Willoughby Council North Sydney Council City of Sydney Council Marrickville Council Sydney Motorways Corporation Barangaroo Delivery Authority Emergency service providers Utility providers 	Community Communications Strategy

Revised Environmental Mitigation Measures (REMMs)		
Reference	Detail	Document Reference
	<ul style="list-style-type: none"> Construction contractors. <p>Co-ordination and consultation with these stakeholders would include:</p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Adjustments to the Sydney Metro construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects Co-ordination of traffic management arrangements between projects. 	

Construction Environmental Management Framework (CEMF)		
Reference	Detail	Document Reference
1.3	<p>Transport for NSW (TfNSW) has developed an Environment and Sustainability Policy (Appendix A) for the Sydney Metro Delivery Office (SMDO). Principal Contractors will be required to undertake their works in accordance with this policy. The policy reflects a commitment in the delivery of the project to:</p> <ul style="list-style-type: none"> Align with, and support, Transport for NSW (TfNSW) Environment & Sustainability Policy. 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. 	Section 2.0 SMP
2.1	<p>Table 1.1 below identifies key NSW environmental legislative requirements and their application to SM C&SW construction works, current as at the date of this document. TfNSW and its Contractors should regularly review their legislative requirements.</p>	Section 4.3
2.2	<p>Sydney Metro Northwest is classified as Critical State Significant Infrastructure and was approved under the following in accordance with Section 115W of the Environmental Protection and Assessment Act 1997:</p> <ul style="list-style-type: none"> Staged State Infrastructure Approval (1 October 2011, modified on 25 September 2012) Stage 1 – Major Civil Construction Works (25 September 2012, modified on 18 April 2013) Stage 2 – Stations, Rail Infrastructure and Systems (8 May 2013, modified on 20 May 2014). 	Section 4.1 Appendix B

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<p>Some components of Sydney Metro Northwest (such as the conversion of the Epping to Chatswood component of the project) have also been approved under Part 5 of the Environmental Protection and Assessment Act. in which case TfNSW is the consent authority.</p> <p>Sydney Metro City and Southwest is also classified as Critical State Significant Infrastructure and requires approval from a consent authority under the requirements of the Environmental Protection and Assessment Act 1997 (Section 115W). Two separate approvals will be sought:</p> <ul style="list-style-type: none"> □ Sydney Metro City and Southwest – Chatswood to Sydenham □ Sydney Metro City and Southwest - Sydenham to Bankstown <p>The requirements of the approval are required to be complied with by TfNSW. Responsibility for implementing mitigation measures and conditions of approval will be allocated between TfNSW and Principal Contractors as appropriate. Typically TfNSW will produce a Staging Report which sets out the applicability and allocation of approval requirements within the project’s program of works.</p>	
2.3	<p>Sydney Metro projects often meet the definition of a number of scheduled activities under Schedule 1 of the Protection of the Environmental Operation Act 1997 (POEO Act) and as such our contractors may be required to obtain an Environment Protection Licence (EPL) or work under the existing EPL held by Sydney Trains. Where required, Sydney Metro Principal Contractors will:</p> <ol style="list-style-type: none"> a. Apply for and be granted an EPL from the EPA. b. Hold an EPL which covers their scope of works as necessary under the POEO Act. c. Undertake their scope of works in accordance with the conditions of the applicable EPLs as issued by the EPA. d. Work under the existing Sydney Trains EPL. 	Section 4.2
2.4	<p>Numerous environmental publications, standards, codes of practice and guidelines are relevant to TfNSW construction and are referenced throughout this Construction Environmental Management Framework. A summary of these applicable standards and guidelines is provided in Table 1.3.</p>	Section 4.3
3.1	<ol style="list-style-type: none"> a. Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2004 and to have transitioned this accreditation into AS/NZS ISO 14001:2015 by September 2018. b. Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will: <ol style="list-style-type: none"> i. Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2004 or 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 6.1 Section 2.0 SMP

Construction Environmental Management Framework (CEMF)		
Reference	Detail	Document Reference
	<ul style="list-style-type: none"> 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. <p>c. All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's E&SMS.</p> <p>d. The relationship between key documents within the Sydney Metro Environment and Sustainability Management System and the Principal Contractor's Environment and Sustainability Management System is shown in Figure 2.</p> <p>e. The Principal Contractors Sustainability Plan and its sub plans will capture governance and design requirements as well as social sustainability initiatives as required by the Sydney Metro Sustainability Strategies.</p> <p>f. These plans vary in scope across different delivery packages.</p>	
3.2	<p>a. Principal Contractors are required to prepare and implement a Sustainability Management Plan (SMP) relevant to the scale and nature of their scope of works. The SMP shall comprise of a main SMP document and issue-specific sub-plans.</p> <p>b. Depending on the scope and scale of the works, TfNSW may decide to streamline the SMP and sub-plan requirements. As a minimum the SMP will address and detail:</p> <ul style="list-style-type: none"> i. The requirements of the relevant planning approval documentation, any relevant conditions of all other permits and licences, the Contractor's corporate EMS, the sustainability provisions of the contract documentation, and this Construction Environmental Management Framework; ii. 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; iii. A sustainability policy statement and strategies for adaptation to climate change, resource management (including energy, water and waste), workforce development, procurement and biodiversity enhancement; iv. Sustainability initiatives to be implemented during the project; v. How sustainability initiatives will be identified and implemented; vi. The processes and methodologies for assurance, onitoring, auditing, corrective action, continuous improvement and reporting on sustainability performance; vii. The processes and methodologies which will be used to achieve the required scores under rating systems identified in contract documents; viii. The processes and procedures for undertaking climate change risk assessments; ix. The processes and procedures for the identification and implementation of climate change adaption measures; x. The approach to sustainable procurement including: 	SMP

Construction Environmental Management Framework (CEMF)		Document Reference
Reference	Detail	

- The processes and procedures that will be used to provide environmental and social improvement;
 - 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;
 - 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; and
 - Interfaces with other Project Plans.
- c. Depending on the scope of the works, the SMP will also include, as a separate sub-plans:
- i. A Construction Workforce Development Plan;
 - ii. A Construction Carbon and Energy Management Plan;
 - iii. A Materials Management Plan; and
 - iv. A Waste Management & Recycling Plan.
- d. The Workforce Development Plan will address and detail:
- i. The proposed response to workforce-related regulatory, planning approval, and contract requirements which will be addressed for the project;
 - ii. The workforce development 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;
 - iii. A description of the workforce development initiatives which will be implemented, and the implementation methodology, including for:
 - Assessing current and future workforce skill needs and workforce profiles including a skills and workforce gap plan;
 - Increasing local employment, local business opportunities and involvement of local SMEs;
 - Provision of relevant Nationally Recognised Accredited Training;
 - Increasing workforce diversity and inclusion, targeting indigenous workers and businesses, female representation in non-traditional trades and long-term unemployed;
 - Participation in work placement and education programs for young people; and
 - Increasing participation of apprentices and trainees.
- The processes and methodologies for assurance, monitoring, auditing, corrective action, continuous improvement and reporting on workforce development performance.

Construction Environmental Management Framework (CEMF)		
Reference	Detail	Document Reference
3.3	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.	Section 2.0
	b. Depending on the scope and scale of the works, TfNSW 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 2.0
	c. The CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework.	Section 4.2
	d. As a minimum the CEMP will:	
	i. Include a contract specific environmental policy;	Section 3.2 Appendix A
	ii. Include a description of activities to be undertaken during construction;	Section 2.1
	iii. For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed;	Appendix B
	iv. For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	Section 2.0
	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 5.2
	vi. Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP;	Section 5.2
vii. Identify communication requirements, including liaison with stakeholders and the community;	Section 10.3	
viii. Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.9(b);	Section 9.1	
ix. Management strategies for environmental compliance and review of the performance of environmental controls;	Section 7.1 Section 11.1	
x. Processes and methodologies for surveillance and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	Section 7.1 Section 11.1	

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	xi. Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	Section 12.2 Section 11.2
	xii. Include procedures for the control of environmental records.	Section 8.1
	e. The CEMP and associated sub-plans will be reviewed by TfNSW and/or an independent environmental representative (see Section 3.11) 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 and Environment (DP&E).	Section 6.1 Section 4.1
	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 2.0
3.4	a. Subject to Section 3.3(b) and Section 3.2(b) the Principal Contractor will prepare issue specific environmental sub plans to the CEMP and SMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include: <ul style="list-style-type: none"> i. Spoil management; ii. Groundwater management; iii. Traffic and transport management; iv. Noise and vibration management; v. Heritage management; vi. Flora and fauna management; vii. Visual amenity management; viii. Carbon and energy management; ix. Materials management; x. Soil and water management; xi. Air quality management; and xii. Waste management and recycling. b. Additional detail on the minimum requirements for these sub plans is provided in Sections 6-17 of this CEMF.	Section 6.1
3.5	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 TfNSW 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: <ul style="list-style-type: none"> 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 6.3

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<p>c. The Principal Contractor will prepare and implement site based progressive Environmental Control Maps (ECM's) which as a minimum:</p> <ul style="list-style-type: none"> i. Is a progressive document depicting a current representation of the site; ii. Indicates which environmental procedures, environmental approvals, or licences are applicable; iii. Illustrates the site showing significant structures, work areas and boundaries; iv. Illustrates environmental control measures and environmentally sensitive receivers; v. Is endorsed by the Principal Contractors Environmental Manager or delegate; and vi. Relevant workers will be trained in the requirements of and will sign off the procedures prior to commencing works on the specific site and / or activity. 	
3.6	<p>a. Where the requirement for an additional environmental assessment is identified, this will be undertaken prior to undertaking any physical works. The environmental assessment will include:</p> <ul style="list-style-type: none"> 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 6.2
3.7	<p>a. Prior to the commencement of construction the Principal Contractors will offer Pre-construction Building Condition Surveys, in writing, to the owners of buildings where there is a potential for construction activities to cause cosmetic or structural damage. If accepted, the Principal Contractor will produce a comprehensive written and photographic condition report produced by an appropriate professional prior to relevant works commencing.</p> <p>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.</p>	Construction and Site Management Plan
3.8	<p>a. Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. Example activities include vegetation removal and water discharge. Hold points will be documented in relevant CEMPs.</p> <p>b. Table 1.4 provides the structure for the register of hold points as well as a preliminary list of hold points which will be implemented.</p>	Section 6.3
3.9	<p>a. Principal Contractors will be 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:</p>	Section 9.1

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
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- 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 policy 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 for environmental hazards and incidents; and
 - Communication protocols.
- 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 3.4 (a) (i-xi).

- b. Principal Contractors will conduct a Training Needs Analysis which:
 - i. Identifies that all staff are to receive an environmental induction and undertake environmental incident management 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.

3.10	a. Principal Contractors will 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 SMDO procedures and will include: <ul style="list-style-type: none"> i. Categories for environmental emergencies and incidents; ii. Notification protocols for each category of environmental emergency or incident, including notification of TfNSW 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 the EPA); iv. A process for undertaking appropriate levels of investigation for all incidents and the identification, implementation and assessment of corrective and preventative actions; and 	Section 12.6
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Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<p>v. Notification protocols of incidents to the EPA, DP&E or OEH that are made by the Contractor or TfNSW.</p> <p>b. The Contractor will make all personnel aware of the plan and their responsibilities.</p>	
3.11	<p>a. TfNSW will engage Independent Environmental Representatives (ERs) to undertake the following, along with any additional roles as required:</p> <ul style="list-style-type: none"> 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 TfNSW 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. 	Section 5.4
3.12	<p>a. In relation to Roles and Responsibilities the CEMP will:</p> <ul style="list-style-type: none"> i. Describe the relationship between the Principal Contractor, TfNSW, 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. <p>b. All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.</p>	Section 5.2
3.13	<p>a. Issue specific environmental monitoring will be undertaken as required or as additionally required by any approval, permit or licence conditions.</p> <p>b. The results of any monitoring undertaken as a requirement of the EPL will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.</p> <p>c. Environmental inspections will include:</p>	Section 6.6

Construction Environmental Management Framework (CEMF)		
Reference	Detail	Document Reference
	<ul style="list-style-type: none"> 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. <p>d. Regular site inspections by the ERs and TfNSW representatives at a frequency to be agreed with the Principal Contractor.</p> <p>e. Principal Contractors must undertake internal environmental audits. The scope will include:</p> <ul style="list-style-type: none"> 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. <p>f. TfNSW (or an independent environmental auditor) will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation, including this Construction Environmental Management Framework.</p>	
3.14	<p>a. Principal Contractors will document and detail any non-compliances arising out of the above monitoring, inspections and audits. TfNSW will be made aware of all non-compliances in a timely manner.</p> <p>b. Principal Contractors will develop and implement corrective actions to rectify the non compliances and preventative actions in order to prevent a re-occurrence of the non compliance. Contractors will also maintain a register of non compliances, corrective actions and preventative actions.</p> <p>c. TfNSW or the Environmental Representative may raise non-compliances against environmental requirements.</p>	Section 7.1
3.15	<p>a. Principal Contractors will maintain appropriate records of the following:</p> <ul style="list-style-type: none"> 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. <p>b. Records will be retained onsite for the duration of works.</p> <p>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 TfNSW (or their representative) upon request.</p> <p>d. Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.13) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to TfNSW at an agreed frequency.</p>	Section 6.6 Section 7.1 Section 8.1
3.16	<p>a. Principal Contractors will ensure the continual review and improvement of the E&SMS. This will generally occur in response to:</p>	Section 11.3

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> i. Issues raised during environmental surveillance and monitoring; ii. Expanded scope of works; iii. Environmental incidents; and iv. Environmental non-conformances. <p>b. A formal review of the E&SMS 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 E&SMS and supporting management plans.</p>	
4.1	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> 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 Communication Strategy
4.2	<p>a. A Community Communication Strategy will be developed by each Sydney Metro Principal Contractor.</p> <p>b. Key elements of the Community Communication Strategy, which will be implemented at appropriate times in the construction process, will include:</p> <ul style="list-style-type: none"> 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; 	Community Communication Strategy

Construction Environmental Management Framework (CEMF)		
Reference	Detail	Document Reference
	<ul style="list-style-type: none"> 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	<p>a. Community liaison and complaints handling will be undertaken in accordance with the Construction Complaints Management System and will include:</p> <ul style="list-style-type: none"> 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 Communication Strategy
4.4	<p>a. Principal Contractors will ensure as a minimum:</p> <ul style="list-style-type: none"> i. Temporary construction works including site hoardings and acoustic sheds consider urban design and visual impacts, including: <ul style="list-style-type: none"> <input type="checkbox"/> Artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations; <input type="checkbox"/> Project information to raise awareness on benefits, explain the proposed works at each site and provide updates on construction progress; <input type="checkbox"/> Community information, including contact numbers for enquiries / complaints; <input type="checkbox"/> Signage and information to mitigate impacts on local businesses which may be obscured by the construction site; <input type="checkbox"/> Sydney Metro advertising / public awareness campaigns; and <input type="checkbox"/> Logos / branding, including Sydney Metro, NSW Government, and Contractor branding. b. The design of all temporary works will require TfNSW approval in relation to urban design and visual impacts. c. 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. 	Community Communication Strategy

