Construction Environmental Management Plan

Western Harbour Tunnel Stage 3A

STW-JHC-PLN-00-EN-002-000001

Transport for NSW

(prepared by John Holland CPB Contractors)

NSW GOVERNMENT

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Version control

Revision	Date	Prepared by	Reviewed by	Remarks
A	13/04/2022	Adrian Broger	Kathy Lloyd	Internal review
B	26/05/2022	Adrian Broger	Kathy Lloyd	Internal review
C	08/06/2022	Katie Baxter Adrian Broger	Adrian Broger	For TfNSW and ER
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Distribution of controlled copies

This CEMP is available to all personnel and subcontractors via the Project document control management system. An electronic copy can be found on the Project website.

The document is uncontrolled when printed.

List of emergency and key contacts

Position	Name	Phone
EPA pollution hotline	N/A	131 555
Fire and Rescue NSW	N/A	000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
The Ministry of Health	N/A	Camperdown Public Health Unit 02 9515 9420 (working hours) 02 9515 6111 (after hours)
SafeWork NSW	N/A	131 050
Inner West Council	N/A	(02) 9392 5000
24 hour community information line	N/A	1800 931 189
JHCPB Environment Manager	Charles Scarf	0438 247 725
JHCPB Project Director	Steven Keyser	0422 009 396
Environmental Representative	Gillian Lehn	0438 355 346
Acoustic Advisor	Sav Shimada	0499 001 460
TfNSW Representative	Tarnjit Chahal	02 8588 5005
TfNSW Environmental Representative	Mark Russell	0437 097 523

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Glossary/Abbreviations

Abbreviation	Expanded text
AA	Acoustic Advisor
AQOMP	Air Quality and Odour Management Sub-plan
AMS	Activity Method Statement
Ancillary facility	A temporary facility for construction of the CSSI including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory, material stockpile area and car parking facilities. *Note: where an approved management plan contains a stockpile management protocol, a material stockpile area located within the construction boundary is not considered to be an ancillary facility.*

Abbreviation	Expanded text
ASEMP	Ancillary Site Establishment Management Plan
ASS	Acid Sulfate Soils
CCM	Community Complaints Mediator
CCS	Community Communication Strategy
CEMP	Construction Environmental Management Plan (this document)
Compliance audit	Verification of how implementation is proceeding with respect to a Construction Environmental Management Plan (CEMP) (which incorporates the relevant approval conditions).
Construction	Includes all work required to construct the CSSI as described in the document listed in Condition A1 including commissioning trials of equipment and temporary use of any part of the CSSI but excluding Low Impact Work which carried out or completed prior to approval of the CEMP.
CSSI	Critical State Significant Infrastructure
CUT	Critical utility installation, relocation and protection works
DIPNR	Department of Infrastructure, Planning and Natural Resources
DPI	Department of Primary Industries
DPE	Department of Planning and Environment (formerly the Department of Planning, Industry and Environment)
DPIE	Department of Planning, Industry and Environment (now known as Department of Planning and Environment)
Ecologically sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992). The principles of Ecologically sustainable development are outlined in Clause 7(4), Schedule 2 the *Environmental Planning and Assessment Regulation 2000* (NSW).
EESG	Environment, Energy and Science Group
EIS	Environmental Impact Statement
EMM	Environmental Management Measure as outlined in the project EIS documentation.
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.

Abbreviation	Expanded text
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Environmental Representative (ER)	A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ER	Environmental Representative(s)
ESCP	Erosion and Sediment Control Plan
FFMP	Flora and Fauna Management Procedure
GMP	Groundwater Management Plan
HMP	Heritage Management Procedure
ICNG	*Interim Construction Noise Guidelines* (Department of Environment and Climate Change, 2009)
JHCPB	John Holland CPB Contractors
Material Harm	Refers to harm that: (a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or (b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
Minister, the	Minister for Planning and Homes
McoA	New South Wales Minister's Conditions of Approval
NML	Noise Management Level
NSW	New South Wales
NVMP	Noise and Vibration Management Sub-plan
Non-compliance	Failure to comply with the requirements of the Project approval or any applicable licence, permit or legal requirements.
Non-conformance	Failure to conform to the requirements of Project system documentation including this CEMP or supporting documentation.
PACHCI	Procedure for Aboriginal Cultural Heritage Consultation and Investigation
PESCP	Progressive Erosion and Sediment Control Plan
PDLP	Place, Design and Landscape Management Plan
PIRMP	Pollution Incident Response Management Plan
PIN	Penalty infringement notice
Principal, the	Transport for NSW
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Project, the	Western Harbour Tunnel project Stage 3A

Abbreviation	Expanded text
REMM	Revised Environmental Management Measure as outlined in the Project RtS
RMS	Former NSW Roads and Maritime Services (now part of Transport for NSW)
ROL	Road occupancy licence
RtS	Response to Submissions Report
SAP	Sensitive Area Plan
Secretary, the	The Secretary for Department of Planning and Environment
SMART	Specific, Measurable, Achievable, Relevant and Time-based
SMRP	Spill Management and Response Procedure
SSI	State Significant Infrastructure
Staging Report	The latest Staging Report prepared under Condition A10 and submitted to the Secretary for information
SSWMP	Soil and Surface Water Management Sub-plan
TfNSW	Transport for New South Wales
TRA	Task Risk Assessment
TSS	Total Suspended Solids
TTAMP	Traffic, Transport and Access Management Sub-plan
WFU	Warringah Freeway Upgrade (component of the Western Harbour Tunnel and Warringah Freeway Upgrade project)
WHT	Western Harbour Tunnel (component of the Western Harbour Tunnel and Warringah Freeway Upgrade project)
WHT Stage 3A	The Project
WMP	Waste Management Procedure

1 Introduction

1.1 Background

The Western Harbour Tunnel and Warringah Freeway Upgrade project comprises a new motorway tunnel connection across Sydney Harbour, and an upgrade of the Warringah Freeway to integrate the new motorway infrastructure with the existing road network and to enable the future connection of the Beaches Link and Gore Hill Freeway Connection project.

The Western Harbour Tunnel project will connect the approved M4-M5 Link in Rozelle to the Warringah Freeway at North Sydney/Cammeray. The project will traverse from Rozelle to Cammeray, primarily comprising twin 6.5-kilometre bored tunnels with a dual immersed tube tunnel crossing of Sydney Harbour. The construction of the project will be supported by a number of surface based ancillary facilities which will be located at White Bay in Rozelle, off City West Link in Rozelle, Yurulbin Park in Birchgrove, north and south cofferdams within Sydney Harbour, Berry's Bay in Waverton, Cammeray Golf Course in Cammeray and various sites adjoining the Warringah Freeway.

The Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement dated January 2020 (the EIS) was prepared to assess the impacts of construction and operation of the Western Harbour Tunnel and Warringah Freeway Upgrade project. A Response to Submissions report dated September 2020 (the RtS) was prepared in response to submissions received on the EIS. The EIS environmental management measures were revised and included in Part D of the RtS report.

The Western Harbour Tunnel and Warringah Freeway Upgrade project is classified as State Significant Infrastructure under Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and Clause 94 of the State Environmental Planning Policy (Infrastructure) 2007. The Western Harbour Tunnel and Warringah Freeway Upgrade project was declared Critical State Significant Infrastructure (CSSI) by the then NSW Minister for Planning and Public Space on 9 November 2020 under Section 5.13 under the EP&A Act and Clause 16 of the State Environmental Planning Policy (State and Regional Development) 2011.

The Western Harbour Tunnel and Warringah Freeway Upgrade project was approved by the then NSW Minister for Planning and Public Spaces on 21 January 2021.

The administration of provisions under the *NSW Environmental Planning and Assessment Act 1979* including the Western Harbour Tunnel and Warringah Freeway Upgrade project's planning consent (SSI#8863) is now under the portfolio of the NSW Minister for Planning and Homes (the Minister).

1.2 Project description

The Western Harbour Tunnel and Warringah Freeway Upgrade project is being constructed in three stages:

- Stage 1 – Early and Enabling Works:
    - Stage 1A – Critical utility installation, relocation and protection (CUT)
    - Stage 1B – Cammeray Golf Course adjustment works (CGC)
    - Stage 1C – Massey to Amherst noise wall (M2A)
    - Stage 1D – WHT construction power and utilities (WHTCP)
    - Stage 1E – Maritime Heritage – relocation of historic vessel *M.V. Cape Don* (MH)
- Stage 2 – Warringah Freeway Upgrade project (the Project and subject of this document):

    - Stage 2A – Warringah Freeway Upgrade early works (WFUEW)
    - Stage 2B – Warringah Freeway Upgrade main works (WFUMW)
- Stage 3 – Western Harbour Tunnel Project (WHT)
    - Stage 3A – Southern Tunnel Works (the Project)
    - Stage 3B – supplementary stages to be confirmed at a later stage (upon procurement of the WHT Contractor/s)

The Western Harbour Tunnel and Warringah Freeway Upgrade project is described in detail in Chapter 5 (Project Description) of the EIS. In summary, the Western Harbour Tunnel and Warringah Freeway Upgrade project will comprise:

- A new crossing of Sydney Harbour involving twin motorway tunnels connecting the M4-M5 Link at Rozelle and the Warringah Freeway at North Sydney (the Western Harbour Tunnel)
- Upgrade and integration works along the existing Warringah Freeway, including infrastructure required for connections to and from the Western Harbour Tunnel (the Warringah Freeway Upgrade). This will also include some infrastructure required to integrate the proposed Beaches Link and Gore Hill Freeway Connection project to reduce ongoing disruption to the Warringah Freeway.