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<p>d. The principles of Crime Prevention Through Environmental Design will be applied to all works, including temporary works, that have a public interface.</p>	
<p>4.5</p>	<p>a. Principal Contractors will proactively work with potentially affected stakeholders to identify the likely impacts and put in place measures to minimise impacts.</p> <p>b. Construction works will be undertaken to meet the following objectives:</p> <ul style="list-style-type: none"> 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. <p>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:</p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> <input type="checkbox"/> Operating hours; <input type="checkbox"/> Main delivery times; <input type="checkbox"/> Reliance on foot traffic; <input type="checkbox"/> Any signage or advertising that may be impacted; <input type="checkbox"/> Customer origin; and <input type="checkbox"/> 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. 	<p>Community Communication Strategy</p>
<p>5.1</p>	<p>a. Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.</p> <p>b. Works which can be undertaken outside of standard construction hours without any further approval include:</p>	<p>Construction Noise & Vibration Management Plan</p>

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> 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 RMS) 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. <p>c. Principal Contractors may apply for EPA approval to undertake works outside of normal working hours under their respective Environment Protection Licences.</p>	
5.2	<p>a. Principal Contractors will consider the following in the layout of construction sites:</p> <ul style="list-style-type: none"> 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; and v. Aim to minimise the requirement for reversing, especially of heavy vehicles. 	ECMs
5.3	<p>a. Mitigation measures for reinstatement will be produced in consultation with TfNSW, the community and stakeholders.</p> <p>b. Mitigation measures required for reinstatement will be incorporated into the CEMP and will include as a minimum:</p> <ul style="list-style-type: none"> 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 6.5
6.1	<p>a. The following spoil management objectives will apply to the construction of the project:</p> <ul style="list-style-type: none"> i. Minimise spoil generation where possible; ii. The project will mandate 100% reuse or recycling (on or off-site) of usable spoil; 	Spoil Management Plan

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> 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	<p>a. Principal Contractors will develop and implement a Spoil Management Plan for their scope of works. The Spoil Management Plan will include as a minimum:</p> <ul style="list-style-type: none"> 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. <p>b. Spoil management measures will be included in regular inspections undertaken by the Contractor, and compliance records will be retained. These will include:</p> <ul style="list-style-type: none"> i. Records detailing the beneficial re-use of spoil either within the project or at off-site locations; and ii. Waste docket for any spoil disposed of to landfill sites. 	Spoil Management Plan
6.3	<p>a. Examples of spoil mitigation measures include:</p> <ul style="list-style-type: none"> 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. 	Spoil Management Plan

Construction Environmental Management Framework (CEMF)		
Reference	Detail	Document Reference
7.1	<p>a. The following groundwater management objectives will apply to construction:</p> <ul style="list-style-type: none"> 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. 	Groundwater Management Plan
7.2	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> 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 the NSW Office of Water; 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. 	Groundwater Management Plan
7.3	<p>a. Examples of groundwater mitigation measures include:</p> <ul style="list-style-type: none"> 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. 	Groundwater Management Plan
8.1	<p>a. Construction traffic management will be managed using the following documentation, where relevant:</p> <ul style="list-style-type: none"> i. Construction Traffic Management Plan; ii. Traffic Management Plan (for each work site); iii. Traffic Staging Plan (for road works); iv. Traffic Control Plan (for road works); v. Vehicle Movement Plan (internal to construction sites); vi. Pedestrian Management Plan (around construction sites); and vii. Parking Management Plan (loss of parking). <p>b. Principal Contractors will develop and implement a Construction Traffic Management Plan for their scope of works. The Construction Traffic Management Plan will as a minimum:</p>	Traffic Management Plan

Construction Environmental Management Framework (CEMF)

Reference Detail

Document
Reference

- i. Implement the traffic and transport mitigation measures as detailed in the environmental approval documentation;
 - ii. be developed in consultation with the relevant road authority, CBD Coordinator General (CCO) and / or transport operator;
 - iii. Set out the overall traffic management resources, processes and procedures for the management of traffic and transport during construction of the Project Works and Temporary Works;
 - iv. Identify types and volumes of construction vehicles and associated route and time restrictions;
 - v. Identify traffic generation from other major infrastructure developments, impacts from construction traffic and haulage routes;
 - vi. Identify potential activities that could result in the disruption to traffic and transport networks, including pedestrian, cyclist and public transport networks and during special events;
 - c. The individual construction traffic plans listed in (a) are to comply with and address the requirements of RMS Traffic Control at Worksites Manual AS 1742.3 Manual of uniform traffic control devices Part 3: Traffic control for works on roads, relevant Austroads Guides and RMS Supplements to Austroads and Australian Standards;
 - d. The process for the development of Traffic Management Plans (TMP) including the minimum requirements as detailed in Specification G10 and as required by the relevant road authorities.
 - e. The process for the development of Traffic Staging Plans (TSP) including the minimum requirements for these TSP including road design drawings showing traffic lane configurations for traffic passing through the site during various construction stages, including details of road alignment and geometry, intersection layouts, provision for buses and cyclists, work areas and pedestrian areas, drainage, signs and pavement markings;
 - f. The process for the development of Traffic Control Plans (TCP). The TCPs will set out the specific traffic and transport management arrangements to be implemented at specific locations during the construction of the Project Works and Temporary Works.
 - g. The process for the development of Vehicle Movement Plan (VMP). The content of a VMP will include:
 - i. A diagram showing the preferred travel paths for vehicles associated with a work site entering, leaving or crossing the through traffic stream. A VMP may be combined with or superimposed on a TCP; and
 - ii. The vehicle entry and exit points into the work area, and indicate clearly that these are the only points where interface with through traffic is permitted.
 - h. The process for the development of a Pedestrian Movement Plan (PMP). The content of the PMP will include:
 - i. A diagram showing the allocated travel paths for workers or pedestrians around or through a worksite. A PMP may be combined with or superimposed on a TCP; and
 - ii. A diagram showing all signs and devices used to guide the workers or pedestrians.
 - i. The process for the development of a Parking Management Plan (PkMP). The PkMP will identify:

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> i. Parking requirements and on and offsite parking arrangements and associated impacts; ii. Remote parking arrangements and associated access between sites and public transport nodes; iii. Communication and parking management measures; and iv. Proposals for relocation of impacted users for any Sydney CBD kerbside use impacts during the construction period. <p>j. TfNSW and its Contractors will undertake liaison with agencies and the community regarding traffic management. This may involve:</p> <ul style="list-style-type: none"> i. Establishment of a Traffic and Transport Liaison Group which could consist of representatives from Sydney Metro Contractors, TfNSW, CCO, WestConnex, RMS, TMC, NSW Police, relevant councils, emergency services, and bus operators. The group would review and provide feedback on: <ul style="list-style-type: none"> <input type="checkbox"/> Road Occupancy Licence (ROL) applications to monitor potential cumulative impacts from multiple ROLs operating concurrently in one area; <input type="checkbox"/> Be consulted on the preparation of Construction Traffic Management Plans and supporting Plans; and <input type="checkbox"/> Consultation with the CCO, RMS, TMC and others in relation to the approval of Construction Traffic Management Plans, supporting Plans, or related licences for works within and external to the CBD. 	
8.3	<p>a. Examples of traffic mitigation measures include:</p> <ul style="list-style-type: none"> i. Minimising heavy vehicle movements during peak traffic times; ii. Avoidance of local roads for heavy vehicle routes, where feasible; iii. Providing for safe pedestrian and cyclist movements around the worksites; and iv. Where feasible and reasonable, contractors will provide its workforce with satellite car parking and buses to transport them to the worksites. 	Traffic Management Plan
9.1	<p>a. The following noise and vibration management objectives will apply to construction:</p> <ul style="list-style-type: none"> 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. 	Construction Noise & Vibration Management Plan
9.2	<p>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:</p> <ul style="list-style-type: none"> i. Identification of work areas, site compounds and access points; ii. Identification of sensitive receivers and relevant construction noise and vibration goals; 	Construction Noise & Vibration Management Plan

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> 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 EPL conditions; 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. <p>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 EPL variation applications and works proposed to be undertaken outside of standard construction hours.</p> <p>c. Noise and vibration monitoring would be undertaken for construction as specified in the CNVS and the EPL.</p> <p>d. The following compliance records would be kept by Principal Contractors:</p> <ul style="list-style-type: none"> 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. 	
9.3	<p>a. All feasible and reasonable mitigation measures would be implemented in accordance with the CNVS. Examples of noise and vibration mitigation measures include:</p> <ul style="list-style-type: none"> 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. 	Construction Noise & Vibration Management Plan
10.1	<p>a. The following heritage management objectives will apply to construction:</p>	Heritage Management Plan

Construction Environmental Management Framework (CEMF)		
Reference	Detail	Document Reference
	<ul style="list-style-type: none"> 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. 	
10.2	<p>a. Principal Contractors will develop and implement a Heritage Management Plan which will include as a minimum:</p> <ul style="list-style-type: none"> 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. <p>b. The Contractor's regular inspections will include checking of heritage mitigation measures.</p> <p>c. Compliance records will be retained by the Contractor. These will include:</p> <ul style="list-style-type: none"> 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. 	Heritage Management Plan
10.3	<p>a. Examples of heritage mitigation measures include:</p> <ul style="list-style-type: none"> i. Any heritage item not affected by the works will be retained and protected throughout construction; 	Heritage Management Plan

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> ii. 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; iii. Undertake archival recordings of all non-Indigenous heritage items affected by the works prior to commencement of works; and iv. Implement unexpected heritage find procedures for Indigenous and non-Indigenous heritage items. 	
11.1	<p>a. The following flora and fauna management objectives will apply to construction:</p> <ul style="list-style-type: none"> 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. 	Flora & Fauna Procedure
11.3	<p>a. Examples of flora and fauna mitigation measures include:</p> <ul style="list-style-type: none"> i. Areas to be retained and adjacent habitat areas will be fenced off prior to works to prevent damage or accidental over clearing; ii. Clearing will follow a two-stage process as follows: <ul style="list-style-type: none"> <input type="checkbox"/> Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and <input type="checkbox"/> 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. 	Flora & Fauna Procedure
12.1	<p>a. The following visual and landscape management objectives will apply to the construction of the project:</p> <ul style="list-style-type: none"> i. Minimise impacts on existing landscape features as far as feasible and reasonable; ii. Ensure the successful implementation of the Landscape Design; and iii. Reduce visual impact of construction to surrounding community. 	Visual Amenity Management Sub Plan
12.2	<p>a. Principal Contractors will develop and implement a Visual Amenity Management Plan for temporary works which will include as a minimum:</p> <ul style="list-style-type: none"> i. The visual mitigation measures as detailed in the environmental approval documentation for construction; ii. Input from an experienced Landscape or Urban Designer; 	Visual Amenity Management Sub Plan

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> 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. <p>b. Visual and landscape measures will be incorporated into the Principal Contractor’s regular inspections including checking the health of retained vegetation around site boundaries, checking the condition of any site hoarding and acoustic sheds, and checking the position and direction of any sight lighting.</p> <p>c. The Contractor will retain compliance records of any inspections undertaken in relation to visual and landscape measures.</p>	
12.3	<p>a. Examples of visual amenity mitigation measures include:</p> <ul style="list-style-type: none"> 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. 	Visual Amenity Management Sub Plan
13.1	<p>a. The following carbon and energy management objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Reduce energy use and carbon emissions during construction; ii. Support innovative and cost effective approaches to energy efficiency, low carbon / renewable energy sources and energy procurement; and iii. Design to reduce energy use and carbon emissions during operations. 	SMP
13.2	<p>a. Principal Contractors will develop and implement a Carbon and Energy Management Plan that will include, as a minimum:</p> <ul style="list-style-type: none"> i. The carbon and energy mitigation measures as detailed in the environmental approval documentation; ii. The relevant requirements of the Sydney Metro Environment and Sustainability Policy and the Sydney Metro Sustainability Strategy; iii. The responsibilities of key project personnel with respect to the implementation of the plan; iv. The low carbon strategies and initiatives that will be implemented to minimise the carbon emissions associated with construction; 	SMP

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> v. The energy efficiency strategies and initiatives that will be implemented to minimise energy use associated with construction; vi. Carbon emission estimates determined using a carbon footprint assessment undertaken in accordance with ISO 14064-1, ISO14064-2 and ISO14064-3 that incorporates direct and indirect emissions associated with construction; and vii. Compliance record generation and management. <p>b. Reporting of carbon and energy will be undertaken throughout the construction works in accordance with the National Greenhouse and Energy Reporting Act 2007.</p> <p>c. The Contractors would be required to retain appropriate records and prepare carbon footprint assessments (inclusive of Scope 1, 2 and 3 emissions) at various stages of construction.</p>	
13.3	<p>a. Examples of carbon and energy mitigation measures include:</p> <ul style="list-style-type: none"> i. Equipment and material selection will have consideration of energy efficiencies; ii. Construction workers will be encouraged to use sustainable transport options and green travel plans will be developed; iii. Inclusion of renewable energy sources to power temporary facilities and equipment where feasible; iv. Designing and operating Site offices for energy efficiency; v. Offsetting a portion of construction greenhouse gas emissions; and vi. Efficient operation of vehicles and equipment. 	SMP
14.1	<p>a. The following materials management objectives would apply to the construction of the project:</p> <ul style="list-style-type: none"> i. Reduce material use throughout the project life-cycle; ii. Consider embodied impacts in materials selection; iii. Use recycled materials; iv. Recycle and reuse materials onsite; and v. Influence subcontractors and materials suppliers to adopt sustainability objectives in their works and procurement. 	SMP
14.2	<p>a. Principal Contractors will be required to develop and implement a Sustainable Procurement Policy that will include as a minimum:</p> <ul style="list-style-type: none"> i. The materials mitigation measures as detailed in the environmental approval documentation; ii. The relevant requirements of the City & Southwest Environment and Sustainability Policy and the City & Southwest Sustainability Strategy; iii. The responsibilities of key project personnel with respect to the implementation of the policy; iv. Compliance record generation and management; v. Ethical sourcing of materials; and vi. Local sourcing. <p>b. The Contractors will be required to retain records detailing the consideration of sustainability in the procurement of all materials.</p>	SMP
14.3	<p>a. Examples of materials mitigation measures include:</p>	SMP