This CEMP applies to the works associated with Stage 3A of the Western Harbour Tunnel project (the Project), the key features of which include:

- A portion of the twin mainline tunnels connecting the M4-M5 Link at Rozelle to the Warringah Freeway, near Cammeray, of about 2 kilometres long and commencing from the stub tunnels at the M4-M5 Link in Rozelle and terminating underground at Birchgrove
- Ventilation cavern and tunnel excavation in Rozelle
- Limited in tunnel operational infrastructure including road pavement and drainage to enable Stage 3B works

Construction works for the Project are anticipated to commence in approximately the fourth quarter of 2022 and are anticipated to be completed in the first quarter of 2025, as outlined in Table 1-1. Construction work hours are detailed in Section 3.6.

The Project works are clearly shown in Figure 1-1. A detailed summary of the activities to be undertaken for Stage 3A is shown in Section 1.4.

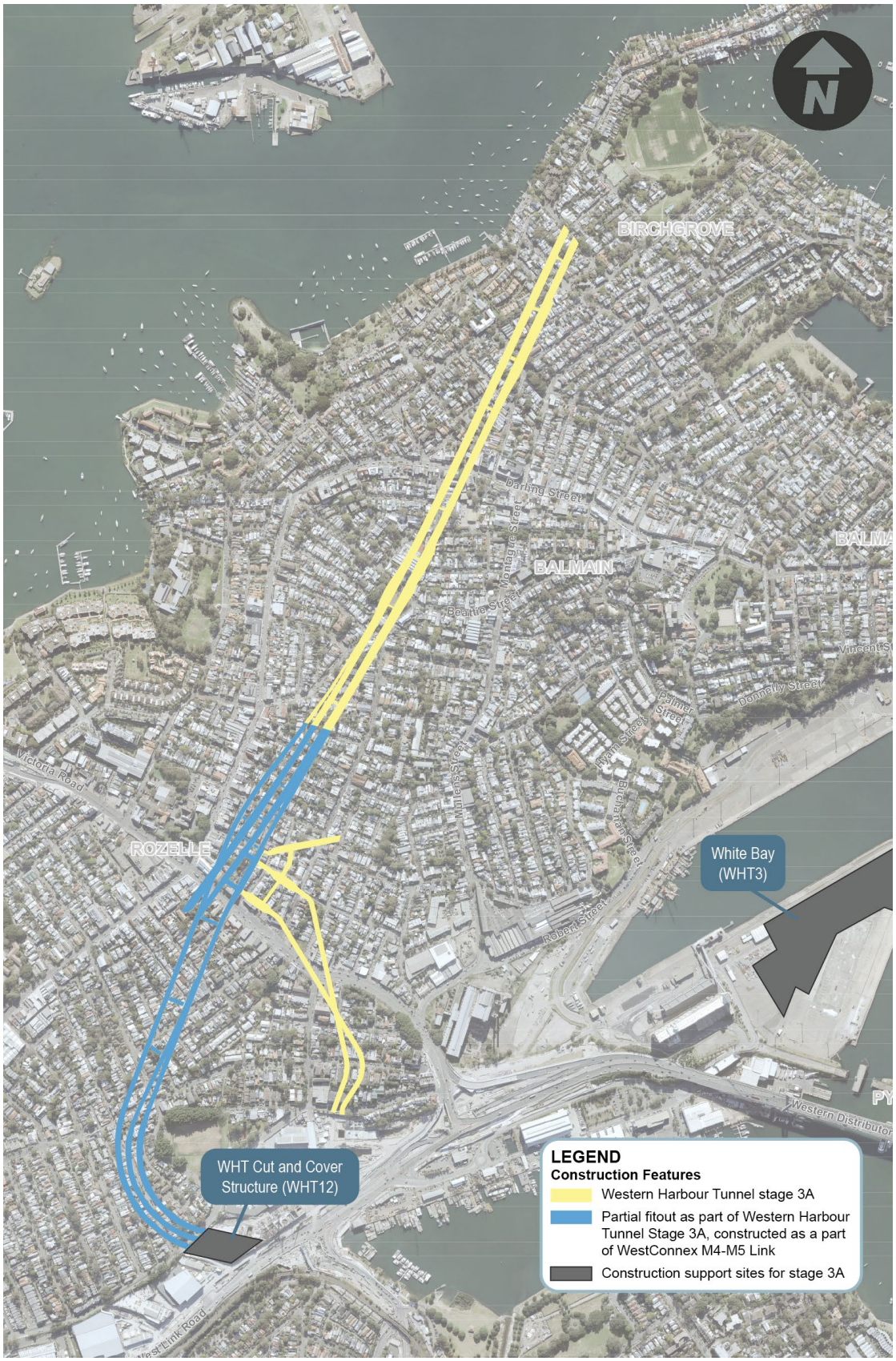

Figure 1-1 Key features of the Western Harbour Tunnel and Warringah Freeway Upgrade project and the Project (Stage 3A)

Table 1-1 Indicative Stage 3A construction timeframes

Stage	Indicative construction program															
	2022				2023				2024				2025			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Contract Start	✦															
Tunnel excavation				●	———	———	———	———	———	———	———	———	●			
In-tunnel operational infrastructure					●	———	———	———	———	———	———	———	———	●		
Stage 3A completion													✦			

1.3 Purpose of this CEMP

This CEMP and associated CEMP Sub-plans have been prepared to outline and describe how the Project will comply with the Minister's Conditions of Approval (McoA). Additionally, this CEMP outlines how JHCPB will minimise the environmental risks and achieve environmental outcomes on the Project by providing a structured approach to ensure appropriate Revised Environmental Management Measures (REMMs) and controls are implemented.

An overview of the Project is provided in Section 1.2, while a detailed description of the Western Harbour Tunnel and Warringah Freeway Upgrade project is provided in Chapter 5 (Project Description) of the EIS.

The purpose of this CEMP is to provide a structured approach to the management of environmental issues during construction of the Project. Implementing this CEMP will ensure that the Project meets regulatory and policy requirements, including Transport for NSW's (TfNSW) requirements and the McoA, in a systematic manner. The requirements of the Project approval and where they are met in this CEMP are shown in Table 1-2. Where relevant, aspect-specific Conditions are addressed in the relevant Sub-plans and have not been repeated in the table below. Stage 3A relevant REMMs are included in Table 1-2 where not already covered within the aspect-specific sub-plans.

This CEMP is the overarching document in the environmental management system for the Project and includes a number of management documents, including appended Sub-plans and procedures. The CEMP and any corresponding appendices are applicable to all staff and subcontractors associated with the construction of the Project.

Table 1-2 McoA requirements of the CEMP

McoA	Condition Requirements	Document Reference / How Addressed
General		
A1	The Proponent must carry out the CSSI in accordance with the terms of this approval and generally in accordance with the: (a) Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement – Volumes 1A-B and 2A-J (dated January 2020) (the EIS); and (b) Western Harbour Tunnel and Warringah Freeway Upgrade Response to Submissions Report (dated September 2020) (the RtS)	This CEMP
A2	The CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	This CEMP and sub-plans
A4	The Proponent must comply with the written requirements or directions of the Planning Secretary, including in relation to: (a) the environmental performance of the CSSI; (b) any document or correspondence in relation to the CSSI; (c) any notification given to the Planning Secretary under the terms of this approval; (d) any audit of construction or operation of this CSSI; (e) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval);	The Project will comply with the written requirements or directions of the Planning Secretary.

McoA	Condition Requirements	Document Reference / How Addressed
	(f) the carrying out of any additional monitoring or mitigation measures; and (g) in respect of ongoing monitoring and management obligations, compliance with an updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under this approval.	
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party; (c) documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations; (d) outline of the issues raised by the identified party and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	Consultation requirements are outlined in Condition C4 and C11. A summary of the consultation completed is contained within each relevant sub-plan of this CEMP.
A7	References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this approval.	Noted
Use of Construction Ancillary Facilities		
A18	The use of a construction ancillary facility for construction must not commence until the CEMP required by Condition C1, relevant CEMP Sub-plans required by Condition C4 and relevant Construction Monitoring Programs required by Condition C11 have been approved by the Planning Secretary.	This CEMP Section 2.2

McoA	Condition Requirements	Document Reference / How Addressed
A20	Boundary screening must be erected between ancillary facilities and are adjacent to sensitive land user(s) for the duration of the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners. All Boundary screening must minimise visual impacts on adjacent sensitive land user(s).	Section 4.11
Environment Representative		
A24	Work must not commence until an Environmental Representative (ER) has been nominated by the Proponent and approved by the Planning Secretary.	An ER has been nominated and approved by the Planning Secretary. This occurred prior to the commencement of works for Stage 3A.
A25	The proposed ER must be a suitably qualified and experienced person(s) who was not involved in the preparation of the documents listed in Condition A1, and is independent from the design and construction personnel for the CSSI and those involved in the delivery of it.	An ER has been nominated and approved by the Planning Secretary. This occurred prior to the commencement of works for Stage 3A.
A26	The Proponent may engage more than one ER for the CSSI, in which case the functions to be exercised by an ER under the terms of this approval may be carried out by any ER that is approved by the Planning Secretary for the purposes of the CSSI.	An alternate ER has been nominated and approved by the Planning Secretary. This occurred prior to the commencement of works for Stage 3A.