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
	<ul style="list-style-type: none"> i. Consideration of quality and durability in the procurement of materials; ii. Using recycled materials; iii. Using materials with a lower embodied impact; iv. Using recycled steel in concrete reinforcement; v. Developing deconstruction plans to enable recycling and reuse at end-of-life; vi. Using low-VOC, low emission materials; vii. Using sustainably sourced timber and wood products; viii. Low-carbon concrete; and ix. Consideration of whole-of-life costs during procurement. 	
15.1	<p>a. The following soil and water management objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise pollution of surface water through appropriate erosion and sediment control; ii. Maintain existing water quality of surrounding surface watercourses; and iii. Source construction water from non-potable sources, where feasible and reasonable. 	Appendix G: Soil & Water Procedure
15.3	<p>a. Examples of surface water and flooding mitigation measures include:</p> <ul style="list-style-type: none"> i. Clean water will be diverted around disturbed site areas, stockpiles and contaminated areas; ii. Control measures will be installed downstream of works, stockpiles and other disturbed areas; iii. Exposed surfaces will be minimised, and stabilised / revegetated as soon feasible and reasonable upon completion of construction; iv. Dangerous good and hazardous materials storage will be within bunded areas with a capacity of 110 per cent of the maximum single stored volume; and v. Spill kits will be provided at the batch plants, storage areas and main work sites. 	Appendix G: Soil & Water Procedure
16.1	<p>a. The following air quality management objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and ii. Identify and control potential dust and air pollutant sources 	Appendix I: Air Quality & Dust Management Procedure
16.3	<p>a. Examples of air quality mitigation measures include:</p> <ul style="list-style-type: none"> i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes; ii. 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. 	Appendix I: Air Quality & Dust Management Procedure

Construction Environmental Management Framework (CEMF)

Reference	Detail	Document Reference
17.1	<p>a. The following waste objectives will apply to construction:</p> <ul style="list-style-type: none"> i. Minimise waste throughout the project life-cycle; and ii. Waste management strategies will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: <ul style="list-style-type: none"> <input type="checkbox"/> Avoidance of unnecessary resource consumption; <input type="checkbox"/> Resource recovery (including reuse, reprocessing, recycling and energy recovery); and <input type="checkbox"/> Disposal. <p>b. Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by the Principal Contractor.</p>	SMP
17.2	<p>a. Principal Contractors will develop and implement a Waste Management and Recycling Plan which will include as a minimum:</p> <ul style="list-style-type: none"> i. The waste management and recycling 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 and recycling monitoring requirements; iv. A procedure for the assessment, classification, management and disposal of waste in accordance with the Waste Classification Guidelines (DECC, 2008); and v. Compliance record generation and management. <p>b. Principal Contractors will undertake the following waste monitoring as a minimum:</p> <ul style="list-style-type: none"> i. Weekly inspections will include checking on the waste storage facilities on site; and ii. All waste removed from the site will be appropriately tracked from 'cradle to grave' using waste tracking docketts. <p>c. Principal Contractors will report all necessary waste and purchasing information to TfNSW as required for TfNSW to fulfil their WRAPP reporting requirements.</p> <p>d. Compliance records will be retained by the Principal Contractors in relation to waste management including records of inspections and waste docketts for all waste removed from the site.</p>	SMP
CEMF 17.3	<p>a. Examples of waste management and recycling mitigation measures include:</p> <ul style="list-style-type: none"> 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. 	SMP

Appendix C – Environmental Risk Register

JHG PROJECT RATING MATRIX

JHG-MPR-RCC-003 Project Risk and Opportunity Rating Matrix

- Register
- Example

CONSEQUENCE - RISK					
RATING	1	2	3	4	5
Workplace Health and Safety	* First aid injury, and/or * Minor safe working issues	* Medical treatment, and/or * Moderate safe working breach likely to impact on operations	* Serious medical / hospital treatment resulting in need alternate working or resulting in lost time injury, and/or * Significant safe working breach with actual impact on operations	* Serious or permanent injury, and/or * Significant safe working breach with immediate impact on operations on one or more worksites	* Tor more fatalities, and/or * Major breach of safe working with immediate and extensive impact on one or more worksites
Budget (\$AUD)	<1% over project budget	1% to 5% over project budget	3% to 5% over project budget	5% to 10% over project budget	>10% over project budget
Time Schedule (Target Program)	<1% of program over the critical path program	1% to 2% of program over the critical path program	2% to 3% of program over the critical path program	3% to 5% of program over the critical path program	>5% program over the critical path program
Environment & Natural Resources	* Low severity environmental impact(s) or impact on natural resources availability that are promptly reversible and affected area is within the site boundary	* Nuisance or low severity environmental impact(s) or impact on natural resources availability that are promptly reversible and affected area is outside the site boundary	* Moderate severity environmental impact(s) or impact on natural resources availability where the affected area is within the site boundary	* Moderate severity environmental impact(s) or impact on natural resources availability where the affected area is outside the site boundary	* High severity environmental impact(s) or impact on natural resources availability at local scale significance
Quality	* Rework Costs less than or equal to 20K	* Rework Costs less than or equal to 100K but greater than 20K	* Rework Costs less than or equal to 250K but greater than 100K	* Rework Costs less than or equal to 5% contract value but greater than 250K	* Rework Costs greater than 5% of contract value
Reputation / Community / Media	* Public concern restricted to local complaints * Lack of contribution to the community	* Minor, adverse local public or media attention and complaints * Employees warned only * Minor change in community amenity values	* Attention from media and/ or heightened concern by local community * Stakeholder action will disrupt planned project activities * Disciplinary action may be taken * Temporary reduced community access to services or employment	* Significant adverse national media / public / NGO attention * Considerable and prolonged adverse community impact and dissatisfaction publicly expressed * Stakeholder action will delay achievement of major elements of the Project * Permanently reduced community access to services or employment	* Serious public or media outcry with international coverage * Significant adverse community impact & condemnation * Stakeholder action will prevent achievement of the project objectives * Reduced cohesion of community
Governance / Legal / Regulatory	* Very minor technical breach of regulation or policy or code of ethics. No fine / penalty	* Minor legal issues, non-compliances and breaches of regulation, policy or code of ethics * Fine or penalty issued	* Moderate breach of regulation, policy or code with investigation or report to authority * Moderate legal proceedings initiated * Regulatory action (eg. improvement Notice issued, enforceable undertaking)	* Significant breach of regulation, policy or code with fine or other regulatory action. Significant litigation / legal action * Shut down of part of a project due to regulatory breach * Prohibition Notice	* Major breach of regulation, policy or code with fine * Major litigation * Major investigation by regulatory body * Prosecution/ Accreditation loss
Management Impact	* Impact of event absorbed through normal activity	* Will require some local management attention over several days	* Significant event that can be managed with careful attention, will take some project managers much time for several weeks * Local operation of contingency plan	* Major event that requires the implementation of crisis and contingency plans at a project level, regional area or support function (DRP) * Will require the involvement of senior managers and will take up the time of project managers for several weeks	* Critical event or disaster with significant impact on John Holland that requires considerable senior management time to handle over several months * Full implementation of an John Holland's crisis management plan for days to weeks

PROBABILITY OR CHANCE	QUALITATIVE ASSESSMENT	RECURRENCE TIMEFRAME
≥ 90%	Almost certain to occur during the project / contract life	Less than "Monthly"
51% to 89%	Considered likely to occur during the project / contract life	"Monthly" to "Yearly"
30% to 50%	Considered a possible occurrence during the project / contract life	Betw een 2 and 5 years
5% to 29%	Considered unlikely to occur during the project / contract life	Betw een 5 and 20 years
< 5%	Considered a rare occurrence to happen during the project / contract life	Greater than every 20 years

CONSEQUENCE					
RATING	1	2	3	4	5
ALMOST CERTAIN	D	C	B	A	A
LIKELY	D	D	C	B	A
POSSIBLE	E	D	C	C	B
UNLIKELY	E	E	D	C	B
RARE / REMOTE	E	E	D	D	C

LIKELIHOOD

CONTROL EFFECTIVENESS	GUIDANCE
Satisfactory	Nothing more to be done except review and monitor the current controls. To the extent that is reasonably achievable, controls are well designed for the risk (i.e. follow the hierarchy of controls) and address the root causes. Management considers that the controls are operating effectively and reliably at all times.
Improving	Controls are designed correctly, are in place and operating reasonably effectively. Some minor/ isolated exceptions may exist, however do not represent a systematic weakness in operating effectiveness. Some more work to be done to improve the overall effectiveness.
Partial	While the design of controls may be largely correct in that they treat most of the root causes of the risk, implementation and/or operational effectiveness is only partial
Poor	Significant control gaps. Either controls do not treat root causes or they do not operate at all effectively. Controls, if they exist are just reactive rather than proactive.
Nil	Virtually no credible control. Management has no confidence that any degree of control is being achieved due to poor control design and/or very limited operational effectiveness.

Residual risk / opp Rating	Suggested action	Timing of status report and management plans	Authority to accept or tolerate risk.
A	Take action to eliminate or implement additional controls to reduce it to acceptable level (ALARP/SFAIRP).	Notify as soon as practicable, normally within 24 hours.	John Holland CEO / COO
	"WHS / Environmental risks" the task or activity must not be performed. An alternative solution must be found.	Manage and re-evaluate risk / opportunity to allow <u>Business Unit</u> reporting monthly Notify John Holland's relevant Board Committee and CEO / CFO	
B	Implement additional controls to reduce it to ALARP/SFAIRP.	Notify as soon as practicable, normally within 72 hours.	Project Director or JV Board (where applicable), or
	"WHS / Environmental risks - The activity or task must not be performed without the explicit concurrence of the Project Director / Project Manager.	Manage and re-evaluate risk / opportunity to allow <u>project</u> reporting monthly Notify COO / Business Group EGM / CFO	Regional EGM
C	Implement additional controls reduce it to ALARP/SFAIRP where it is cost-effective to do so.	Manage and re-evaluate risk / opportunity to allow <u>project</u> reporting <u>monthly</u>	John Holland Operational / Construction / Project Manager / Director
	"Onsite activities" – must not commence without Site		
D	Implement additional controls to reduce to ALARP / SFAIRP (may be tolerable).	Manage and re-evaluate risk / opportunity to allow <u>project</u> reporting <u>monthly</u>	John Holland Team Leader
E	Lower priority (likely to be tolerable).	Monitor, manage and carryout activity in accordance with identified controls	John Holland Supervisor

Aspect	Potential Environmental Impact	Risk Rating Consequence/ Likelihood	Control Measure	Residual Rating Consequence/ Likelihood	Management of residual risk
Approvals and licencing					
Not identifying appropriate approvals, licenses or permits required and proceeding without them.	Works delayed, infringements, prosecution, poor community relations and reputational loss.	C-Likely	Review the project EIS, modification and statutory documentation for requirements relevant to the works. Identify and implement approval requirements within the CEMP, sub-plans and ECMs. Check contract documentation. Identify and implement requirements from the Contract. Establish a register of approvals, licenses, permits. Pre-construction Compliance Report	D-Unlikely	Maintain Compliance Risk Matrix Undertake environmental audits as per Section 7 of this plan
Noise					
Noise from general construction activities resulting in impact to residents.	Disturbance to residents or neighbouring businesses. Potential for complaints.	B-Almost Certain	Control measures as per CNVMP are to be implemented. Respond to community enquiries and complaints in accordance with Sydney Metro requirements and Community & Stakeholder Manager (TfNSW), control measures as per Community Consultation Strategy (CCS) are to be implemented. Consult with the community in relation to upcoming activities that may result in concern. Monitor noise for compliance as the works progress at receiver locations. Provide periods of respite for high noise generating activities. Apply noise mitigation measures during entire project. Noise efficient equipment to be used on site.	C-Possible	Noise performance will be monitored as per the requirements of the Construction Noise and Vibration Management Plan
Noise during works required to be undertaken out of standard construction hours.	Disturbance to residents or neighbouring businesses with potential for complaints.	B-Almost Certain	Implement noise mitigation strategies for out of standard hours work. Monitor noise for compliance to project goals. Control Measures as per the CNVMP are to be implemented.	C-Possible	Noise performance will be monitored as per the requirements of the Construction Noise and Vibration Management Plan. Where high impact noise is required respite periods will be implemented where feasible.

Aspect	Potential Environmental Impact	Risk Rating Consequence/ Likelihood	Control Measure	Residual Rating Consequence/ Likelihood	Management of residual risk
Vibration					
Vibration intensive activities undertaken on the site such as impact piling, vibratory rolling, etc.	Disruption, annoyance and nuisance to residents. Potential damage to adjacent residential and commercial residences and structures. Disruption to businesses as a result of vibration nuisance	B-Almost Certain	Control Measures as per the CNVMP are to be implemented. Determine vibration limits and structure/receiver offset distances. Consult with potentially affected parties prior to commencement of works on their upcoming activities that may be impacted by construction vibration. Ongoing vibration monitoring during vibration intensive works	D-Unlikely	Standard and specific mitigation measures for sensitive receptors around the works will be applied as per the Construction Noise and Vibration Management Plan and the Construction Noise and Vibration Impact Statement.
Water quality, erosion and sedimentation					
Sediment laden runoff from construction works leaving site	Degradation of local watercourses. Increased turbidity in local water ways resulting in impact on aquatic life. Fines for sediment escaping site.	C-Almost Certain	Control Measures as per Soil and Water Management Procedure to be implemented. Install stormwater drainage protection within the project area. Ensure measures are inspected and maintained as the works progress and also prior to and post rainfall events. Provide training and awareness on the need to prevent pollution.	E-Unlikely	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Non-compliant water from construction works discharged from site	Non-compliant water entering stormwater system waterways (i.e. polluting - not compliant with discharge criteria).	C-Almost Certain	Environmental Manager (or delegate) to approve all water discharges from site. Induction and toolbox talks Toolbox training on site procedures for water discharge Educate site staff on licence conditions and consequences of prosecution	D-Unlikely	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Works with the potential to intercept ground water	Ground water entering excavations Without appropriate safeguards onsite could lead to ground water contamination	C-Possible	Induction and toolbox talks Toolbox training on site procedures for water discharge Educate site staff on licence conditions and consequences of prosecution Environmental Manager/representative to approve all water discharges from site	D-Unlikely	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Earthworks spoil disposal	Incorrect classification of waste (spoil) resulting in incorrect / illegal disposal/re-use.	C-Possible	Inductions, toolbox talks and training on recycling facilities and waste segregation practices. Separation of waste on site. Tracking of disposal processes.	D-Unlikely	Regular inspections of work areas Monitor and ensure reporting of all

Aspect	Potential Environmental Impact	Risk Rating Consequence/ Likelihood	Control Measure	Residual Rating Consequence/ Likelihood	Management of residual risk
			All contamination hotspots would be clearly marked in the field (where possible). Hot spots will be shown within contamination mapping and will be included in the Permit to Disturb process.		
Washout of concrete in undesignated areas.	Sediment laden/alkaline water polluting surrounding stormwater system / watercourses.	C-Almost Certain	Concrete washout areas clearly marked on ECM and delineated. Inductions on designated concrete washout areas.	D-Unlikely	Regular inspections of concrete washout areas and controls
Contamination					
Management of contaminated or untreated materials	Non-compliant material and contaminated water entering surrounding waterways. Decrease in health of nearby ecosystems.	C-Possible	Implement contamination management procedures and protocols from within Soil and Water Management Protocol. Identify any contamination hotspots and incorporate procedures for these locations into construction documentation. Develop unexpected finds procedures. Induct personnel on unexpected finds procedure.	D-Unlikely	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Monitor and ensure reporting of all movements of waste from the worksite
Potential for discovery of unexpected contaminated spoil during construction.	Health effects resulting from airborne contamination, e.g. asbestos. Complaints received from odours released during excavations. Classification of spoil is changed and disposal options altered, costs incurred associated with disposal of higher classification of waste.	C-Possible	If contaminated soil is encountered, all works are to stop in the vicinity of the find and investigations commence. Induct personnel on location, type, nature, concentration of contaminants on site if found.	D-Unlikely	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Complete regular toolbox talks on how to manage unexpected finds.
Hazardous Materials					
Storage of hazardous substances, leaking plant and equipment and spillage from refuelling.	Localised ground contamination / pollution of stormwater and requiring clean-up. Risk of igniting volatile substances. Unauthorised access to site / potential vandalism/damage leading to pollution.	D-Possible	Induction, toolbox talks and training on appropriate handling and storage of liquids. All storm water drains should be identified prior to works and protection installed. Storage areas to be appropriately bunded. SDS approved prior to bringing hazardous substances on site including risk assessment. ECM showing storage locations and associated controls e.g. spill kits, etc. Training in use of spill kits. Clearly label containers.	E-Unlikely	Regular inspections of storage areas.