McoA	Condition Requirements	Document Reference / How Addressed
A27	For the duration of the work until the commencement of operation, or as agreed with the Planning Secretary, the approved ER must: (a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI; (b) consider and inform the Planning Secretary on matters specified in the term of this approval; (c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review documents identified in Conditions A10, A17, C1, C4 and C11 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so: (i) make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning 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 Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary/Department); (e) regularly monitor the implementation of the documents listed in Conditions A10, A17, C1, C4 and C11 to ensure implementation is being carried out in accordance with the document and the terms of this approval; (f) as may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A38 of this approval; (g) as may be requested by the Planning Secretary, assist in the resolution of community complaints, (h) consider or assess the impacts of minor ancillary facilities comprising lunch sheds; office sheds and portable toilet facilities as required by Condition A19 of this approval;	(a) Table 3-3 (b) Table 3-3 (c) Section 3.13.1 (d) Section 2, Section 3.13 (e) Section 3.9 (f) Section 3.9.3 (g) Table 3-3 (h) Table 3-3 (i) Section 3.13.1 (j) Section 3.3 (k) Section 3.3.1

McoA	Condition Requirements	Document Reference / How Addressed
	(i) consider any minor amendments to be made to the Ancillary Site Establishment Management Plan, CEMP, CEMP Sub-plans and monitoring programs without increasing impacts to nearby receivers or that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP Sub-plans and monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval. (j) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, and Environmental Representative Monthly Report provide the information set out in the Environmental Representative Protocol under the heading "Environmental Representative Monthly Reports". The Environmental Representative Monthly Report must be submitted within seven days following the end of each month for the duration of the ER's engagement for the CSSI, or as otherwise agreed by the Planning Secretary; and (k) assess the impacts of activities as required by the Low Impact Works definition.	
A28	The Proponent must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition A27 (including preparation of the ER monthly report), as well as: (a) the complaints register (to be provided on a weekly basis or as requested); and (b) a copy of any assessment carried out by the Proponent of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work).	Table 3-3
Acoustics Advisor		
A34	The approved AA (*Acoustics Advisor*) must: (a) receive and respond to communication from the Planning Secretary in relation to the performance of the CSSI in relation to noise and vibration; (b) consider and inform the Planning Secretary on matters specified in the terms of this approval relating to noise and vibration;	Section 3.13.1 Table 3-3

McoA	Condition Requirements	Document Reference / How Addressed
	(c) consider and recommend, to the Proponent, improvements that may be made to avoid or minimise adverse noise and vibration impacts; (d) review all proposed night-time works to determine if sleep disturbance would occur and recommend measures to avoid sleep disturbance or appropriate additional alternative mitigation measures; (e) 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 Planning Secretary (if required to be submitted to the Planning Secretary) or before implementation (if not required to be submitted to the Planning Secretary); (f) 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; (g) notify the Planning Secretary of noise and vibration incidents in accordance with Conditions A43 and A45 of this approval; (h) in conjunction with the ER, the AA must: i. as may be requested by the Planning Secretary or Community Complaints Mediator (required by Condition B12), help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits, ii. in the event that conflict arises between the Proponent and the community in relation to the noise and vibration performance of the CSSI, follow the procedure in the Community Communication Strategy approved under Condition B2 to attempt to resolve the conflict, and if it cannot be resolved, notify the Planning Secretary, iii. consider relevant minor amendments made to the Ancillary Site Establishment Management Plan, CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the terms of this approval and the management plans and monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, endorse the amendment, (this does not include any modifications to the terms of this approval), iv. review the noise impacts of minor construction ancillary facilities, and	

McoA	Condition Requirements	Document Reference / How Addressed
	v. prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, a Monthly Noise and Vibration Report detailing the AA's actions and decisions on matters for which the AA was responsible in the preceding month. The Monthly Noise and Vibration Report must be submitted within seven days following the end of each month for the duration of the AA's engagement for the CSSI, or as otherwise agreed by the Planning Secretary.	
Notification of Commencement		
A35	The Department must be notified in writing of the dates of commencement of construction and operation at least one month before those dates.	The Department will be notified in writing of the date of commencement of Stage 3A at least one month before this date.
A36	If the construction or operation of the CSSI is to be staged, the Department must be notified in writing at least one month before the commencement of each stage, of the date of the commencement of that stage.	The Department will be notified in writing of the date of commencement of Stage 3A at least one month before this date.
Auditing		
A37	Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit. This condition does not apply to the engagement of auditors required under Condition E145.	Section 3.9.3
A38	Independent Audits of the CSSI must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (DPIE, 2020).	Section 3.9.3
Incident and Non-Compliance Notification and Reporting		

McoA	Condition Requirements	Document Reference / How Addressed
A43	The Planning Secretary must be notified via the Major Projects Website immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and nature of the incident.	Section 3.8
A44	Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix A.	Section 3.8
A45	The Planning Secretary must be notified via the Major Projects Website within seven days after the Proponent becomes aware of any non-compliance. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one), set out the condition/s that is non-compliant, the nature of the breach; the reason for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.	Section 3.10
A46	A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 3.10
Identification of compounds		
A48	The CSSI name; application number; telephone number, postal address and email address required under Condition B8 of this approval must be made available on-site boundary fencing / hoarding at each ancillary facility before the commencement of construction. This information must also be provided on the website required under Condition B15 of this approval.	Section 4.11 CCS
Construction Environmental Management Plan		
C1	A Construction Environmental Management Plan (CEMP) must be prepared having regard to the *Environmental Management Plan Guideline for Infrastructure Projects* (Department of Planning, Industry and Environment, 2020). The CEMP must detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	This CEMP
C2	The CEMP must provide: (a) a description of activities to be undertaken during construction (including the scheduling of construction);	Section 1.2

McoA	Condition Requirements	Document Reference / How Addressed
	(b) details of environmental policies, guidelines and principles to be followed in the construction of the CSSI;	Section 1.4, Section 1.5 and Section 3.2.2 Aspect specific guidelines and principles are contained within the sub-plans for those aspects
	(c) 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 3.2.1
	(d) details of how the activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in Condition A1; and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition;	Section 3.2.3
	(e) an inspection program detailing the activities to be inspected and frequency of inspections;	Section 3.9
	(f) a protocol for managing and reporting any: (i) incidents; and (ii) non-compliances with this approval or statutory requirements;	Section 3.9
	(g) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;	Section 1.1
	(h) a list of all the CEMP Sub-plans required in respect of construction, as set out in Condition C4. 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 3.13 Section 4

<table>
<tr><th>McoA</th><th>Condition Requirements</th><th>Document Reference / How Addressed</th></tr>
<tr><td></td><td>(i) a description of the roles and environmental responsibilities for relevant employees and their professional / organisational relationship with the ER;</td><td>Section 3.3.1</td></tr>
<tr><td></td><td>(j) for training and induction for employees, including contractors and subcontractors, in relation to environmental and compliance obligations under the terms of this approval;</td><td>Section 3.5</td></tr>
<tr><td></td><td>(k) for periodic review and update of the CEMP and all associated plans and programs; and</td><td>Section 3.13</td></tr>
<tr><td></td><td>(l) the outcomes of consultation with government agencies in accordance with Condition A5.</td><td>Section 3.7</td></tr>
<tr><td>C3</td><td>The CEMP must be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one month before the commencement of construction, or where construction is staged no later than one month before the commencement of that stage.</td><td>This CEMP</td></tr>
<tr><td>C4</td><td>The following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant CEMP Sub-plan, including copies of all correspondence from those agencies as required by Condition A5.
<table>
<tr><th></th><th>Required CEMP Sub-plan</th><th>Relevant government agencies to be consulted for each CEMP Sub-plan</th></tr>
<tr><td>(a)</td><td>Traffic, transport and access</td><td>Relevant council(s)</td></tr>
<tr><td>(b)</td><td>Noise and vibration</td><td>NSW Health, relevant council(s)</td></tr>
</table></td><td>Section 3.13 and Appendices: B to G.

A summary of consultation undertaken is contained within the relevant sub-plans.

Flora and Fauna, Maritime Heritage, Non-Aboriginal Heritage, Aboriginal Cultural Heritage and Dredging and Disposal Management Sub-plans are not required/relevant to this stage of the WHT project.

A Flora and Fauna Management Procedure and Heritage Management Procedure have</td></tr>
</table>

<table>
<tr><th>McoA</th><th>Condition Requirements</th><th>Document Reference / How Addressed</th></tr>
<tr><td></td><td>
<table>
<tr><td>(c)</td><td>Flora and Fauna</td><td>DPI Fisheries, DPIE Water, EESG, and relevant council(s)</td></tr>
<tr><td>(d)</td><td>Air quality and odour</td><td>NSW Health, and relevant council(s)</td></tr>
<tr><td>(e)</td><td>Soil and surface water</td><td>DPIE Water, EESG, EPA, Sydney Water (if Sydney Water’s assets are affected) and relevant council(s)</td></tr>
<tr><td>(f)</td><td>Groundwater</td><td>DPIE Water, EESG, EPA, Sydney Water (where it is proposed to discharge groundwater into Sydney Water’s assets) and relevant council(s)</td></tr>
<tr><td>(g)</td><td>Maritime Heritage</td><td>Heritage NSW and relevant council(s)</td></tr>
<tr><td>(h)</td><td>Non-Aboriginal Heritage</td><td>Heritage NSW and relevant council(s)</td></tr>
<tr><td>(i)</td><td>Aboriginal Cultural Heritage</td><td>Heritage NSW</td></tr>
<tr><td>(j)</td><td>Dredging and Disposal Management Plan</td><td>EPA, DPI Fisheries, Port Authority of NSW (including Harbour Master)</td></tr>
</table>
</td><td>been prepared as part of this CEMP.</td></tr>
<tr><td>C5</td><td>The CEMP Sub-plans must state how:</td><td>Appendices: B to G</td></tr>
</table>

<table>
<tr><th>McoA</th><th>Condition Requirements</th><th>Document Reference / How Addressed</th></tr>
<tr><td></td><td>(a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;
(b) the mitigation measures identified in the documents listed in Condition A1 will be implemented;
(c) the relevant terms of this approval will be complied with; and
(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.</td><td></td></tr>
<tr><td>C9</td><td>The CEMP Sub-plans must be submitted to the Planning Secretary for approval along with, or subsequent to, the submission of the CEMP but in any event, no later than one month before construction</td><td>Appendices: B to G</td></tr>
<tr><td>C10</td><td>Construction must not commence until the CEMP and all CEMP Sub-plans have been approved, unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary, including any minor amendments approved by the ER must be implemented for the duration of construction. Where construction of the CSSI is staged, construction of a stage must not commence until the CEMP and sub-plans for that stage have been endorsed by the ER and approved by the Planning Secretary.</td><td>This CEMP</td></tr>
<tr><td colspan="3">Construction Monitoring Programs</td></tr>
<tr><td>C11</td><td>The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of construction of the CSSI against the performance predicted in the documents listed in Condition A1 or in the CEMP:
<table>
<tr><th></th><th>Required Construction Monitoring Programs</th><th>Relevant government agencies to be consulted for each Construction Monitoring Program</th></tr>
<tr><td>(a)</td><td>Noise and Vibration Monitoring Program</td><td>EPA</td></tr>
</table></td><td>Section 3.13 and Appendices: B to G.
A summary of consultation undertaken is contained within the relevant sub-plans.
Marine Monitoring Program and Dredging Management Program are not required for this stage of the WHT project.</td></tr>
</table>

McoA	Condition Requirements	Document Reference / How Addressed
	(b) Air Quality (including Odour) Monitoring — EPA (c) Surface Water Monitoring Program — DPIE Water, (Sydney Water if any Sydney Water assets are impacted), EPA (d) Groundwater Monitoring Program — DPIE Water, EPA (e) Marine Monitoring Program — DPI Fisheries, EPA (f) Dredging Management Program — DPI Fisheries, EPA	
C12	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;	Section 3.9 and applicable management sub plan

McoA	Condition Requirements	Document Reference / How Addressed
	(f) the location of monitoring; (g) the reporting of monitoring results and analysis results against relevant criteria; (h) details of the methods that will be used to analyse the monitoring data; (i) procedures to identify and implement additional mitigation measures where the results of the monitoring indicate unacceptable project impacts; (j) a consideration of SMART principles; (k) any consultation to be undertaken in relation to the monitoring programs; and (l) any specific requirements as required by Conditions C13 to C16.	
C17	The Construction Monitoring Programs must be developed in consultation with relevant government agencies as identified in Condition C11. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant Construction Monitoring Programs, including copies of all correspondence from those agencies as required by Condition A5.	Section 3.9 and relevant management sub plan
C18	The Construction Monitoring Programs must be endorsed by the ER and then submitted to the Planning Secretary for approval at least one month before the commencement of construction.	Section 3.9 and relevant management sub plan
C19	Unless otherwise agreed with the Planning Secretary, construction must not commence until all of the relevant Construction Monitoring Programs have been approved by the Planning Secretary, and all relevant baseline data for the specific construction activity has been collected.	Section 3.9 The project will not commence until all relevant baseline data for the specific construction activity has been collected, as outlined in eachrelevant monitoring program
C20	The Construction Monitoring Programs, as approved by the Planning Secretary including any minor amendments approved by the ER must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater	Section 3.9 and relevant management sub plan

McoA	Condition Requirements	Document Reference / How Addressed
C21	The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program. *Note: Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.*	Section 3.9 and relevant management sub plan
Construction Hours		
E66	Work must only be undertaken during the following hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 6:00pm Saturdays; and (c) at no time on Sundays or public holidays.	Section 3.6
E67	Except as permitted by an EPL, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken: (a) between the hours of 8:00 am to 6:00 pm Monday to Friday; (b) between the hours of 8:00 am to 1:00 pm Saturday; and (c) if continuously, then not exceeding three hours, with a minimum cessation of work of not less than one hour. For the purposes of this condition, 'continuously' includes any period during which there is less than one hour between ceasing and recommencing any of the work.	Section 3.6
Variation to Work Hours		
E68	Notwithstanding Conditions E66 and E67 work may be undertaken outside the hours specified in any of the following circumstances: (a) Safety and Emergencies, including:	Section 3.6

McoA	Condition Requirements	Document Reference / How Addressed
	(i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (ii) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm. On becoming aware of the need for emergency work in accordance with Condition E68(a)(ii), the Proponent must notify the AA, the ER, the Planning Secretary and the EPA of the reasons for such work. The Proponent must use best endeavours to notify all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work. (b) Low impact, including: (i) construction that causes LAeq(15 minute) noise levels: • no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, or • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s); or (ii) construction that causes LAFmax(15 minute) noise levels no more than 15 dB(A) above the rating background level at any residence; or (iii) construction that causes: • continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), or • intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006). (c) By Approval, including: (i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or	

McoA	Condition Requirements	Document Reference / How Addressed
	(ii) works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E69; or (iii) negotiated agreements with directly affected residents and sensitive land user(s). (d) By Prescribed Activity, including: (i) tunnelling (excluding cut and cover tunnelling and surface works) and tunnel fit out works (excluding surface works) are permitted 24 hours a day, seven days a week; or (ii) delivery of material that is required to occur outside of standard construction hours in Condition E66 to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to/from WHT7 at Berrys Bay which could result in a sleep disturbance event for receivers in the proximity of Bay Road and Balls Head Road, Waverton; or (iii) works within an acoustic shed where there is no exceedance of the NMLs; or (iv) trailer suction hopper dredging; or (v) along the Warringah Freeway corridor in accordance with Condition E88.	
Socio-economic, land use and property		
E100	The Proponent must identify the utilities and services (hereafter "services") potentially affected by construction to determine requirements for diversion, protection and/or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. The Proponent in consultation with service providers must ensure that disruption to services resulting from the Activity are avoided where practical and advised to customers.	Section 4.12
Condition Survey		
E107	The Proponent must offer pre-construction surveys and must undertake and prepare Pre-construction Condition Survey Reports where the offer is accepted, on the current condition of surface and sub-surface structures identified as at risk from settlement or vibration by the geotechnical model described in Condition E102 and the CNVIS required by Condition E75 or as directed by the Independent Property Impact Assessment Panel (IPIAP) established under Condition E111. The Pre-construction Condition Survey Reports must be prepared by a	Section 3.9.4

McoA	Condition Requirements	Document Reference / How Addressed
	suitably qualified and experienced person(s) and must be provided to the owners of the surface and sub-surface structures for review prior to the commencement of potentially impacting works.	
E108	Where pre-construction surveys have been undertaken in accordance with **Condition E107**, subsequent post-construction surveys must be undertaken to assess damage to the surface and sub-surface structures that may have resulted from construction within three months of landowner(s) requests.	Section 3.9.4
E109	The results of the post-construction surveys undertaken under Condition E108 must be documented in Post-construction Condition Survey Reports for each surface and sub-surface structure surveyed. The Post-construction Condition Survey Reports must be prepared by a suitably qualified and experienced person(s). Copies of the Post-construction Condition Survey Reports must be provided to the owner(s) of the structures surveyed no later than four months following the completion of construction activities that have the potential to impact on the subject surface / subsurface structure.	Section 3.9.4
E110	Where damage has been determined to occur as a result of the project, the Proponent must carry out rectification at its expense and to the reasonable requirements of the surface and sub-surface structure owner(s) within 12 months of completion of construction unless another timeframe is agreed with the owner of the affected surface or sub-surface structure.	Section 3.9.4
Contaminated sites		
E123	An Unexpected Finds Procedure for Contamination must be prepared before the commencement of work and must be followed should unexpected contamination or asbestos (or suspected contamination) be excavated or otherwise discovered. The procedure must include details of who will be responsible for implementing the unexpected finds procedure and the roles and responsibilities of all parties involved. The procedure must be submitted to the Planning Secretary for information.	Unexpected Contamination Finds Procedure (Appendix H2 of the SSWMP)
E124	The Unexpected Finds Procedure for Contamination must be implemented throughout construction.	Unexpected Contamination Finds Procedure (Appendix H2 of the SSWMP)

McoA	Condition Requirements	Document Reference / How Addressed
Sustainability		
E125	A Sustainability Strategy must be prepared to achieve a minimum “Excellent” ‘Design’ and ‘As built’ rating under the Infrastructure Sustainability Council of Australia infrastructure rating tool.	Sustainability Strategy
E126	The Sustainability Strategy must be submitted to the Planning Secretary for information before the commencement of construction and must be implemented throughout construction and operation.	Sustainability Strategy
E127	A Water Reuse Strategy must be prepared, which sets out options for the reuse of collected stormwater and groundwater during construction and operation. The Water Reuse Strategy must include, but not be limited to: (a) evaluation of reuse options; (b) details of the preferred reuse option(s), including volumes of water to be reused, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required; (c) measures to avoid misuse of recycled water as potable water; (d) consideration of the public health risks from water recycling; and (e) a time frame for the implementation of the preferred reuse option(s). The Water Reuse Strategy must be prepared based on best practice and advice sought from relevant agencies, as required. The Strategy must be applied during construction and operation. Justification must be provided to the Planning Secretary if it is concluded that no reuse options prevail. A copy of the Water Reuse Strategy must be made publicly available. *Note: Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational phases of the CSSI.*	Construction Water Reuse Strategy
Utility Coordination Manager		
E154	A Utility Coordination Manager must be appointed for the duration of the CSSI Work. The role of the Utility Coordination Manager must include, but not be limited to:	Table 3-3

McoA	Condition Requirements	Document Reference / How Addressed
	(a) the management and coordination of all utility Work associated with the delivery of the CSSI, to ensure respite is provided to the community; (b) providing advice to the Public Liaison Officer(s) regarding upcoming utility Work, including the scope of the work and the responsibility for the Work; and (c) investigating complaints received from the Community Complaints Mediator or the Public Liaison Officer(s) relating to utility Work and providing a response to the Community Complaints Mediator or Public Liaison Officer(s).	