Aspect	Potential Environmental Impact	Risk Rating Consequence/ Likelihood	Control Measure	Residual Rating Consequence/ Likelihood	Management of residual risk
			Regular auditing and inspection of storage areas and materials. Ensure all work sites are secure before leaving the site. All liquids i.e. paint etc. are to be securely locked away at the end of each shift.		
Fuel contaminated runoff from construction works leaving site	Fuel contaminated runoff entering stormwater or waterways (i.e. polluting - not compliant with discharge criteria).	D-Possible	All storm water drains should be identified prior to works and controls implemented. Appropriate bunding/storage of substances. Toolbox on site procedures for sediment controls and chemical storage. Educate site staff on project conditions and consequences of prosecution.	E-Unlikely	Regular inspections of works site to ensure all controls are in good health and working.
Biodiversity					
Vegetation trimming / clearing required outside approved work area.	Unauthorised works / removal of vegetation outside defined work area, possibility of removing threatened species, fines incurred.	D-Possible	Implement the controls within Flora & Fauna Management Procedure Induction and tool box training on clearance zones and required protection measures If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken and approval sought prior to trimming or removal. Inspections during clearing activities. Fencing in place/ clear marking of trees to be retained and cleared / demarcation areas / plans showing clearing areas. Pre clearing checklist to be completed before any clearing of vegetation.	E-Unlikely	Implement Vegetation Removal Permit System. Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Air Quality					
General construction works; site establishment, excavations, piling	Dust activity in close proximity to residential and commercial premises, complaints received.	D-Possible	Implement the controls within the Air Quality Management Procedure Toolbox training on Dust and Air Quality Management. Provide dust mitigation measures through water sprays/misting as required. Cover stockpiles that are not to be worked on for a period of greater than 10 days. ECM approved before works commence.	D-Possible	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Exhaust from plant and equipment.	Emissions resulting in air pollution.	D-Possible	Inductions and toolbox training on Dust and Air Quality Management.	E-Unlikely	Review plant check list prior to operating on site. Undertake verification checks as required.

Aspect	Potential Environmental Impact	Risk Rating Consequence/ Likelihood	Control Measure	Residual Rating Consequence/ Likelihood	Management of residual risk
			Well maintained plant/ equipment and pre-start checks and servicing. Non-complaint vehicles removed from site / repaired.		
Heritage					
Unexpected heritage items encountered.	Work delays, additional studies, approvals required, damage to heritage item.	D-Unlikely	Implement the controls within the Construction Heritage Management Plan General inductions toolbox training on heritage management protocols. If suspected heritage item encountered. work to stop immediately and Environment Manager contacted. Clearly highlight no-go zones on the ECM and communicate requirements to construction personnel during pre-start briefs, inductions and tool-box talks.	D-Unlikely	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Provide frequent toolbox talks on Unexpected Finds Procedure
Flora and Fauna					
Loss, damage or injury to flora or fauna.	Removal, death, damage or injury to flora or fauna by plant and equipment	E-Unlikely	Implement the controls within Flora and Fauna management procedure. All personnel attending site will be advised of controls and management during the onsite induction. If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken in accordance with the Vegetation Removal Permit System. If flora or fauna species are identified on site, work in the vicinity of these species would stop immediately. spotter/catcher/botanist would be engaged to survey the site and advise on species management.	E-Rare	Implement Vegetation Removal Permit System. Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Traffic					
Loss of on-street car parking in adjacent residential streets and commercial areas during construction.	Loss of parking availability to adjacent residential and commercial properties could result in community complaints.	D-Likely	Community notifications in accordance with Sydney Metro Community Consultation Strategy. Develop Traffic Management Plan / Traffic control procedures.	D-Possible	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Supervisor and traffic controller to monitor traffic management requirements

Aspect	Potential Environmental Impact	Risk Rating Consequence/ Likelihood	Control Measure	Residual Rating Consequence/ Likelihood	Management of residual risk
General construction traffic disturbing public access between local roads.	Disturbance to local residents resulting in complaints being made, limited access, potential for delays at local road access points resulting in complaints.	D-Likely	Deliveries of plant and materials shall be undertaken outside of peak periods where possible Scheduled road movements shall be minimised where possible Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or RMS. Implement Traffic Management Plans in consultation with relevant authorities. Detour routes to be advertised/ notified. Clear notifications / signage.	D-Possible	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets.
Management of heavy vehicles / access routes	Complaints from sensitive receivers due to increased level and frequency of noise.	D-Likely	Deliveries of plant and materials shall be undertaken outside of peak periods where possible Scheduled road movements shall be minimised where possible Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or RMS. Designated access routes. Implement Traffic Management Plans. Community Notifications. Pedestrian management with traffic controller in place where required.	D-Possible	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Permits from local council and/or RMS
Truck deliveries out of normal working hours	Un-approved deliveries resulting in non-conformance with project requirements. Noise impact to community / potential complaints	D-Likely	Induction on Construction Hours for deliveries. Communication of delivery times to suppliers. Community Notifications on project activities occurring locally. Code of conduct / selection criteria in place for subcontractors. Out of hours works approval where required Approved traffic/access routes. Planning and staging of works in approved hours as much as practical.	D-Possible	Delivery drivers provided with haulage routes prior to travelling to site and delivery times. Complete regular toolbox talks on how to minimise impacts in relation to traffic.
Visual Amenity					
Building Materials Temporary construction sheds and storage containers Plant and equipment movement Lighting	Surrounding aesthetic temporarily altered during construction Lighting towers used during out of hours works may spill on nearby residents	D-Possible	The work area shall be maintained in an orderly manner Lighting required during night works shall be directed towards the work area and are from adjacent sensitive receivers Perimeter hoarding to shield neighbouring businesses/residents	E-Unlikely	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Appendix D – John Holland Incident Reporting Classifications

Environmental Incident Severity Classification

OUTCOME	Report Only	Class 3	Class 2	Class 1
COST	n/a	up to \$50,000	\$50,000 to <\$500,000	more than \$500,000
REPUTATION		Public concern restricted to substantiated local complaint(s) or article(s) in local papers which is directly related to John Holland activities	State wide media attention directly related to John Holland Lobbying of State regulatory authority(ies) has potential to result in action against John Holland	National or international media attention directly related to John Holland Lobbying of federal or international authority(ies) has potential to result in action against John Holland
LEGAL		Minor non-compliance or non-conformance with Legislation or conditions of an Approval that does not result in formal Regulatory action	Breach ¹ of Legislation or conditions of an Approval resulting in Regulatory action in the form of one or more Infringements, fines or other penalty notices, suspension or cancellation of an Approval, or potential prosecution	Serious breach ¹ of Legislation or conditions of an Approval resulting in prosecution and/or significant financial penalties or contractual action against company, Executive Officers, or individuals
ENVIRONMENT	Pollution or degradation which is not related to John Holland operations	Pollution or degradation which has low severity impacts on the community and/or environment in the short-term (< 1 month duration) and is fully reversible with no residual impacts.	Pollution or degradation which has moderate severity impacts on the community and/or environment (1 - 3 months duration) but is fully reversible with no residual impacts.	Pollution or degradation which has high severity impacts on the community and/or environment and may have irreversible residual impacts.

¹ **Breach**- includes any non-compliance with legislation or conditions of an environmental approval or licence that results in formal regulatory action (such as improvement notice, penalties or prosecution against the company. For clarity, a breach does not include minor non-compliances with legislation or conditions of an environmental approval or licence that do not result in regulatory action.

Environmental Impact type

Impact	Report Only	Class 3	Class 2	Class 1
Dirt and mud on roads (DMR)	Tracking of soil onto roads resulting from an event that are not related to John Holland activities.	Tracking of soil onto local roads requiring minor clean-up: <ul style="list-style-type: none"> Exit controls are in place but ineffective (e.g. rumble grids, wheel-washes) Clean up regime in place but ineffective (e.g. street-sweepers). Occasional failure by trucks to cover loads in accordance with project requirements 	Tracking of soil material onto local roads requiring significant resources for clean-up works. <ul style="list-style-type: none"> Exit controls are required but not in place Clean up regime required but not in place Repeated failure by trucks to cover loads in accordance with project requirements Dangerous road surface has potential to result in an accident Warning letter or investigation by Local Government or State Government Agency 	Tracking of soil onto roads resulting in major clean-up works and major delays to arterial traffic. <ul style="list-style-type: none"> Accident resulting from dangerous conditions caused by soil tracked from project site or spoil lost from trucks Local Government or State Government Agency restricts access/egress to site, significantly affecting program
Erosion and Sediment Control (ESC)	Failure or lack of erosion and sediment controls resulting in alteration of landscape topography external to John Holland site and not related to John Holland activities	Failure or lack of erosion and sediment controls resulting in one or more of the following: <ul style="list-style-type: none"> Minor reversible alteration of landscape topography. Erosion causing minor offsite impacts that are immediately reversible. Placement of excavated soil or low toxicity materials in a location where it could potentially result in pollution (3P). 	Failure or lack of erosion and sediment controls resulting in one or more of the following: <ul style="list-style-type: none"> Significant release of sediment off-site into drains or receiving waters, causing significant impacts that are reversible in less than 3 months. Freshwater or marine water disruptions (up to 3 months). Placement of contaminated wastes or medium toxicity materials in a location where it could potentially result in pollution (2P). 	Failure or lack of erosion and sediment controls resulting in one or more of the following: <ul style="list-style-type: none"> Significant irreversible damage to ecological systems. Erosion causing major irreversible impacts to surrounding environments. Major clean-up works requiring significant resources (≥ 3 months). Placement of high toxicity materials in a drainage line or adjacent to a waterway resulting in prosecution (1P).

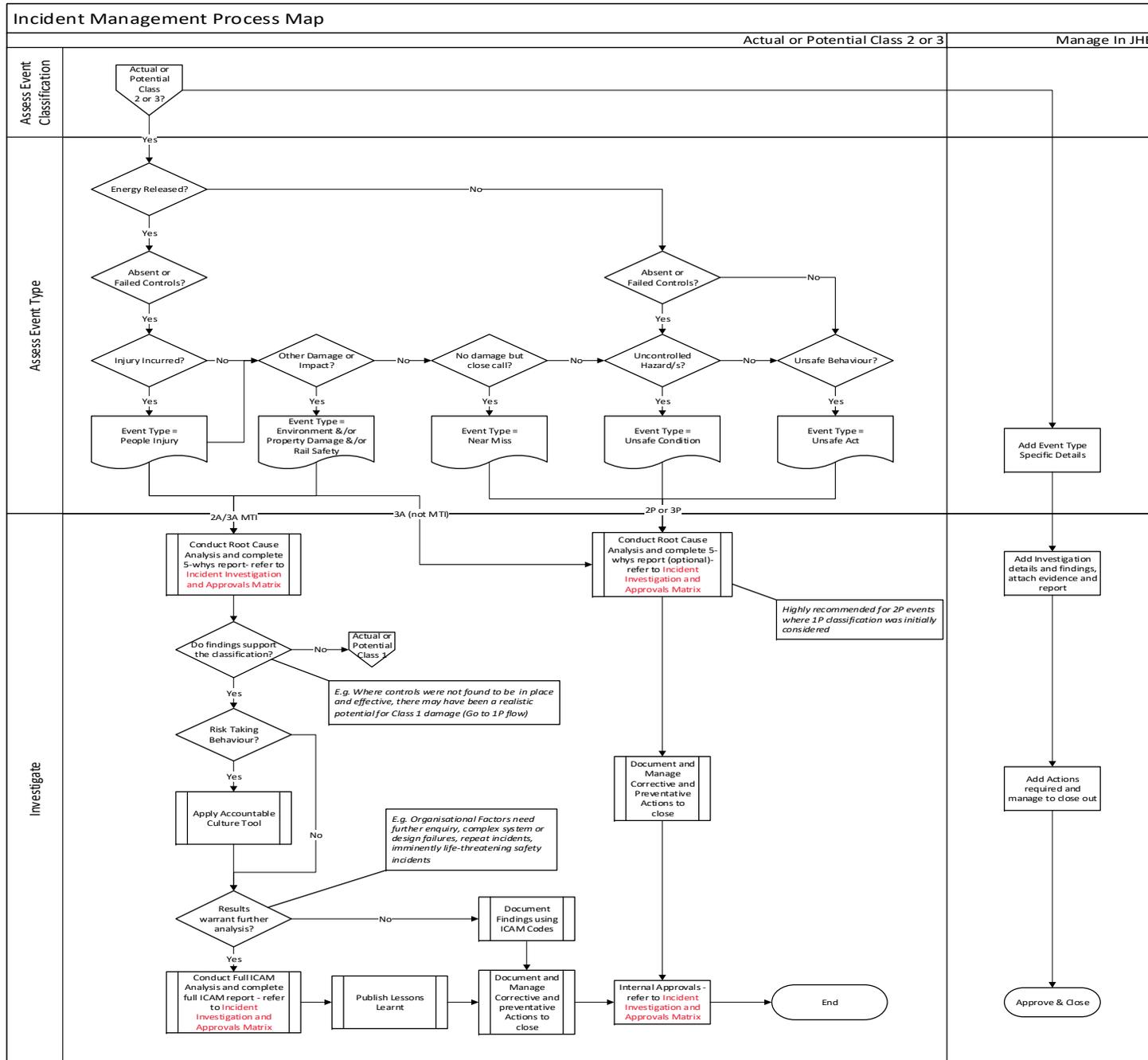
Impact	Report Only	Class 3	Class 2	Class 1
Acid Sulphate Soils (ASS)	Exposure, lack of containment or poor management of acid sulphate soils external to John Holland site and resulting from an event not related to John Holland activities.	<p>Minor exposure of acid sulphate soils:</p> <ul style="list-style-type: none"> ▪ Unauthorised entry to known acid sulphate soils site. ▪ Exposure of previously unidentified acid sulphate soils during works e.g. during excavation, clear and grub ▪ Noted failure of protective bunding – no run-off resulting ▪ Localised soil degradation 	<p>Exposure, lack of containment or poor management of acid sulphate soils:</p> <ul style="list-style-type: none"> ▪ Significant downstream ecological impact – small fish kill event, or decreased plant productivity; ▪ Runoff from acid sulphate soils entering water bodies or leaching into groundwater; ▪ Demonstrated short term impact to aquatic habitat ▪ Minor human health effects e.g. odour causing nausea, minor skin irritation Disruption of public recreational activities. 	<p>Mismanagement of acid sulphate soils results in high level or catastrophic downstream impacts:</p> <ul style="list-style-type: none"> ▪ Major ecological damage e.g. significant fish kill incident ▪ Demonstrated long term changes in aquatic habitat ▪ Significant damage to infrastructure ▪ Significant damage to aquatic
Contamination of Land & Groundwater (CON) (Inc. spills & contaminated soils)	<p>Spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land resulting from an event not related to John Holland activities</p> <p>Unexpected find or management of contaminated soil additional to baseline investigation that is not related to John Holland activities</p>	<p>Minor spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land.</p> <ul style="list-style-type: none"> ▪ No residual contamination of land; ▪ Spill contained to defined area(s) within site or workplace; ▪ No significant clean-up required other than removal of contaminated material to land farm or approved waste area; ▪ Release of low ecotoxicity substances (refer SDS). 	<p>Significant spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land. Some residual contamination of land;</p> <ul style="list-style-type: none"> ▪ Spill contained to defined area(s) within site or workplace; ▪ Significant clean-up required over and above removal of contaminated material to land farm or approved waste area; ▪ Release of moderate ecotoxicity substances (refer SDS); ▪ Spill of a volume that must be reported to a regulatory body. 	<p>Major spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land.</p> <ul style="list-style-type: none"> ▪ Persistent contamination of land; ▪ Residual effects experienced offsite; ▪ Extensive clean-up required; ▪ Release of high ecotoxicity substances (refer SDS);

Impact	Report Only	Class 3	Class 2	Class 1
Discharges to Surface Waters (WAT)	Discharge of pollutants to surface water resulting from an event not related to John Holland activities.	<p>Minor pollutant discharge to surface water, no permanent impact on water resources e.g.</p> <ul style="list-style-type: none"> ▪ Oil spill escapes into offsite stormwater system where it is contained and does not enter a flowing watercourse; ▪ Controlled discharge from sedimentation basin or site drainage system above allowable limits; 	<p>Significant and/or persistent discharge to water; or Short-term/localised impact on water resources e.g.</p> <ul style="list-style-type: none"> ▪ Oil spill escapes into offsite flowing watercourse; ▪ Uncontrolled discharge from sedimentation basin or site drainage system above allowable limits (eg pumping untreated water to receiving waters); 	<p>Major and/or multiple discharges of pollutant to water outside site or workplace. Wide spread or long-term impact (=> 3 months) on water resources e.g.</p> <ul style="list-style-type: none"> ▪ Acid drainage run-off from mining operations; ▪ Tailings dam failure; ▪ Extensive contamination / pollution of waterways or water catchment areas.
Noise, Vibration & Light Escape (NVL)	Generation of, noise, vibration, light or odour exceeding documented limits or controls and causing occasional inconvenience or disruption to community and the environment resulting from an event not related to John Holland activities	<p>Unplanned generation of, noise, vibration, light or odour exceeding documented limits or controls and causing occasional inconvenience or disruption to community and the environment e.g.</p> <ul style="list-style-type: none"> ▪ Occasional unplanned breach of noise, vibration or light criteria at sensitive receivers e.g. concrete pour takes longer than planned. ▪ Substantiated public complaint satisfactorily resolved at project level ▪ 'Please Explain' received from Regulatory Authority satisfactorily, resolved at project level 	<p>Generation of, noise, vibration, light or odour causing sustained periods of inconvenience or disruption to community and the environment e.g.</p> <ul style="list-style-type: none"> ▪ Sustained noise, vibration or light levels causes confirmed impact to sensitive receivers e.g. nesting or roosting birds, hospitals, schools. ▪ Noise, vibration or light levels continuously in excess of set criteria ▪ Vibration causes confirmed minor damage to property. ▪ Regulatory Authority investigation requiring intervention at Regional or Group level 	<p>Generation of, noise, vibration, light or odour causing severe damage to property outside site or workplace, or the environment or severe disruption to the community e.g.</p> <ul style="list-style-type: none"> ▪ Noise generated causes damage to hearing and human health; ▪ Vibration causes confirmed substantial damage to property.

Impact	Report Only	Class 3	Class 2	Class 1
<p>Dust, Odour & Emissions to Air (AIR)</p>	<p>Discharge of pollutant to atmosphere resulting from an event not related to John Holland activities</p>	<p>Minor discharge of pollutant to atmosphere outside site or workplace or in breach of a documented obligation e.g.</p> <ul style="list-style-type: none"> ▪ Overfill of cement silo, cement dust release; ▪ Occasional/sporadic exceedences of air quality criteria. ▪ Nuisance dust requiring minimal or no offsite clean-up (eg issue of carwash voucher) ▪ Refrigerant gas accidentally released to the atmosphere 	<p>Major or persistent releases of pollutant to atmosphere outside site or workplace or in breach of a documented obligation e.g.</p> <ul style="list-style-type: none"> ▪ Regular exceedences of air quality criteria. ▪ Nuisance dust levels requiring significant offsite clean-up (eg cleaning of inside of houses) ▪ Odour complaints requiring relocation of material or significant changes to waste, earthworks of stockpile management ▪ Refrigerant gas purposely released to atmosphere 	<p>Major or persistent discharge of hazardous pollutant to atmosphere outside site or workplace e.g.</p> <ul style="list-style-type: none"> ▪ Explosion or leak of hazardous gas; ▪ Possible or actual evacuation of local vicinity; ▪ Continuous exceedence of air quality criteria.
<p>Waste (solids, liquids, hazardous & non-hazardous classified/ prescribed, etc.) (WAS)</p> <p>Note: Refer to local dangerous goods legislation for appropriate manifest levels requiring Licences, placarding, etc.</p>	<p>Incorrect storage, transport, treatment or disposal of waste not related to John Holland activities</p>	<p>Unauthorised storage, transport, treatment or disposal of a minor, non-trivial quantity (up to 1000 litres, 1000 kg or 1.0 m3) of non-regulated waste in contravention of regulations or project waste management requirements.</p> <p>Examples include:</p> <ul style="list-style-type: none"> ▪ Disposal of materials in an incorrect waste facility or outside designated area (lay down/landfill areas). 	<p>Unauthorised storage, transport, treatment or disposal of a moderate quantity (up to 10,000 litres, 10 tonnes or 10.0 m3) of non-regulated waste, in contravention of regulations or project waste management requirements.</p> <p>Unauthorised storage, transport, treatment or disposal of a minor quantity (refer to legislation) of regulated waste (eg classified, prescribed, hazardous) in contravention of Waste Management Legislation</p> <p>Examples include:</p> <ul style="list-style-type: none"> ▪ Failure to meet regulatory requirements for environmentally hazardous waste disposal. 	<p>Unauthorised storage, transport, treatment or disposal of a significant quantity (=> 10,000 litres, 10 tonnes or 10.0 m3) of non-regulated waste, in contravention of regulations or project waste management requirements.</p> <p>Unauthorised storage, transport, treatment or disposal of a significant quantity (refer to legislation) of regulated waste (eg classified, prescribed, hazardous) in contravention of waste management Legislation</p> <p>Examples include:</p>

Impact	Report Only	Class 3	Class 2	Class 1
			<ul style="list-style-type: none"> ▪ Repeated dumping of non-hazardous waste in an incorrect waste facility or outside designated areas. 	<ul style="list-style-type: none"> ▪ Reasonable probability of being detrimental to public health.
Aboriginal & European Cultural Heritage (HER)	Damage to heritage structures resulting from an event not related to John Holland activities	<p>European Heritage Minor accidental, repairable damage to commonplace structures, or minor infringement of cultural values.</p> <p>Aboriginal Heritage Entering of protected sites</p>	<p>European Heritage Significant damage to registered structures / items of cultural / heritage significance,</p> <p>Aboriginal Heritage Damage to registered sites of significance, to artefacts, or significant infringement of known cultural values / sacred locations.</p>	<p>European Heritage Destruction or irreparable damage to highly valued structures / items / locations of cultural or heritage significance or value.</p> <p>Aboriginal Heritage Destruction or irreparable damage to artefacts, human remains or spiritual overlay.</p>
Flora & Fauna (inc. weeds & pathogens) (F&F)	Damage to flora or fauna resulting from an event not related to John Holland activities Introduction or spread of weeds or disease resulting from an event not related to John Holland activities	<p>Minor loss or impact on land or water based flora, fauna & habitat, but no negative effect on the eco-system or habitat. Limited damage to an area of land of no local ecological significance e.g.</p> <ul style="list-style-type: none"> ▪ Death of a native animal or species, that is not identified as a pest; ▪ Accidental felling of a tree; ▪ Over clearing of an area that is not native bush; ▪ Localised spread of weeds or pathogens material within site. 	<p>Medium impact on land or water based flora, fauna and habitat. Short-term impact on eco-system that is of regional significance. Damage that can be remediated e.g.</p> <ul style="list-style-type: none"> ▪ Partial destruction of native habitat leading to impact on local species numbers or disruption to breeding cycles; ▪ Short-term disruption of protected fauna breeding cycle. ▪ Unapproved clearing of an area of remnant native vegetation/Declared Threatened or Rare flora 	<p>Major loss or impact on land or water based flora or fauna. Destruction of ecologically significant habitat that is of national significance. Endangering viability of species, habitat or eco-system. Damage that cannot be remediated without risk of long-term loss e.g.</p> <ul style="list-style-type: none"> ▪ Unapproved destruction of habitat in a national park or similar; ▪ Death of an animal or species that is in danger of extinction;

Impact	Report Only	Class 3	Class 2	Class 1
				<ul style="list-style-type: none"> ▪ Clearing of a protected area of Declared Rare Flora in excess of 100m², or the destruction of more than 10 individual specimens of DRF ▪ Long term or permanent disruption of protected fauna breeding cycle
Impact on Availability of Resources (RES)	Temporary unplanned disruption to the availability of resources to the community or the environment resulting from an event not related to John Holland activities	<p>Operations cause temporary unplanned disruption to the availability of resources to the community or the environment. Minor impact on other energy / natural resource users outside site or workplace. Examples include:</p> <ul style="list-style-type: none"> ▪ Rehabilitation area disturbed. ▪ Land-use changed without approval from Client or Regulator ▪ Loss of water supply volume to localised minor environment due to continuous moderate leakage from reservoirs, pipelines, tanks, etc. 	<p>Operations cause substantial unplanned disruption to the availability of resources to the community or the environment. Significant impact on other energy / natural resource users outside site or workplace. Examples include:</p> <ul style="list-style-type: none"> ▪ Water usage / de-watering by operations causes loss of pressure or flow to local / adjacent water bores ▪ Disturbance to priority/rare flora ▪ Moderate to major loss of growth medium resources ▪ Unrecoverable loss of stockpiled growth medium (e.g. buried, flood) ▪ Loss of minor water supply volume off-site or continuous loss of supply water volume from non-licensed discharge point. 	<p>Operations cause persistent unplanned disruption to the availability of resources to the community or the environment. Exhaustion or serious degradation of natural resources for future use e.g.</p> <ul style="list-style-type: none"> ▪ Activities cause acid drainage run-off & subsequent deforestation of surrounding land ▪ Operations cause loss of flow in natural watercourses ▪ Continuous loss of supply water volume from non-licensed discharge point, with evidence of supply water contamination



Appendix E – John Holland Integrated Management System Procedures

IMS procedure references relevant to Environmental Management

Environment Management Manual [JH-MAN-ENV-001](#)

Strategic and Business Planning [JH-MPR-BUA-020](#)

Environment and Heritage Policy [JHG-POL-GEN-002](#)

Resource Planning [JH-MPR-PPL-003](#)

Project Launch [JH-MPR-PMA-001](#)

Planning and Programming [JH-MPR-PMA-002](#)

Environmental Planning [JH-MPR-ENV-001](#)

Managing SQE Risks [JH-MPR-SQE-006](#)

Global Mandatory Requirements 9, 10 & 11 ([JHG-STD-WHS-009](#), [JHG-STD-WHS-010](#) & [JHG-STD-WHS-011](#))

Learning and Development [JH-MPR-PPL-020](#)

Employee Records [JH-MPR-PPL-021](#)

Letting of Consultant, Subcontract, Supply Packages [JH-MPR-PMA-005](#)

Administration of Consultant, Subcontract or Supply Packages [JH-MPR-PMA-006](#)

Site Induction [JH-MPR-SQE-001](#)

Community Relations [JH-MPR-CCM-005](#)

Corporate Communications [JH-MPR-CCM-004](#)

Performance Statistics – Safety, Quality & Environment [JH-MPR-SQE-009](#)

Project Documentation Control Procedure [JH-MPR-QUA-005](#)

Inspection of Subcontracted Works [JH-MPR-QUA-003](#)

Hazardous Chemicals Management [JH-MPR-SQE-011](#)

Asbestos Procedure [JH-MPR-WHS-024](#)

Emergency Evacuation and Response [JH-MPR-PMA-008](#)

Monitoring and Review [JH-MPR-SQE-002](#)

Inspection, Testing and Surveillance [JH-MPR-SQE-004](#)

Workplace Hazard Identification and Inspection [JH-MPR-WHS-006](#)

Resource Use Reporting [JH-MPR-ENV-002](#)

Project Monthly Reporting and Reforecasting and Review [JH-MPR-PMA-015](#)

Independent Project Reviews [JH-MPR-PMA-018](#)

Non-conformance and Corrective Action [JH-MPR-SQE-007](#)

Incident and Event Management [JH-MPR-SQE-010](#)

Project Completion Procedure [JH-MPR-PMA-016](#)

Appendix F – John Holland ISO AS/NZS 14001:2016 Certification



Certificate of Conformity

John Holland Pty Ltd

ABN: 11 004 282 268

John Holland Rail Pty Ltd
John Holland Queensland Pty Ltd
John Holland (NZ) Ltd

To certify that their

Environmental Management System

has been assessed and registered as complying with the requirements of the
Australian/New Zealand Standard AS/NZS ISO 14001:2016 – *Environmental management systems –
Requirements with guidance for use.*

Scope of works covered by certification and locations

Refer to the Certification Schedule for further details.

Certification Number 20711
Issue Date 10/03/2020
Issue Number 09

Period of Registration
15/02/2019 to 15/02/2022

A handwritten signature in black ink, appearing to read 'John Edwards'.