McoA	Condition Requirements	Document Reference / How Addressed
Lighting and Security		
E155	The CSSI must be constructed in a manner that minimises visual impacts of construction sites, including providing temporary landscaping and vegetative screening 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.	Section 3.5.2 Section 4.11
E163	The Proponent must construct and operate the CSSI with the objective of minimising light spillage to surrounding properties. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of *AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting* and relevant Australian Standards in the series *AS/NZ 1158 – Lighting for Roads and Public Spaces*. Additionally, the Proponent must provide mitigation measures to manage any residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.	Section 3.5.2 Section 4.11
Waste		
E201	Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	Section 4.7
E202	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, as the case may be.	Section 4.7

McoA	Condition Requirements	Document Reference / How Addressed
E203	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, or to any other place that can lawfully accept such waste.	Section 4.7
E205	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	Section 4.7

Table 1-3 Revised Environmental Management Measures (REMMs) requirements of the CEMP

Note that where relevant, aspect-specific REMMs are addressed in the relevant Sub Plan, strategy or procedure and have not been repeated in the table below.

REMM	REMM Requirements	Document Reference	How addressed
SG7	Any soil/fill materials surplus to construction will be classified in accordance with the NSW EPA (2014a) Waste Classification Guidelines.	Section 4.7	Construction waste management has been incorporated within Section 4.7 of this CEMP.
SG10	The Construction Waste Management Plan for the project will include procedures for handling and storing potentially contaminated substances.	Section 4.7	Construction waste management has been incorporated within Section 4.7 of this CEMP.
LP2	Land subject to temporary use, including areas of public open space, will be rehabilitated as soon as practicable to an appropriate land use, taking into consideration the location, land use characteristics, area and adjacent land uses. This will be carried out in consultation with the relevant council and/or the land owner.	Section 4.13	Land subject to temporary use will be restored in accordance with this REMM.
V1	Construction support sites will be developed to minimise visual impacts for adjacent receivers where feasible and reasonable.	Section 4.11	Stage 3A of the project will be delivered predominantly from within the WHT cut and cover

REMM	REMM Requirements	Document Reference	How addressed
			structure to minimise the visual impact of the support site. The measures outlined in Section 4.11 would be implemented to manage residual impacts, as required.
V2	Storage areas and associated works will be located in cleared and otherwise disturbed areas away from residential areas where feasible and reasonable.	Section 4.11	Stage 3A of the project will be delivered predominantly from within the WHT cut and cover structure to minimise the visual impact of the support site. The measures outlined in Section 4.11 would be implemented to manage residual impacts, as required.
V3	Site hoardings will be in neutral colours and designs**,** in proximity to open space**,** to help blend them into the surrounding environment.	Section 4.11	Stage 3A of the project will be delivered predominantly from within the WHT cut and cover structure to minimise the visual impact of the support site. The measures outlined in Section 4.11 would be implemented to manage residual impacts, as required.
V4	Site hoarding and perimeter site areas will be maintained regularly to include the prompt removal of graffiti.	Section 4.11	Stage 3A of the project will be delivered predominantly from within the WHT cut and cover structure to minimise the visual impact of the support site. The measures outlined in Section 4.11 would be implemented to manage residual impacts, as required.
V5	Site lighting will be designed to minimise glare issues and light spillage into adjoining properties and be generally consistent with the requirements of Australian Standards and Guidelines 4282 – ~~1997~~ **2019** Control of the obtrusive effects of outdoor lighting.	Section 4.11	Stage 3A of the project will be delivered predominantly from within the WHT cut and cover structure to minimise the visual impact of the support site. The measures outlined in Section 4.11 would be implemented to manage residual impacts, as required.

REMM	REMM Requirements	Document Reference	How addressed
V6	Hoardings and temporary noise walls will be erected as early as possible within the site establishment phase to provide visual screening.	Section 4.11	Stage 3A of the project will be delivered predominantly from within the WHT cut and cover structure to minimise the visual impact of the support site. The measures outlined in Section 4.11 would be implemented to manage residual impacts, as required.
V7	High quality fencing suitable for parks and public spaces will be used where construction support sites are located in close proximity to sensitive residential receivers such as residents and users of recreational space.	Section 4.11	Stage 3A of the project will be delivered predominantly from within the WHT cut and cover structure to minimise the visual impact of the support site. The measures outlined in Section 4.11 would be implemented to manage residual impacts, as required.
V8	Existing trees adjacent to the works will be retained and protected where possible to screen construction support sites, minimising clearing where possible.	NA	Stage 3A are predominantly occurring underground, with any surface-based activities occurring at pre-established facilities with no vegetation removal anticipated. Furthermore, there are no trees within the Stage 3A footprint surrounding WHT12 or WHT3 support sites.
V9	Where possible, trees will be trimmed rather than removed. Works will be carried out by a qualified arborist	NA	No tree removal or trimming is anticipated as part of Stage 3A.
V10	All areas disturbed by construction and not required for operation of the project will be restored to existing condition.	Section 4.13	All areas disturbed by construction and not required for operation of the Project will be restored to existing condition.
WM2	The resource management hierarchy principles established under the *Waste Avoidance and Recovery Act 2001* of avoid/reduce/reuse/ recycle/dispose will be applied.	Section 4.7.1	Construction waste management has been incorporated within Section 4.7 of this CEMP.

REMM	REMM Requirements	Document Reference	How addressed
WM3	Wastes **for land disposal** will be classified in accordance with the NSW Environment Protection Authority *Waste Classification Guidelines: Part 1 Classifying Waste*.	Section 4.7.3	Construction waste management has been incorporated within Section 4.7 of this CEMP.
WM4	Wastes will be appropriately transported, stored and handled according to their waste classification and in a manner than prevents pollution of the surrounding environment.	Section 4.7.2	Construction waste management has been incorporated within Section 4.7 of this CEMP.

1.4 Scope of the CEMP

This CEMP and Sub-plans were prepared in accordance with Roads and Maritime Services (RMS) Specification G36 and the *Environmental Management Plan Guideline for Infrastructure Projects* (DPIE, 2020). They are also written to align with AS/NZS ISO 14001.

In particular, this CEMP:

- Describes the Project in detail, including activities to be undertaken and relative timing
- Addresses the requirements of the MCoA, the EIS, the REMMs listed in the RtS, and applicable guidance and legislation
- Provides specific mitigation measures and controls that can be applied on site to avoid or minimise negative environmental impacts
- Provides specific mechanisms for compliance with applicable policies, approvals, licences, permits, consultation agreements and legislation
- Describes the environmental management related roles and responsibilities of personnel
- States objectives and targets for issues that are important to the environmental performance of the Project
- Outlines a monitoring regime to check the adequacy of controls as they are implemented during construction.

The Legal and Compliance Tracking checklist in Appendix A1 demonstrates how this CEMP complies with the environmental requirements.

This CEMP provides for the environmental management of construction activities for the WHT and the use of temporary construction ancillary facilities.

1.4.1 Construction works

Construction activities for the Project are outlined in Section 6.4 of the EIS, Section A4 of the RtS, as well as the latest Staging Report. This Project will see the construction of driven and ventilation tunnels and associated activities (e.g. fit-out and finishing work), as outlined in the sections below.

1.4.1.1 Construction of driven and ventilation tunnels

The Project will involve the construction of two mainline tunnels, as well as on and off ramps, cross passages and ventilation tunnels. The majority of this tunnelling work is expected to be carried out in Hawkesbury sandstone using electrically powered machines. Figure 1-2 below provides an overview of the works required under Stage 3A.

Ground support for tunnels excavated using roadheaders will typically consist of cement grouted rock anchors and/or rock bolts and shotcreting. In areas which require control of higher levels of groundwater ingress, the permanent tunnel lining will include a thicker reinforced concrete lining and waterproofing membrane. Ground support will be installed progressively following tunnel excavation.

In addition to the mainline tunnels and on and off ramp tunnels, pedestrian cross passages will be excavated between the mainline tunnels at intervals to facilitate emergency egress. These cross passages will be excavated using roadheaders.

Tunnel excavation will be carried out using a number of roadheaders, supported from the Rozelle WHT cut and cover structure. This support site was established by the M4-M5 Link Rozelle Interchange project (SSI 7584). Infrastructure installed within the cut and cover structure to support tunnel construction for this Project will include an acoustic shed, air intake facilities, power and water supply, and wastewater treatment plants.

The temporary construction wastewater treatment plant will be designed to treat wastewater generated from tunnel construction activities and groundwater inflow.

Rock hammering may be used in some areas for excavation of the mainline tunnels, cross passages and areas of sandstone within the cut and cover structures.

1.4.1.2 Tunnel fit-out and finishing work

On completion of tunnelling, a variety of fit-out and finishing works will be required. Fit-out and finishing works to be completed within the mainline tunnels are listed in Table 1-4 below.

Table 1-4 Tunnel fit-out and finishing works

Construction activity	Description
Service conduits	Trenches will be constructed along the inner wall of the mainline and ramp tunnels under the shoulder of the roadway using a saw mounted on an excavator. Rock will be broken up by an excavator with a hydraulic hammer and loaded out for disposal. Conduits will then be installed within the trench and then backfilled to cover the conduits.
Roadway drainage	Trenches will be constructed in the same way as the service conduits but positioned on the low side of the road pavement where water runoff will be directed during operation. Drainage pipes will be placed within the trench and held in place, and the trench will then be backfilled with concrete.
Pavement works and asphalting	Continuously reinforced concrete pavement will be installed within the mainline tunnels and caverns.
Traffic barriers	Constructed from concrete using a specialised barrier placement machine or alternative methods where the machine is unable to access that location.