John Edwards, Operations Director
dlcs international

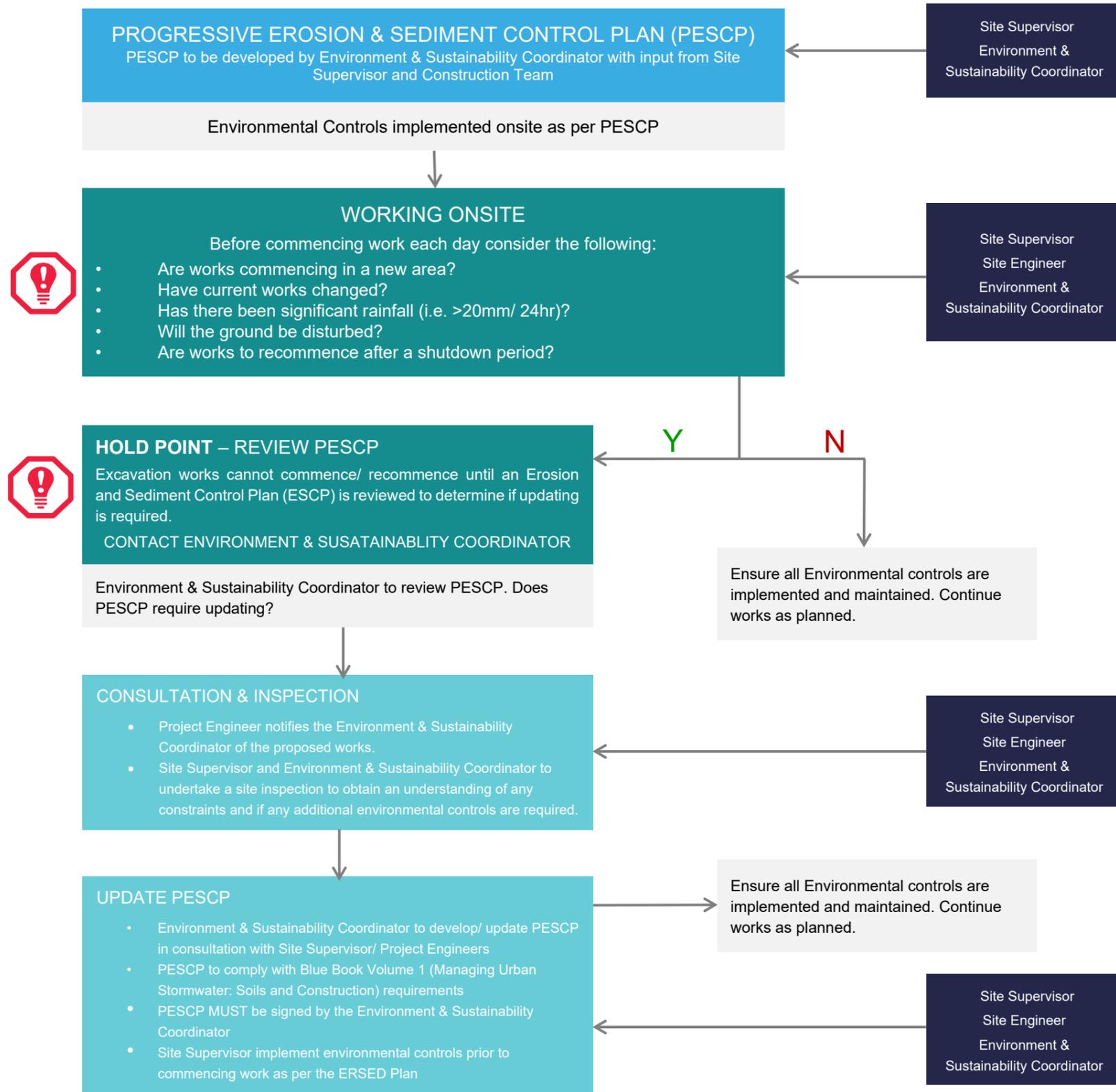
Certification is subject to ongoing surveillance assessments
The validity of this certificate can be verified at www.jas-anz.org/register

Appendix G – Soil & Water Management Procedure

SOIL & WATER MANAGEMENT PROCEDURE

EROSION & SEDIMENT MANAGEMENT

PESCP Flow Chart



PROGRESSIVE EROSION & SEDIMENT CONTROL PLAN

A Progressive Erosion and Sediment Control Plans (PESCP) will be developed for the site prior to commence of ground disturbance to minimise pollution of surface water through appropriate erosion and sediment control and to maintain existing water quality of surrounding surface watercourses. PECEP will be developed in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008). Measures would be designed as a minimum for the 80th percentile; 5-day rainfall event.

The PESCP will detail:

- required erosion and sediment control measures for the site
- overview of construction activities and their locations if they have the potential to impact on water courses storage facilities, stormwater flows, and groundwater
- Location of water treatment facilities and discharge points
- Details of temporary stockpiles, location and management

The PESCP will be progressively updated to reflect the current site conditions. All reviews and amendments will be conducted by the Environment & Sustainability Coordinator in consultation with the Site Supervisor & Engineer.

MONITORING

Sustainability & Environmental Site inspections include a review of erosion & sediment controls onsite, ensuring all controls are undamaged, functional, adequate and installed as per the PESCP. Reviews are to be conducted:

- Weekly (minimum)
- Prior & post site shutdown
- Prior & post a significant rainfall event, i.e. >20mm/24hr
- Changing work activities that may increase risk of erosion or working within a new area not listed on the current PESCP
- Inspection reports and PESCP documentation will be maintained in accordance with CEMP Section 8.

Refer to PESCP Flow Chart

EROSION & SEDIMENT PRINCIPLES

- The implementation of temporary erosion and sediment controls will be progressive and continual.
- Sediment control measures will be designed so that they are as close as possible to the potential source of sediment.
- Controls in place to prevent tracking dirt and mud onto roads.
- Minimise exposed surfaces and stabilised / revegetated as soon feasible and reasonable upon completion of construction.
- Diversion of clean water away around disturbed site areas, stockpiles and contaminated areas and to prevent water entering the work area.
- Installation of control measures downstream of works, stockpiles and other disturbed areas to minimise erosion.
- Any temporary controls (e.g. slope breaks, cross drains) will be reinstated at the end of each day.
- After rainfall events (>20mm in 24hrs), sediment and erosion controls will be inspected to ensure performance is as designed.
- In the event that contaminated material or suspected contaminated material is found (such as Acid Sulphate Soil, Asbestos or odorous / discoloured soil), work must stop and the Contamination & Asbestos Finds Procedure (SMCSWSWL-JHG-SWL-EM-PRO-000002) is to be followed.

SOIL & WATER MANAGEMENT PROCEDURE

WATER MANAGEMENT

WATER REUSE / DISCHARGE PROCEDURE

All reuse of water or discharge of water either onsite or offsite requires a **Water Reuse / Discharge Permit** (SMCSWSWL-JHG-SWL-EM-FOR-000001) in accordance with TfNSW Water Discharge and Reuse Guidelines 7TP-SD-024.

Water will generally be discharged via the onsite water treatment plan (WTP) to ensure water meets the NSW Water Quality Guidelines.

Where water that is not discharged via the WTP sampling is to be conducted onsite by a suitable qualified professional and tests will be conducted using a water quality meter or sent off to a NATA accredited lab if required (eg. TSS or Metals). Water Reuse / Discharge Permit are to be issued by the Environmental team and signed by the Discharger (Operator) and is only valid for the duration specified on the Permit.

To obtain a Permit contact the Environmental & Sustainability Coordinator.

Permits will be maintained in accordance with CEMP Section 8

WATER MANAGEMENT PRINCIPLES

- All dewatering systems must be planned and monitored to avoid spills, overflows and pollution.
- Water Treatment Plans are to be maintained appropriately and discharge monitored in accordance with the projects Monitoring Procedure (SMCSWSWL-JHG-SWL-EM-PRO-000008).
- Where feasible and reasonable construction water to be sourced from non-potable sources.
- All discharges from the construction water treatment plants would be monitored to ensure compliance with the discharge criteria outlined in the water discharge procedure above.
- When working in or over water, within flood affected areas or intersecting groundwater, controls must be in place and maintained to prevent pollution.
- Water efficient controls, fixtures and fittings in temporary facilities
- Where possible, harvesting and reusing rainwater from roofs of temporary facilities or using water from recycled water networks.
- Using water efficient construction methods and equipment.
- Providing designated sealed areas for equipment wash down and concrete washout areas and outlined in the Environmental Control Map (ECM).

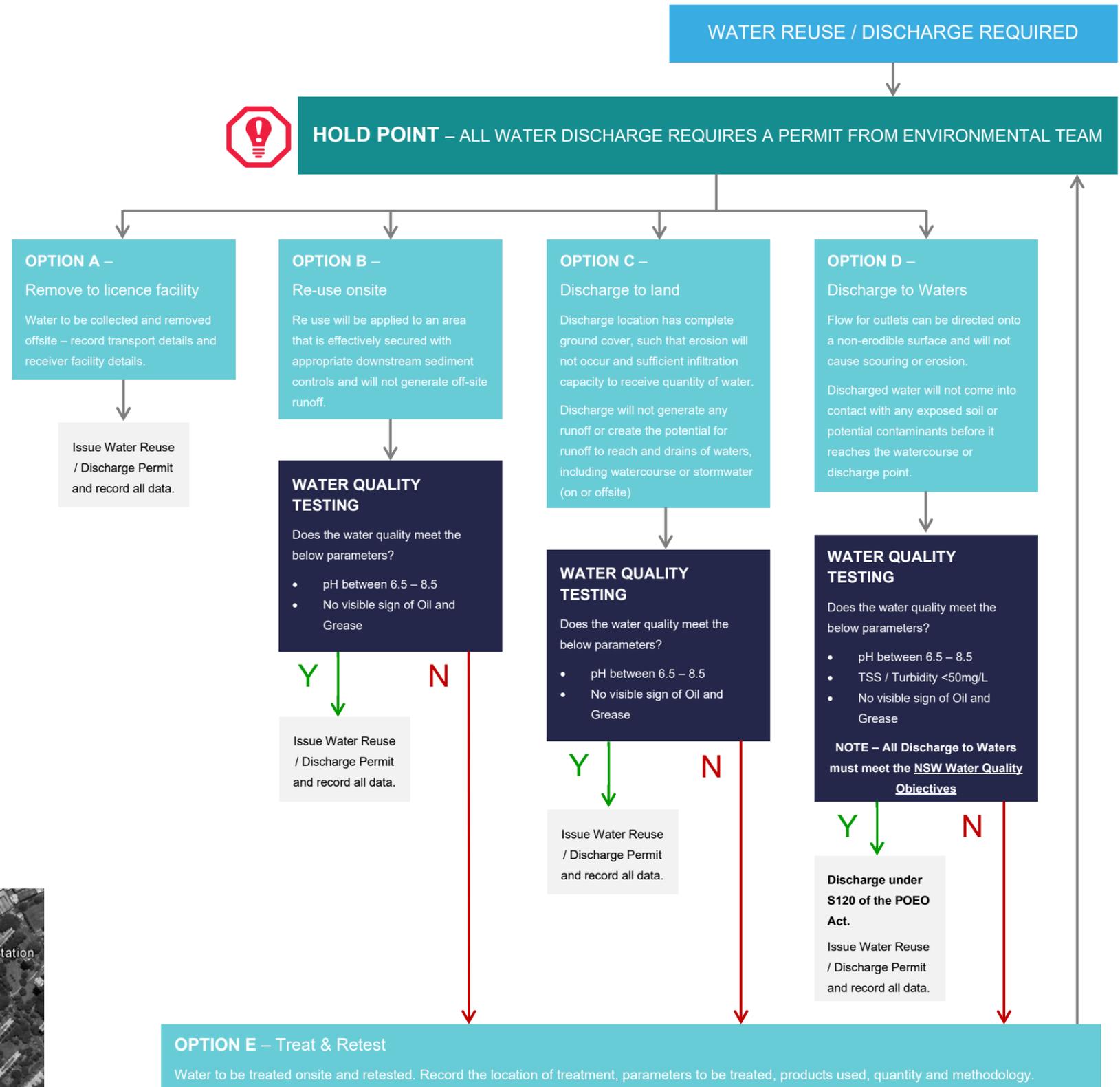
SURFACE WATER MONITORING

Baseline surface water monitoring was conducted during the development of the Sydney Metro Chatswood to Sydenham EIS by Sydney Metro and during TSE construction by the construction contractor. Monitoring was conducted to understand the current state of nearby waterbodies prior to construction works commencing and to provide insight into the baseline water quality for receiving water bodies. The Alexandra Canal is the closest receiving water, approximately 1.6km from the site.

During construction of Waterloo ISD surface water discharges will flow via the stormwater network into Alexandra Canal. Surface water monitoring will be conducted at the Alexandra Canal on a quarterly basis were water quality results will be compared to baseline water quality data to measure any potential improvements/impacts and to ensure



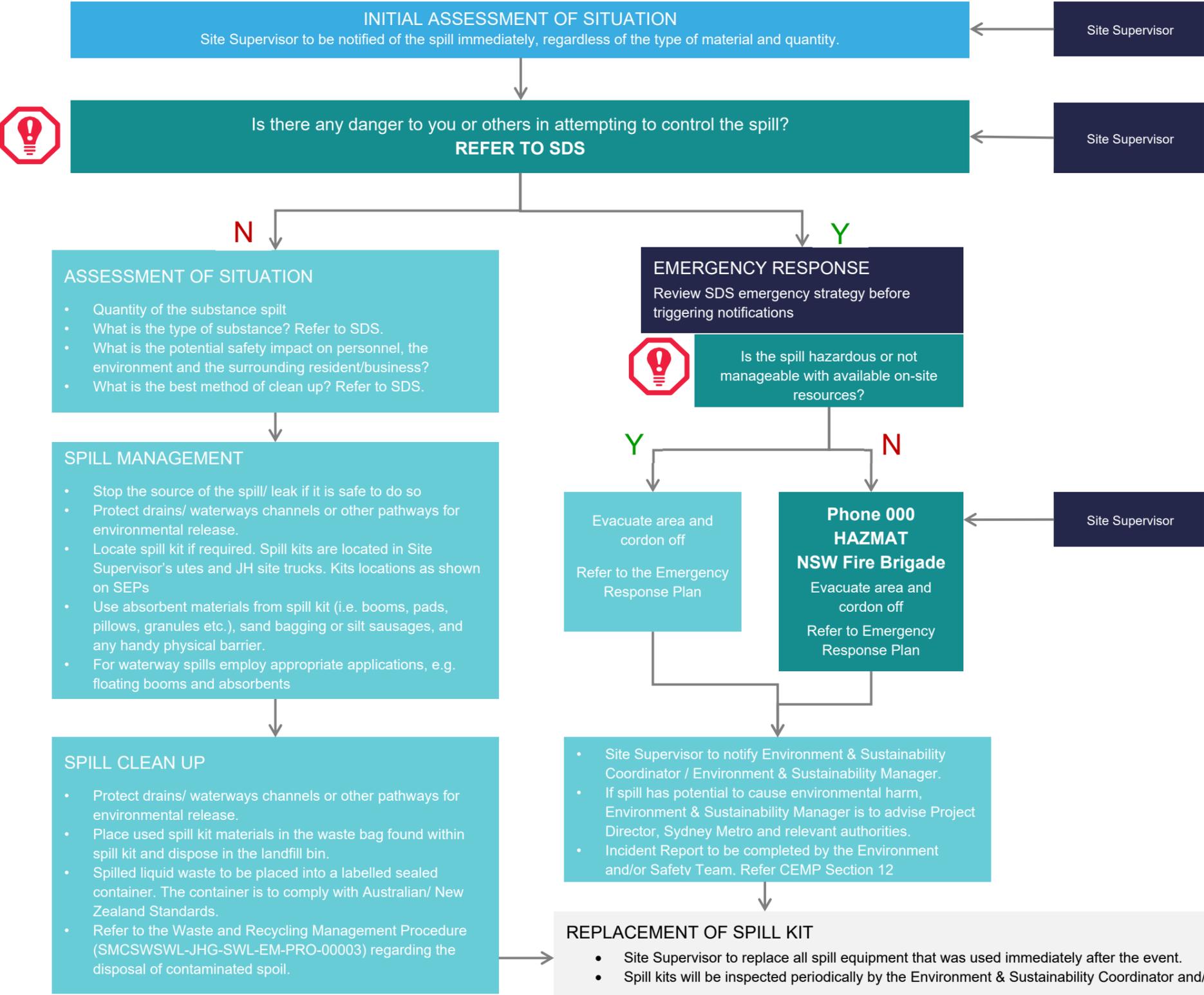
Water Reuse & Discharge Flow Chart



SOIL & WATER MANAGEMENT PROCEDURE

SPILL RESPONSE

MANAGEMENT AND RESPONSIBILITY



SPILL PREVENTION

- Dangerous goods and hazardous materials to be stored within bunded areas with a capacity of 110 per cent of the maximum single stored volume.
- Chemicals and fuel to be labelled and stored in bunded areas in accordance with the safety data sheet (SDS).
- Spill kit and fire response equipment to be located where chemicals and fuelled plant or equipment is being stored, operated or maintained and outlined in the Environmental Control Map (ECM).
- All hazardous substances to be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005) and Hazardous and Offensive Development Application Guidelines.

KEY CONTACTS

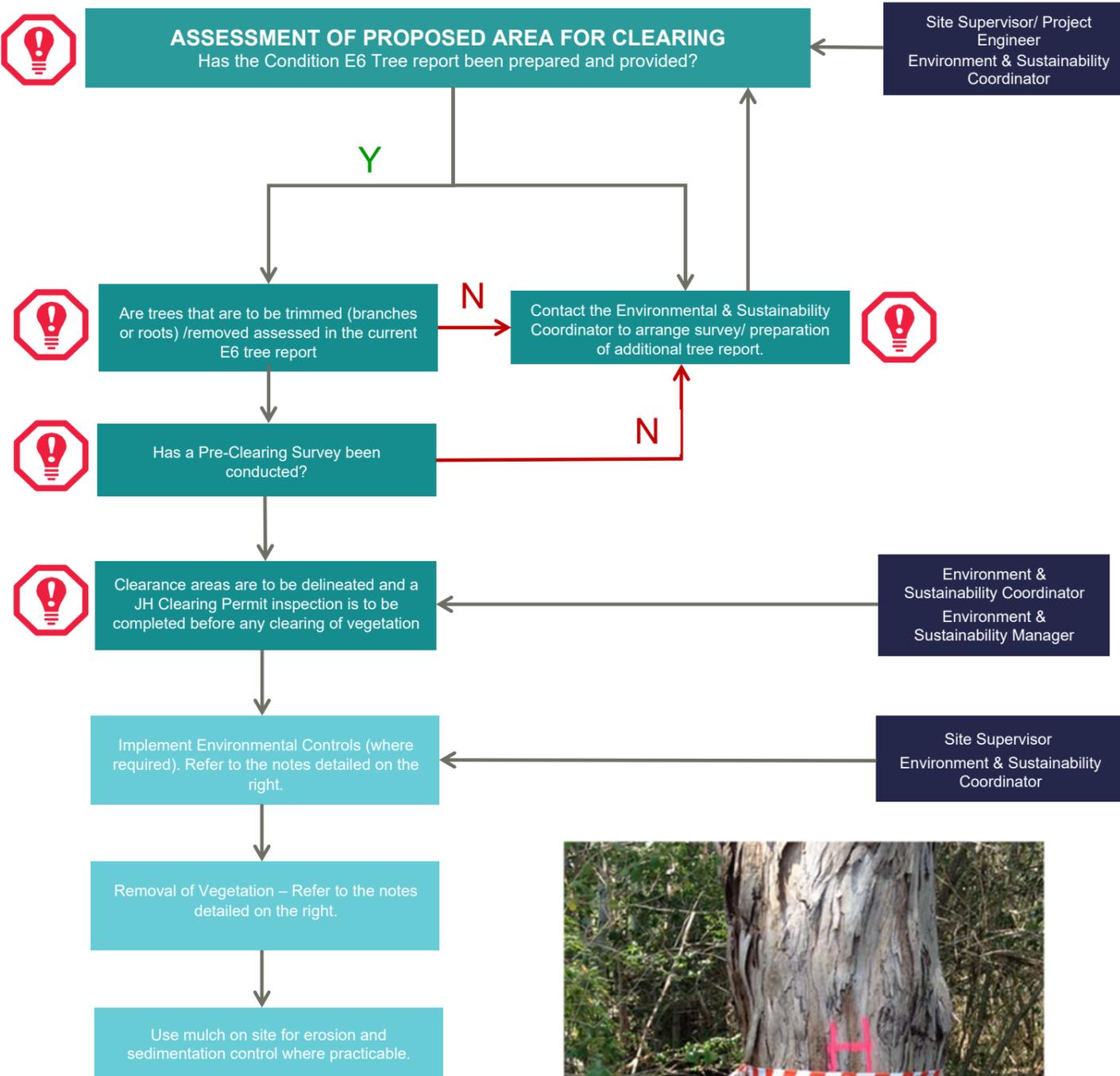
Environment & Sustainability Coordinator
Mitch Jones – 0411 076 046
Environment & Sustainability Manager
Sally Reynolds – 0499 923 019
Site Supervisor
TBC

Appendix H – Flora & Fauna Management Procedure

FLORA AND FAUNA MANAGEMENT PROCEDURE

VEGETATION CLEARING

MANAGEMENT AND RESPONSIBILITY



Note: In the event of an unexpected EEC/threatened species find, work will stop in the area and the Environment and Sustainability Manager contacted. Sydney Metro, DPIE and OEHL will be notified (as applicable) and management measures implemented based on advice from a qualified Ecologist



PROTOCOL

NOTE: No vegetation impacts (removal or branch/root trimming) are to commence until a Clearing Permit has been issued.

John Holland to prepare the Tree Report in accordance with CoA E6.

DELINEATE VEGETATION

Environment & Sustainability Coordinator and Site Supervisor to delineate the area of vegetation to be cleared or trimmed based on the Tree Report required by CoA E6 using fencing or flagging. Delineate area of vegetation to be retained and install "Tree Protection Zone – No Access" signage (see below).

Pre-clearing Survey and Inspection of Vegetation

- Pre-clearing Survey to be completed by Environment & Sustainability Coordinator and habitat trees marked with flagging or signage.
- Environment & Sustainability Coordinator to inspect for presence of fauna prior to any work commencing and manage any native fauna (refer to Animal Encounter Protocol).
- Toolbox talk or Pre-start Meeting to be undertaken to discuss limit of clearing, clearing procedures, fauna handling and any weed identification and control measures.

Note – Where applicable, existing trees that are to be retained will be protected in accordance with Australian Standard AS4970

IMPLEMENT ENVIRONMENTAL CONTROLS

- If grubbing is to be undertaken then erosion and sediment controls will be installed, where required, prior to grubbing to ensure that soil laden with seed does not run off site. Equipment storage areas and stockpile areas are to be located in cleared areas.
- Topsoil is to be separated from sub soil and green waste and stockpiled for reuse onsite or offsite. Stockpiles are to be on hardstand or appropriately delineated and must not be compacted.

REMOVE VEGETATION

Only clear within delineated area. **ANY CLEARING OR TRIMMING NEEDED OUTSIDE THE PROJECT FOOTPRINT MUST BE APPROVED BY THE ENVIRONMENT & SUSTAINABILITY MANAGER BEFORE THE ACTIVITY IS STARTED.**

Protocol for vegetation removal is as follows:

1. JH Clearing Permit to be signed and issued from Environment & Sustainability Coordinator.
2. All non-marked trees and features will be removed first. Groundcover habitat features that are not too large to be moved will be removed and searched by the Environment & Sustainability Coordinator.
3. All remaining marked habitat trees must be removed in the presence of a suitably qualified ecologist. Remove the tree by knocking (gently tapped with construction equipment) at the end of each day of clearing and groundcover features such as logs will be gently rolled and searched for the presence of animals.

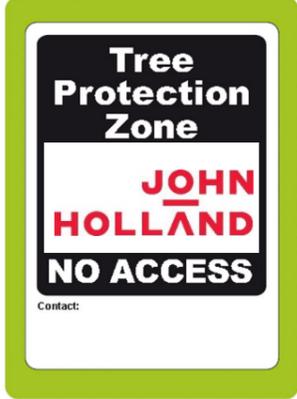
4. At least 48 hours after the clearance of non-marked vegetation, each habitat tree will be carefully removed in the presence of a suitably qualified ecologist and/or fauna rescue personnel, and thoroughly searched for the presence of animals:

- Marked trees will be shaken prior to felling using an excavator or similar equipment and then left for a specific period (determined by the qualified ecologist) to allow any fauna using the hollows to be observed.
 - Hollow-bearing trees will be slowly pushed over, with care taken to avoid damage to hollows.
5. Fauna rescue personnel (Environment & Sustainability Coordinator or qualified ecologist) will instruct the equipment operators regarding how and which side to fell the trees so that hollows can be quickly checked. In some circumstances sections of a tree containing a hollow or habitat may be individually removed prior to felling. For example, a hollow branch could be individually removed and placed gently on the ground for checking by fauna rescue personnel, prior to felling the tree. See Animal Encounter Protocol.

6. Habitat features to be used for habitat enhancement or in rehabilitation works will be relocated to adjacent habitat (subject to landowner consent).

- Any tree clearing will require presence of the Environment & Sustainability Coordinator:
 - Ensure all environmental controls (where required) are in place before removal of vegetation occurs.
 - Report any injured native fauna to the Environment & Sustainability Coordinator immediately. The Environment & Sustainability Coordinator will provide direction on relocation of the native fauna.
- If personnel are unsure where clearing may or may not be undertaken, contact the Environment & Sustainability Coordinator or Environment & Sustainability Manager prior to carrying out works.
- Mulch is to be reused on-site for erosion and sediment control or landscaping, if practicable. Residual mulch is to be taken to a recycling facility. Mulch/ green waste containing herbaceous noxious weeds will be managed in accordance with the Waste and Recycling Management Procedure (SMCSWSWL-JHG-SWL-EM-PRO-00003). Records of mulch/ green waste sent off site will be recorded.

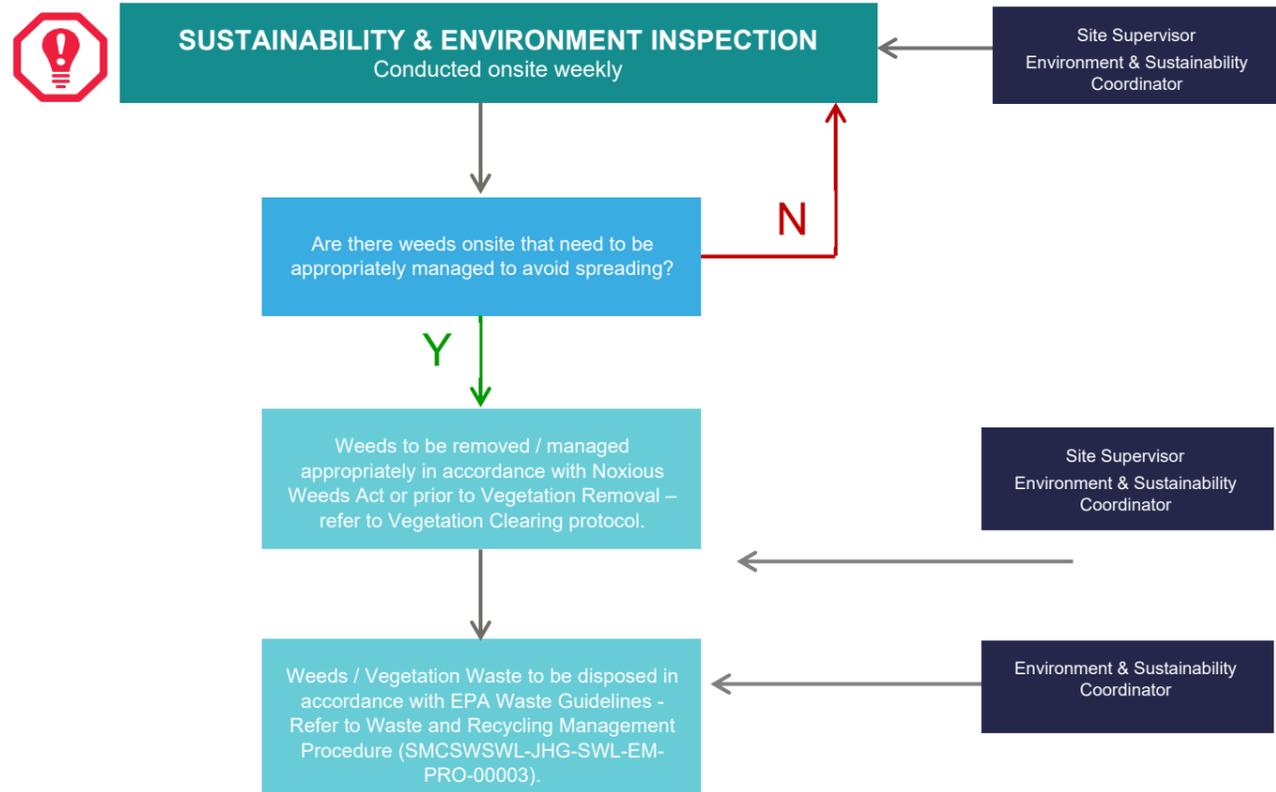
- Where tree removal cannot be avoided, replacement trees will be planted within or in close proximity to the site. Consultation with City of Sydney and agreement with DPIE will occur as required by CoA E6.



FLORA AND FAUNA MANAGEMENT PROCEDURE

WEED MANAGEMENT

MANAGEMENT AND RESPONSIBILITY



WEED PREVENTION MEASURES

The introduction of weed species onsite will be minimised through the following:

- all mobile plant and vehicles to be clean of any mud or organic material, prior to arriving or departing from site
- weed control work in advance of revegetation works to minimise the weed seed bank if required
- as far as possible, ensure any soil, plants or other materials entering the site are free of weeds and pathogens.
- areas of weed infestation to be identified by the Environment & Sustainability Coordinator prior to ground disturbance and management measures including on the ECM, e.g. disposal of weeds at an appropriate facility

WEEDS OF NATIONAL SIGNIFICANCE (WoNS)

Weeds have major economic, environmental and social impacts in Australia, causing damage to natural landscapes, agricultural lands, waterways, coastal areas and urban areas.