1.4.2 Construction ancillary facilities

Temporary construction ancillary facilities will include sites required to support activities such as tunnelling, fit-out and finishing work, installation of drainage, and permanent pavement construction.

Construction support sites for use by the Project are:

- Western Harbour Tunnel cut and cover structure (WHT12)
- White Bay (WHT3).

The locations of these sites are shown in Figure 1-2. Key features of the Project are outlined in Table 1-5 and Table 1-6. The establishment of these ancillary facilities will occur as part of the M4-M5 Link Rozelle Interchange project. Stage 3A will utilise these pre-existing sites to support the works as described in the sections above, with no site establishment activities required for Stage 3A.

The WHT12 site is anticipated to commence use in approximately late 2022 and is anticipated to continue until early 2025. WHT3 is proposed for use from early 2023 until early 2025.

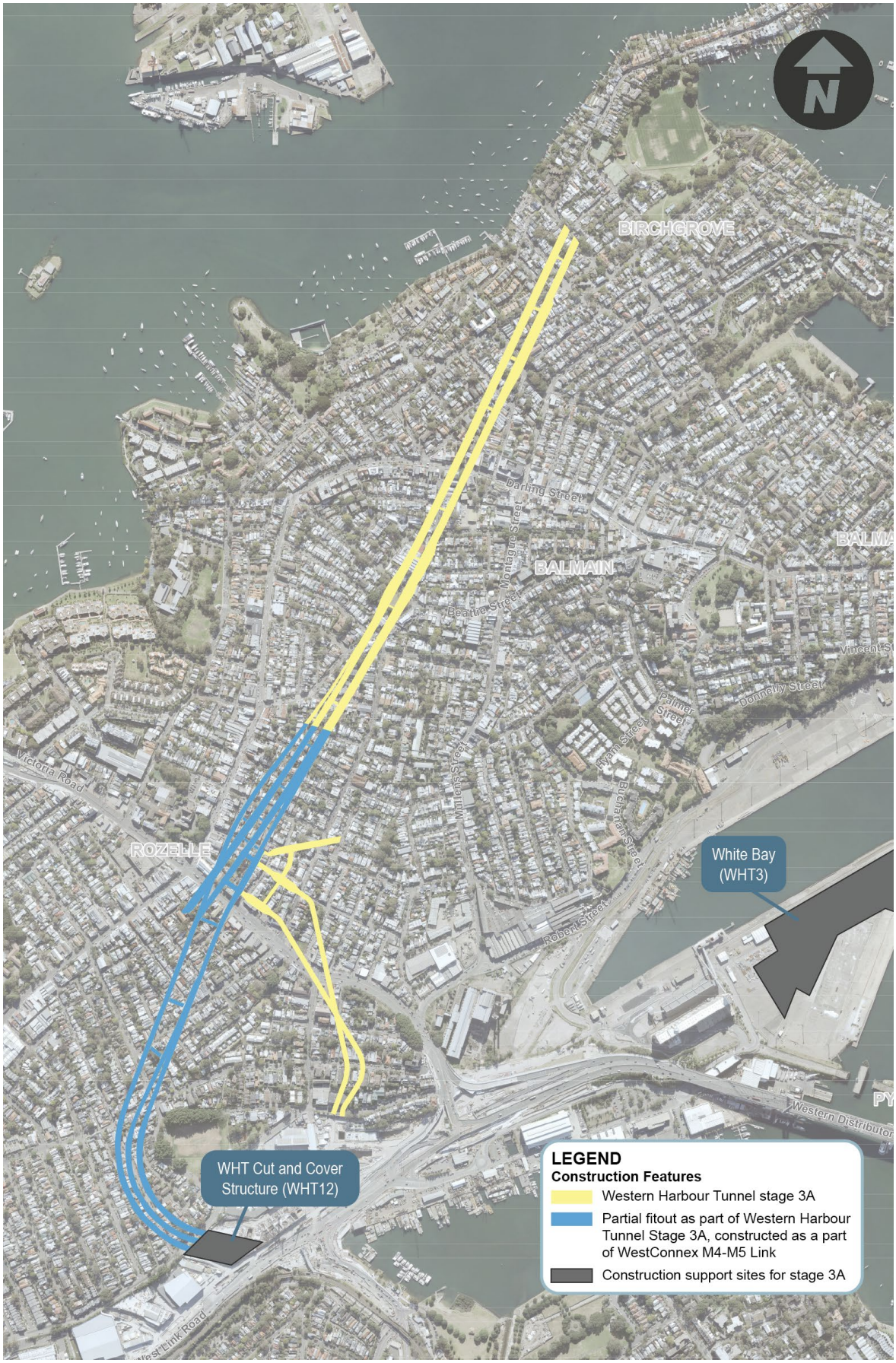

Figure 1-2 Western Harbour Tunnel Stage 3A construction support sites

WHT Cut and Cover Structure – WHT12

Table 1-5 Key features of the WHT12 construction support site

Key features	Summary
Site area	1000m^2
Site description	Located within the Rozelle Rail Yards at Rozelle, which is bound by Lilyfield Road to the north and the City West Link to the south. The site is contained predominantly within the cut and cover structure, bordered by City West Link to the south. The nearest residences are located to the south of the construction support site on Railway Parade, Annandale. The site is situated within the WHT cut and cover structure being built by the M4-M5 Link project. The portal entrance sits level with City West Link and the ancillary site will operate predominantly within the cut and cover structure. Site establishment will occur as part of the M4-M5 Link project.
Key activities	The construction support site will support excavation and constructions works for the mainline and ventilation tunnels. Key activities that will occur on, or be supported by this site will include: ▪ Excavation of driven mainline and ventilation tunnels, including cross passages ▪ Treatment of wastewater from tunnelling activities ▪ Excavation, handling and stockpiling of tunnel spoil.
Hours of operation	Unless stipulated by an Environmental Protection License (EPL), spoil haulage will be carried out during standard construction hours (7am to 6pm Monday to Friday, 8am to 1pm Saturday and no construction works on Sundays or public holidays). Underground works and deliveries to the tunnel will be carried out up to 24 hours per day, seven days per week.
Access arrangements	Access and egress will be via City West Link.

WHT3 – White Bay

Table 1-6 Key features of the White Bay construction support site (WHT3)

Key features	Summary
Site area	112,000 m^2 (Stage 3A will not utilise the full extent of this site)
Site description	Located in White Bay at Rozelle, the site is bound by a mixture of industrial and high density residential properties to the north, Jones Bay / Johnstons Bay to the east, Rozelle Bay / Blackwattle Bay to the south and a mixture of industrial and high density residential properties to the west. The northern part of the site is next to the White Bay Cruise Terminal. The construction support site is currently an operating port facility. For this stage of WHT, the construction support site will be limited to land based activities.
Key activities	The southern area of White Bay will provide ancillary facilities and support to work on the southern side of the harbour. Key activities that will occur on, or be supported by this site will include: ▪ Early works and site establishment, which will include the provision of ancillary support facilities, laydown and parking ▪ Parking and ancillary support such as offices and ablution facilities.
Hours of construction	General site activities will be carried out during standard construction hours (7am to 6pm Monday to Friday, 8am to 1pm Saturday and no construction works on Sundays or public holidays). Some deliveries to and from the site will be required during the evening and night-time to support construction activities from WHT12.
Access arrangements	Access and egress for the southern portion of the site will generally be via Solomons Way and Sommerville Road. Robert Street will not be used to access the construction support site.

1.5 Environmental Management System overview

This CEMP is the overarching management plan for a suite of environmental management documents for the Project. It is applicable to all staff and subcontractors associated with the construction of the Project.

Implementing the CEMP and Sub-plans effectively will enable the Project to meet the requirements of the MCoA, the EPL and REMMs.

This CEMP has been prepared with regard to, or in accordance with:

- *Environmental Management Systems Guidelines* (NSW Government, Edition 3 - August 2013)
- *Environmental Management Plan Guideline for Infrastructure Projects* (Department of Planning, Industry and Environment, 2020)
- The MCoA
- *RMS QA Specification G36, G38 and G40* (as amended for the Project) (G36)
- *AS/NZS ISO 14001*
- Global mandatory requirements applied across all John Holland Projects
- John Holland's EMS, which is the EMS for this Project.

Several environmental management Sub-Plans support this CEMP. These Sub-plans address relevant requirements of all documents listed in Condition A1 of the MCoA, and include:

- Traffic, Transport and Access Management Sub-plan
- Noise and Vibration Management Sub-plan
- Air Quality and Odour Management Sub-plan
- Soil and Surface Water Management Sub-plan
- Groundwater Management Sub-plan.

In recognition of the scope covered by this Plan and subsequent environmental management requirements, the following aspects have been addressed within the CEMP in the form of a Procedure and include:

- Contamination management in the form of an Unexpected Contamination Finds Procedure
- Flora and fauna management in the form of a Flora and Fauna Management Procedure
- Non-Aboriginal and Aboriginal heritage management in the form of a Heritage Management Procedure (HMP). The HMP includes an Unexpected Heritage Finds and Human Remains Procedure to satisfy MCoA E63.

This CEMP provides the system to manage the construction environmental aspects of the Project assessed in the EIS and RtS. It identifies all requirements applicable to activities described in Section 1.4. It also provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled. This includes a list of guidelines and principles the Project will be constructed in accordance with, as detailed within each of the relevant sub-plans and procedures.

Additionally, the strategies defined in this CEMP have been developed with consideration of the Western Harbour Tunnel and Warringah Freeway Upgrade project approval requirements, as well as safeguards and mitigation measures presented in Condition A1 of the MCoA as relevant to the Project. This CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the Project on the environment.