Weeds of National Significance (WoNS) are regarded as the worst weeds in Australia because of their invasiveness, potential for spread, and economic and environmental impacts and are to be managed on construction sites appropriately in accordance with the Noxious Weeds Act.

For additional information visit

<https://weeds.dpi.nsw.gov.au/>



Castor Oil Plant
Ricinus communis



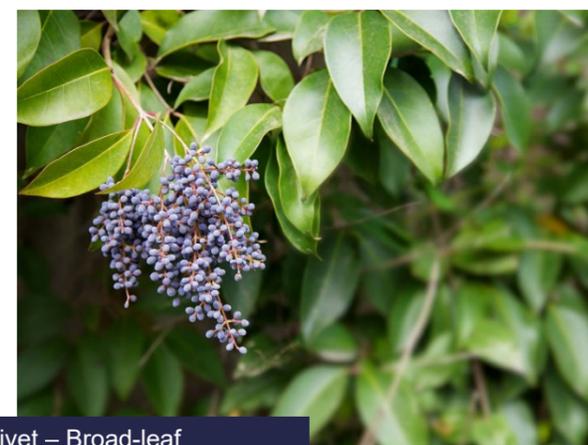
LANTANA
Lantana camara



Parthenium Weed
Parthenium hysterophorus



Artichoke thistle (Cordio)
Cynara cardunculus



Privet – Broad-leaf
Ligustrum lucidum

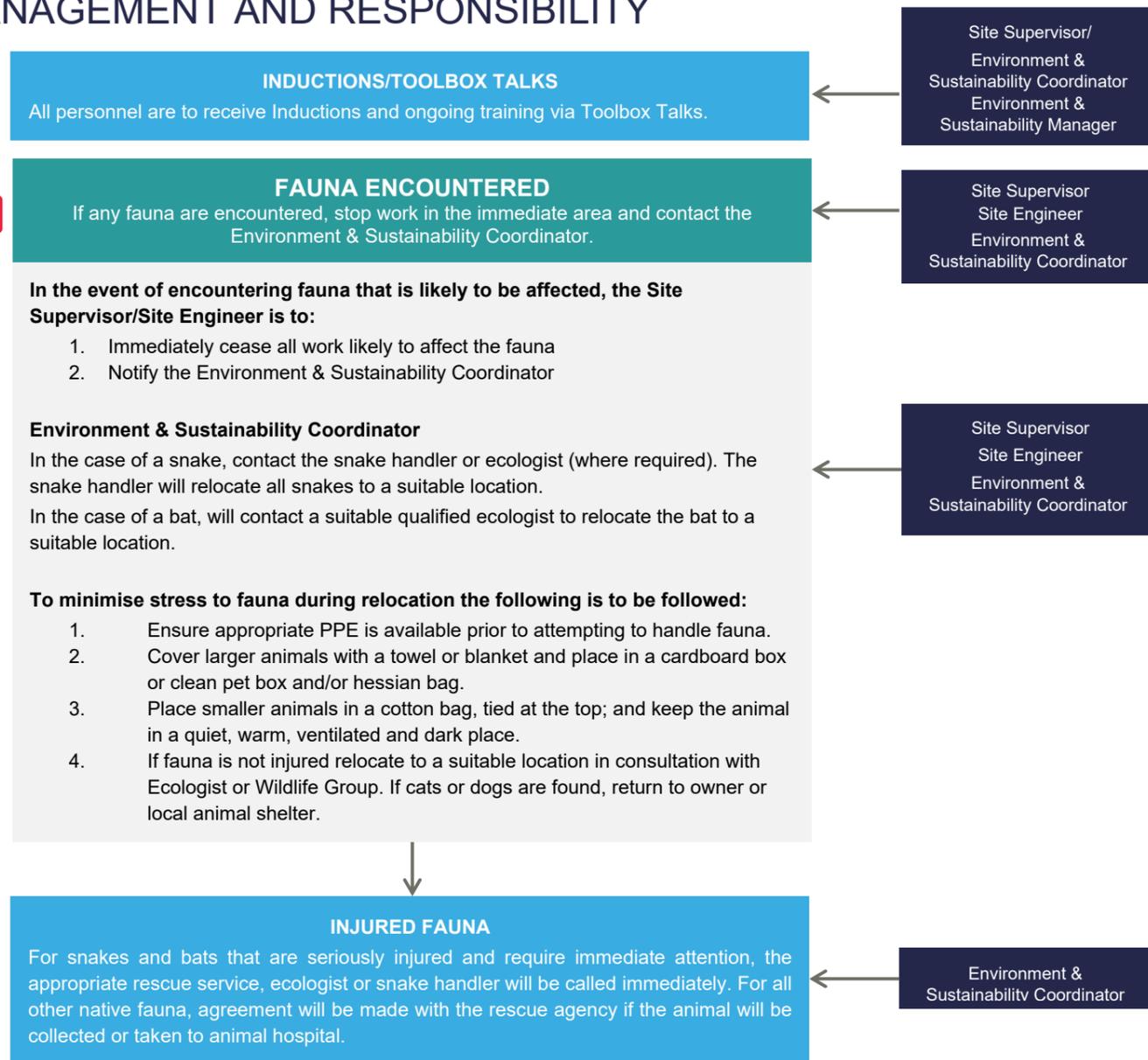


BLACKBERRY
Rubus fruticosus aggregate

FLORA AND FAUNA MANAGEMENT PROCEDURE

ANIMAL ENCOUNTER

MANAGEMENT AND RESPONSIBILITY



KEY CONTACTS

W.I.R.E.S	1300 094 737
RSPCA (Emergency)	1300 278 3589
Sydney Snake Catchers	1300 599 938
Alexandria Vet Hospital	02 9690 1905
Sydney Wildlife	02 9413 4300

Environment & Sustainability Coordinator
Mitch Jones – 0411 076 046
Environment & Sustainability Manager
Sally Reynolds – 0499 923 019
Site Supervisor
TBC –

PROTOCOL

HANDLING OF ANIMALS

1. If the animal cannot be handled (i.e. venomous reptile or bats), the exact location of the animal is to be recorded and provided to the snake handler or suitable qualified ecologist. All personnel and/or subcontractors are to be excluded from the vicinity.

Once the fauna specialist or ecologist arrives on site they are responsible for the fauna. Any decisions regarding the care of the animal will be made by them.

2. If the animal does not require immediate attention, as determined by the Environment & Sustainability Coordinator in consultation with the fauna specialist (where required), a rescue service will be called to collect any animals requiring attention.

3. In the event the rescue service cannot attend, the Environment & Sustainability Coordinator will deliver the injured/captured animal (other than snakes or bats) to the animal service/ shelter as soon as practically possible.

RELEASE REQUIRMENTS

(native fauna other than snakes or bats)

If the animal is not injured, the Environment & Sustainability Coordinator in consultation with the ecologist (where required) may release the fauna into a suitable area in accordance with the following procedures:

1. The Environment & Sustainability Coordinator in consultation with the ecologist (where required) is to be responsible for undertaking the release
2. If the species is nocturnal, release should be carried out at dusk if practicable.

(domestic animals i.e. dogs & cats)

If the animal is not aggressive, the Environment & Sustainability Coordinator in consultation with the Community and Stakeholder Team to make arrangements for the animal to be returned to its owner (if details are provided on the animals collar). If there are no details, the Environment & Sustainability Coordinator in consultation with the Community and Stakeholder team to make arrangements for the animal to be taken to the local council animal shelter. If the animal is aggressive, the Environment & Sustainability Coordinator is to arrange for the local council animal control officer to collect the animal.

If the animal is injured and not aggressive, the Environment & Sustainability Coordinator in consultation with the Community and Stakeholder team will take the animal to the nearest vet.

REPORTING

Records of any fauna handling will be entered into Project Pack Web.

Revision: 0E

Date: 12/06/20

Printed copies are uncontrolled

MINIMISING IMPACTS ON FAUNA

In order to reduce the impact on local fauna and minimise the possibility of a fauna encounter onsite the following mitigation measures will be implemented where possible.

- All vegetation clearing to be conducted under the vegetation clearing protocol in the presence of the project ecologist (where applicable).
- Flora and Fauna specific toolboxes to be conducted onsite prior to the removal of vegetation and throughout construction.
- All hollow bearing trees to be identified by the Environment & Sustainability Coordinator and documented on the ECM. In the event a hollow bearing tree is to be removed, a two stage clearing process is to be followed as outlined in the Vegetation Clearing Protocol.



Grey-headed flying fox
Pteropus poliocephalus



Brushtail Possum
Trichosurus vulpecula

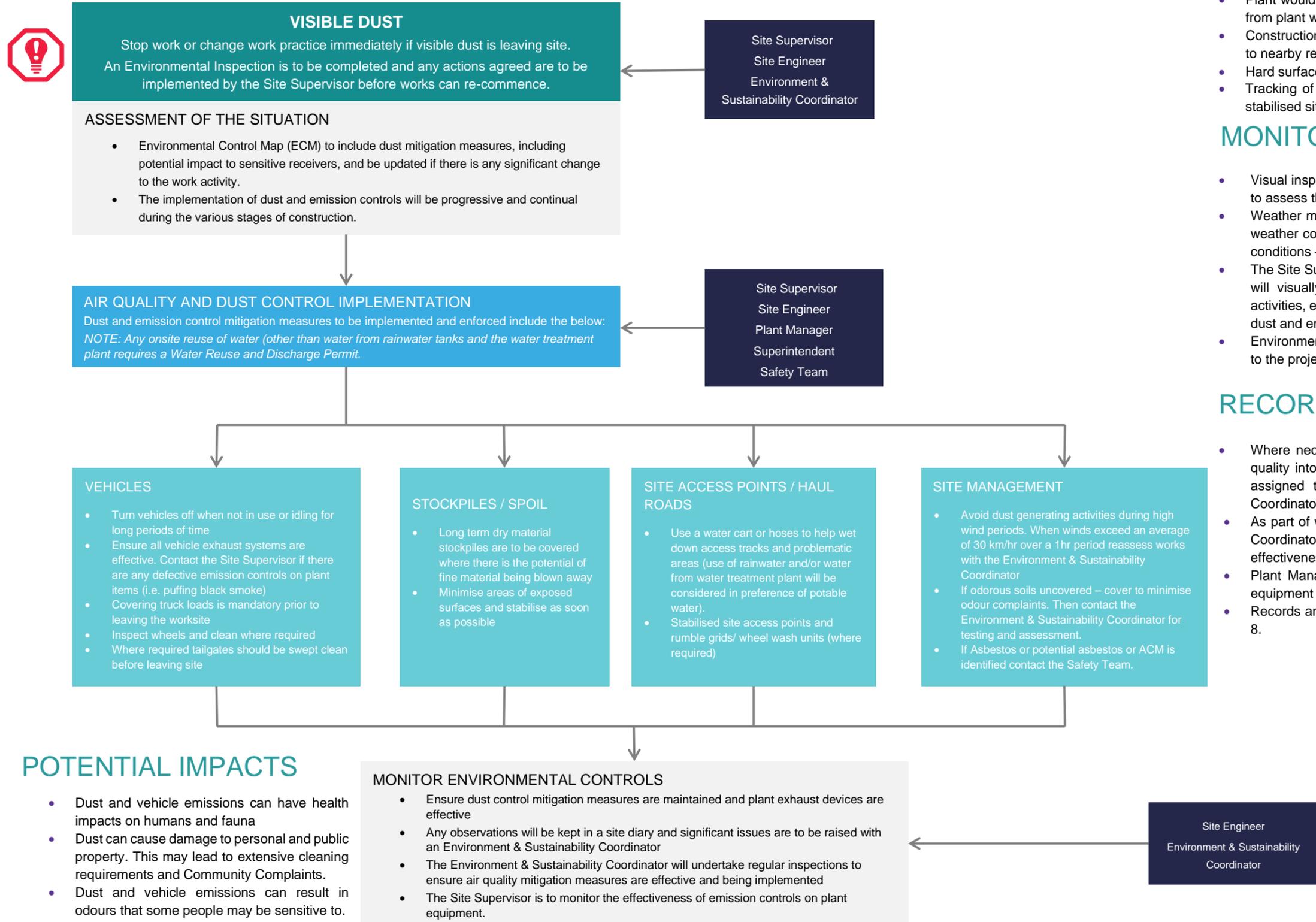


Masked Lapwing (Plover)
Vanellus miles

Appendix I – Air Quality & Dust Management Procedure

AIR QUALITY & DUST MANAGEMENT PROCEDURE

MANAGEMENT AND RESPONSIBILITY



POTENTIAL IMPACTS

- Dust and vehicle emissions can have health impacts on humans and fauna
- Dust can cause damage to personal and public property. This may lead to extensive cleaning requirements and Community Complaints.
- Dust and vehicle emissions can result in odours that some people may be sensitive to.

MANAGEMENT PRINCIPLES

- Unsurfaced haul routes and work area would be regularly damped down in dry and windy conditions.
- All vehicles carrying loose or potentially dusty material to or from the site would be fully covered.
- Stockpiles would be managed to minimise dust generation, e.g. covered or stabilised.
- The engines of all on-site vehicles and plant would be switched off when not in use for an extended period.
- Plant would be well maintained and serviced to minimise emissions. Emissions from plant would be considered as part of pre-acceptance checks.
- Construction site layout and placement of plant would consider air quality impacts to nearby receivers.
- Hard surfaces would be installed on long term haul routes and regularly cleaned.
- Tracking of dirt / dust onto public roads will be minimised through the use of stabilised site access and street sweepers where required.

MONITORING

- Visual inspection for airborne dust and dust deposition will be undertaken daily to assess the effectiveness of dust-suppression controls.
- Weather monitoring is to be conducted daily by the Site Supervisor to identify weather conditions which may result in dust generation i.e. dry, hot and windy conditions – details to be included in the daily pre-start information.
- The Site Supervisor, Site Engineer or Environment & Sustainability Coordinator will visually monitor daily construction activities (including dust generating activities, emissions from plant equipment and any excessive odours) to ensure dust and emission controls are effective.
- Environment & Sustainability Coordinator to provide a weekly weather forecast to the project team detailing the expected weather for the proceeding week.

RECORDING

- Where necessary Site Supervisors will record observations about dust & air quality into site diaries in Project Pack Web (PPW). If any actions are to be assigned this will be communicated to the Environment & Sustainability Coordinator.
- As part of weekly environmental inspections, the Environment & Sustainability Coordinator will inspect dust and plant emission controls onsite recording their effectiveness and any actions that need to be raised.
- Plant Manager is to keep records of all servicing of plant and construction equipment to ensure effective maintenance of emission control devices.
- Records and inspections will be maintained in accordance with CEMP Section 8.

KEY CONTACTS

Environment & Sustainability Coordinator
Mitch Jones – 0411 076 046
Environment & Sustainability Manager
Sally Reynolds – 0499 923 019
Site Supervisor
TBC