This CEMP and sub-plans will be provided to the Department of Planning and Environment (DPE) for approval prior to commencing construction.

2 Endorsement and approval

2.1 Internal approval of CEMP and sub-plans

The John Holland CPB (JHCPB) Environment Manager (or delegate) will review the CEMP and Sub-plans. The CEMP will then be submitted to TfNSW prior to commencement of work as outlined in G36 Clause 3.1. Once TfNSW and JHCPB are satisfied with the CEMP and Sub-plans, they will be submitted to the Environmental Representative (ER) for endorsement in accordance with Conditions C3 and C4 of the MCoA.

2.2 External endorsement and approval process

The CEMP and Sub-plans, as per Condition C3 of the MCoA, must be endorsed by the ER and then submitted to the Secretary for approval no later than one month before the commencement of construction, or where construction is staged, no later than one month before the commencement of that stage.

The CEMP Sub-plans detailed in Table 2-1 will be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. As required by Condition C9 of the MCoA, the CEMP Sub-plans must be submitted to the Secretary for approval along with, or subsequent to the submission of the CEMP but in any event, no later than one month before construction.

Details of all information requested by an agency during consultation will be provided to the Secretary as part of any submission of the relevant CEMP Sub-plan, including copies of all correspondence from those agencies as required by Condition A5 of the MCoA. A summary of the consultation undertaken for each relevant sub-plan and monitoring program is contained within those documents.

Table 2-1 Relevant government agencies to be consulted for each CEMP Sub-plan

Required CEMP Sub-plan	Relevant Government Agencies
Traffic, transport and access	Relevant council(s)
Noise and vibration	NSW Health, relevant council(s)
Air quality and odour	NSW Health, and relevant council(s)
Soil and surface water	DPIE Water, EESG, EPA, Sydney Water (if Sydney Water's assets are affected) and relevant council(s)
Groundwater	DPIE Water, EESG, EPA, Sydney Water (where it is proposed to discharge groundwater into Sydney Water's assets) and relevant council(s)

The construction monitoring programs in Table 2-2 must be prepared in consultation with the relevant government agencies identified for each monitoring program. As per Condition C18 of the MCoA, the construction monitoring programs must be endorsed by the ER and then submitted to the Secretary for approval no later than one month before the commencement of construction.

Table 2-2 Relevant government agencies to be consulted for each construction monitoring Program

Required CEMP Sub-plan	Relevant Government Agencies
Noise and Vibration Monitoring Program	EPA
Air Quality (including Odour) Monitoring Program	EPA

Required CEMP Sub-plan	Relevant Government Agencies
Surface Water Monitoring Program	DPIE Water, (Sydney Water if any Sydney Water assets are impacted), EPA
Groundwater Monitoring Program	DPIE Water, EPA

In accordance with MCoA C10 and C19, construction will not commence until the CEMP and relevant sub-plans and monitoring programs have been approved the Planning Secretary.

The CEMP will be made available to all personnel and subcontractors via the Project document control management system. Copies of the CEMP and Sub-plans will also be placed on the Project's website.

Registered copies will be distributed to:

- TfNSW
- JHCPB Project Director
- ER
- JHCPB Construction Manager
- JHCPB Environment Manager
- JHCPB Community Relations Manager.

The document is uncontrolled when printed.

3 Environmental Management Plan

3.1 Preparation and availability of the CEMP

The CEMP for the Project has been prepared in accordance with the documents outlined in Section 1.5.

The JHCPB environmental policy is included in Appendix A3 and will be displayed on the Project website and at the site office and communicated to staff and other interested parties via inductions and ongoing awareness programs.

3.2 Planning

3.2.1 Environmental Risk Assessment Workshop

An environmental risk assessment workshop was held on 30 May 2022 for the Project and reviewed the following activities:

- Operation of ancillary facilities
- General construction activities
- Tunnel excavation
- Spoil, transport, deliveries, general plant operation on public roads.

The environmental risk assessment workshop involved representatives from JHCPB environment and construction teams, TfNSW, the ER, and the Acoustic Advisor (AA).

Each activity was assessed to identify the relevant steps in the activity and the associated environmental hazards, initial risk levels, mitigation measures and to avoid, manage and/or minimise the risks and residual risks. Each of these items were documented in an environmental risk register (Appendix A2). Where residual risk is assessed as high, or if required under the Contract, an Activity Method Statement will be developed for that activity.

Where relevant, the requirements from the RMS Specifications G36 and G38, MCoA and REMMs will be incorporated into the environmental risk assessment, particularly in developing the agreed activity-specific site controls.

Appendix A2 contains a list of environmental aspects and impacts including those identified in the risk assessment workshop.

Ongoing analysis of the key environmental risks arising during construction will be undertaken as part of the management review process detailed in Section 3.12. Any required updates to the CEMP as a result of the management review process will be undertaken in accordance with Section 3.13.

3.2.2 Regulatory requirements and compliance

Legislation

A register of legal and other requirements for the Project is contained in Appendix A1. This register is maintained as a checklist. This register will be reviewed at regular intervals, such as during management reviews, and updated with any applicable changes. Any changes made to the legal requirements register will be communicated to the wider project team, including subcontractors where necessary through toolbox talks, specific training and other methods detailed in Section 3.5 of this CEMP.

Environmental approvals, permits and licences

A number of environmental approvals, permits and licences have or will be obtained for the Project. Appendix A1 contains a register of all relevant environmental approvals, permits and licences. The register will be maintained by the JHCPB Environment Manager (or delegate) and will be reviewed prior to the commencement of construction (or commencement of a stage of construction), at regular intervals during construction, and at least annually as part of the management review.

The EIS recognised that the following environmental approvals and licences are required for the Project:

- An environment protection licence for road construction and road tunnel emissions under Chapter 3 of the *Protection of the Environment Operations Act 1997 (NSW)*. In accordance with section 5.24 of the *Environmental Planning and Assessment Act 1979 (NSW)*, such a licence cannot be refused for an approved project and is to be substantially consistent with any approval under Division 5.2.

In accordance with Condition A2 of the MCoA, all necessary licences, permits and approvals required for the development of the Project will be obtained and maintained as required throughout the life of the Project and provided on the Project website. No condition of the MCoA removes the obligation for the Project to obtain, renew or comply with such necessary licences, permits or approvals except as provided under Section 5.23 of the EP&A Act.

Table 3-1 outlines any licences, permits or approvals required for construction.

Table 3-1 Project environmental approvals

Approval / permit / licence	Regulatory authority	Relevant Project component	Responsibility / timeframe	Status/Required
Instrument of Approval under Division 5.2 of the *Environmental Planning and Assessment Act, 1979*	DPE	Whole Project	TfNSW / Prior to commencement of works	Approved 21 January 2021
Environment Protection Licence (EPL) under the *Protection of the Environment Operations Act 1997*	NSW Environment Protection Authority (EPA)	Road construction (see Schedule 1, Clause 35)	JHCPB / Prior to scheduled activities or works that enable a scheduled activity	Prior to commencing Scheduled Activities
Aquifer interference approval may be required in accordance with section 91 of the Water Management Act 2000	NRAR	Works that may interfere with an aquifer	JHCPB / Prior to any works that may interfere with an aquifer	Aquifer interference approvals are not currently enabled under the *Water Management Act 2000*. Ongoing consultation with NRAR will be undertaken to identify updated Approvals requirements.

In addition to the environmental approvals, permits and licences listed in Table 3-1 above, the Project will likely require other approvals, permits and licences which are not environmental in nature. For example, Road Occupancy Licenses (ROLs) under Section 138 of the *Roads Act 1993* will need to be obtained via Customer Journey Planning (TfNSW) for any work on existing

public/classified roads. The Project will be required to obtain an ROL prior to any work on affected roads (with the exception of local roads).

3.2.3 Environmental objectives and targets

As a means of assessing environmental performance during construction of the Project, environmental objectives and targets have been established. These objectives and targets have been developed with consideration of key performance outcomes for each key issue, as specified in the EIS (Chapter 28 (Synthesis of the environmental impact statement)). The objectives and targets are consistent with the Project's environmental policy and will assist in monitoring whether the commitments of the policy are being met.

The performance of the Project will be monitored against the objectives and targets and performance monitoring will be documented in the Project construction compliance reports and at least on an annual basis as part of the management review.

Environmental objectives and targets for the Project are based on the project performance outcomes outlined in Section 28.6 of the EIS and are incorporated into relevant environmental management Sub-plans. A summary of performance outcomes is provided in Table 3-2 below.

Table 3-2 Environmental objectives and targets

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
Project Performance Outcomes – Construction Phase (developed by the Project)					
Implement and continually improve an environmental management system in accordance with AS/NZS ISO 14001	Address non-conformances and corrective actions within specific timeframes	Audits, management reviews	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction Quarterly management reviews	Implementation of the CEMP	JHCPB Environment Manager
Regularly identify and implement opportunities for improved environmental performance	100% of scheduled inspections of environmental controls occur	Environmental inspections	Monthly inspections	Environmental controls inspections to be identified, scheduled and conducted	Environmental Representative JHCPB Environment Manager TfNSW Environment Manager
	All non-conformances closed out within timeframe agreed upon with auditor	External compliance audits	6 Monthly independent external audits (the first within 26 weeks of commencement of works)	Implementation of the CEMP	JHCPB Environment Manager

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
Educate the Project team, including Sub-contractors, on key environmental issues and management controls to promote a culture of shared responsibility	Compulsory on site induction	Induction	Prior to commencement of works on site	Conduct site inductions	JHCPB Environment Manager
	One toolbox talk / pre-start meeting with an environmental focus	Toolbox talks – environmental focus	Monthly toolbox talks as required	Environmental personnel to present at pre-start or toolbox talks	JHCPB Environment Manager JHCPB Project Managers
Prevent pollution, reduce waste and commit to recovery and recycling	Full compliance with statutory Approvals	Audits, environmental monitoring	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction Monthly inspections	Implement the CEMP	JHCPB Environment Manager JHCPB Project Managers
	Zero unauthorised discharges	Audits, environmental inspections	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction	Implement the SSWMP	JHCPB Project Managers

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
			Monthly inspections		
	All construction personnel inducted in soil and water management	Induction	Prior to commencement of works on site	Implement the SSWMP and site inductions	JHCPB Project Managers JHCPB Environment Manager
Compliance with all legal requirements	No regulatory infringements or prosecutions	No formal regulatory warning. Audits, compliance reporting, management review	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction Quarterly management reviews	Implement the CEMP	JHCPB Project Managers JHCPB Environment Manager TfNSW Project Managers TfNSW Environment Manager
	Zero enforcement notices and penalties	Audits, compliance reports, management review	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction	Implement the CEMP and sub-plans	JHCPB Project Managers JHCPB Environment Manager

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
			Quarterly management reviews		
Project Performance Outcomes – Construction Phase (derived from Project EIS)					
Consultation The Project is developed with meaningful and effective engagement during Project design and delivery	Engaged and informed community and key stakeholders	Refer to Community Communication Strategy	Ongoing	Undertake community engagement and consultation in accordance with Community Communication Strategy	JHCPB Communication Team TfNSW Communication Team
Transport and traffic Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts The safety of transport system customers is maintained Impacts on network capacity and the level of service are effectively managed Works are compatible with existing infrastructure and future transport corridors	Minimise impacts to local streets from loss of parking, road closures and heavy vehicles Minimise impacts to road network efficiency during construction Maintain pedestrian and cyclist safety Access to properties would be maintained	Audits, compliance reports, management reviews	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction Quarterly management reviews	Implement the TTAMP and Construction Parking and Access Strategy (CPAS)	JHCPB Project Managers JHCPB Environment Manager TfNSW Project Managers
Air quality The Project is designed, constructed and operated in a manner that minimises air quality impacts (including nuisance dust and odour) to minimise risks to human health	Effective management of dust, odour and other emissions during construction	Audits, environmental inspections	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter	Implement the AQMP	JHCPB Project Managers JHCPB Environment Manager

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
and the environment to the greatest extent			Internal audit to be undertaken within 6 months of commencing construction Monthly inspections		
Health and safety The Project avoids or minimises any adverse health impacts arising from the project The Project avoids, to the greatest extent possible, risk to public safety	Establish and operate ancillary facilities and construction sites to protect road user and public safety Hazardous materials within project areas will be managed to protect human health Minimise incidents and crashes and risks to public safety during construction.	Environmental inspections	Monthly inspections	Implement the CEMP, NVMP, SSWMP and TTAMP	JHCPB Project Managers JHCPB Environment Manager TfNSW Project Managers
Noise and vibration – Amenity Construction noise and vibration (including airborne noise and ground-borne noise) are effectively managed to minimise adverse impacts on acoustic amenity	Comply with the relevant criteria from the NSW Industrial Noise Policy Minimise increases in road traffic noise Effective management of construction noise and vibration in accordance with relevant guidelines	Environmental monitoring, environmental inspections	Monthly inspections	Implement the NVMP	JHCPB Project Managers JHCPB Environment Manager
Noise and vibration – Structural Construction noise and vibration (including airborne noise and ground-borne noise) are effectively managed to minimise adverse impacts on the structural integrity of buildings and	No damage to features of heritage conservation significance from vibration	Environmental inspections	Monthly inspections	Implement the NVMP and Heritage Management Procedure	JHCPB Project Managers JHCPB Environment Manager

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
items including Aboriginal places and environmental heritage					
Biodiversity The Project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project construction and operation	Minimise impact to aquatic biodiversity values Minimise removal of high retention value trees Compensatory tree planting	Audits, management review	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction Quarterly management reviews	Implement the Flora and Fauna Management Procedure and SSWMP	JHCPB Project Managers JHCPB Environment Manager
Place making and urban design The Project design complements the visual amenity, character and quality of the surrounding environment. The Project contributes to the accessibility and connectivity of communities	Establish and operate ancillary facilities to minimise adverse impacts on the visual amenity of the local community (e.g. lighting)	Audits, management review	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction Quarterly management reviews	Implement the CEMP	JHCPB Project Managers JHCPB Environment Manager
Socio-economics, land use and property The Project minimises adverse social and economic impacts and	Minimise property acquisition Manage the property acquisition process to	Refer to Community Communication Strategy	Ongoing	Implement the Community Communication Strategy	JHCPB Communication Team

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
capitalises on opportunities potentially available to affected communities The Project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure	minimise impacts to community Minimise impacts to businesses during construction Make provision for social infrastructure				TfNSW Communication Team JHCPB Environment Manager
Water – Hydrology and Water Quality Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved) Sustainable use of water resources The Project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of	Design and construct tunnels to minimise groundwater inflow Establish water quality discharge criteria with consideration of NSW Water Quality Objectives Effectively treat water to meet water quality discharge criteria Maximise reuse of treated water during construction	Environmental monitoring, environmental inspections	Monthly inspections	Implement the SSWMP and GWMP	JHCPB Project Managers JHCPB Environment Manager

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if applicable)					
Flooding The Project minimises adverse impacts on existing flooding characteristics Construction and operation of the Project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure	Meet flooding criteria determined during project detailed design	Environmental monitoring, environmental inspections	Monthly inspections	Implement the CEMP	JHCPB Project Managers JHCPB Environment Manager
Soils The environmental values of land, including soils, subsoils and landforms, are protected Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils (ASS) and site contamination	Erosion and sediment controls will be implemented in accordance with Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom 2004) and Volume 2D (DECCW 2008), commonly referred to as the 'Blue Book' Manage ASS in accordance with good practice measures Manage contamination to protect environmental values and human health	Environmental inspections	Monthly inspections	Implement the SSWMP and Unexpected Contamination Finds Procedure	JHCPB Project Managers JHCPB Environment Manager
Heritage	Establish archival recording of items of heritage	Environmental inspections, audits	Monthly inspections	Implement the Heritage	JHCPB Project Managers

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
The design, construction and operation of the Project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places The design, construction and operation of the Project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places	significance that will be demolished Minimise impacts on heritage items during construction Minimise damage to features of heritage conservation significance from vibration		External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction	Management Procedure	JHCPB Environment Manager
Sustainability The Project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources Conservation of natural resources is maximised	Achieve an Infrastructure Sustainability Council of Australia rating of 'Excellent'	ISCA rating, compliance reports	Follow Independent Audit Post Approval Requirements	Implement the Sustainability Strategy and SMP	JHCPB Environment Manager
Waste All wastes generated during the construction and operation of the project are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully and in a manner that protects environmental values	Recycle or reuse uncontaminated spoil either on site or off-site Manage off-site waste re-use in accordance with relevant NSW Environment Protection Authority resource recovery exemptions and requirements	Audits, management review	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of	Implement the CEMP	JHCPB Project Managers JHCPB Environment Manager

Objective	Target	Measurement tool	Timeframe	Actions to be undertaken	Accountability
	Dispose of waste at appropriately licensed facilities		commencing construction Quarterly management reviews		
Climate change risk The project is designed, constructed and operated to be resilient to the future impacts of climate change	Incorporate climate change and sea level rise adaptation measures into the detailed design and construction planning for the project	Audits	External audit to be undertaken within 12 weeks of commencement of works and every 26 weeks thereafter Internal audit to be undertaken within 6 months of commencing construction	Implement the SMP	JHCPB Environment Manager

3.2.4 Activity Method Statements and Sensitive Area Plans

Activity Method Statements (AMS) are prepared to manage and control all high-risk activities and others that have the potential to negatively impact on the environment. An AMS will be prepared prior to the commencement of relevant construction activities and will incorporate relevant mitigation measures and controls, including those from relevant management Sub-plans.

An AMS will be prepared progressively in the lead up to and throughout construction in consultation with relevant personnel from the Project.

The AMS will include at least the following elements:

- Description of the work activity, including any plant and equipment to be used
- Outline of the sequence of tasks for the activity, including interfaces with other construction activities
- Identification of any environmental and / or socially sensitive areas, sites or places
- Identification of potential environmental risks / impacts due to the work activity
- Mitigation measures to reduce the identified environmental risk, including assigned responsibilities to site management personnel
- Process for assessing the performance of the implemented mitigation measures.

All construction personnel and subcontractors undertaking a task governed by an AMS must participate in training for task specific components of the AMS, documented in a Task Risk Assessment (TRA). Training on the TRA includes an acknowledgement that they have read and understood their obligations by signing an attendance record prior to commencing work. The TRA is completed at the commencement of each task.

Regular monitoring, inspections and auditing of compliance with the AMS will be undertaken by Project management and environmental personnel to ensure that all controls are being followed and that any non-conformances are recorded, and corrective actions implemented. The Project traverses environmentally and socially sensitive areas. To assist pre-construction planning and on site construction management a Sensitive Area Plan (SAP) will be prepared prior to the commencement of construction. The SAP will be prepared in stages as the works progress in each precinct.

SAPs will be reviewed if there is a significant change in work activities, updated as necessary and re-issued.

A copy of the SAPs will be provided in Appendix A5.

3.3 Resources, responsibilities and authority

The key environmental management roles and responsibilities for the construction phase of the Project are described below. The structure of these roles is shown in Figure 3-1.

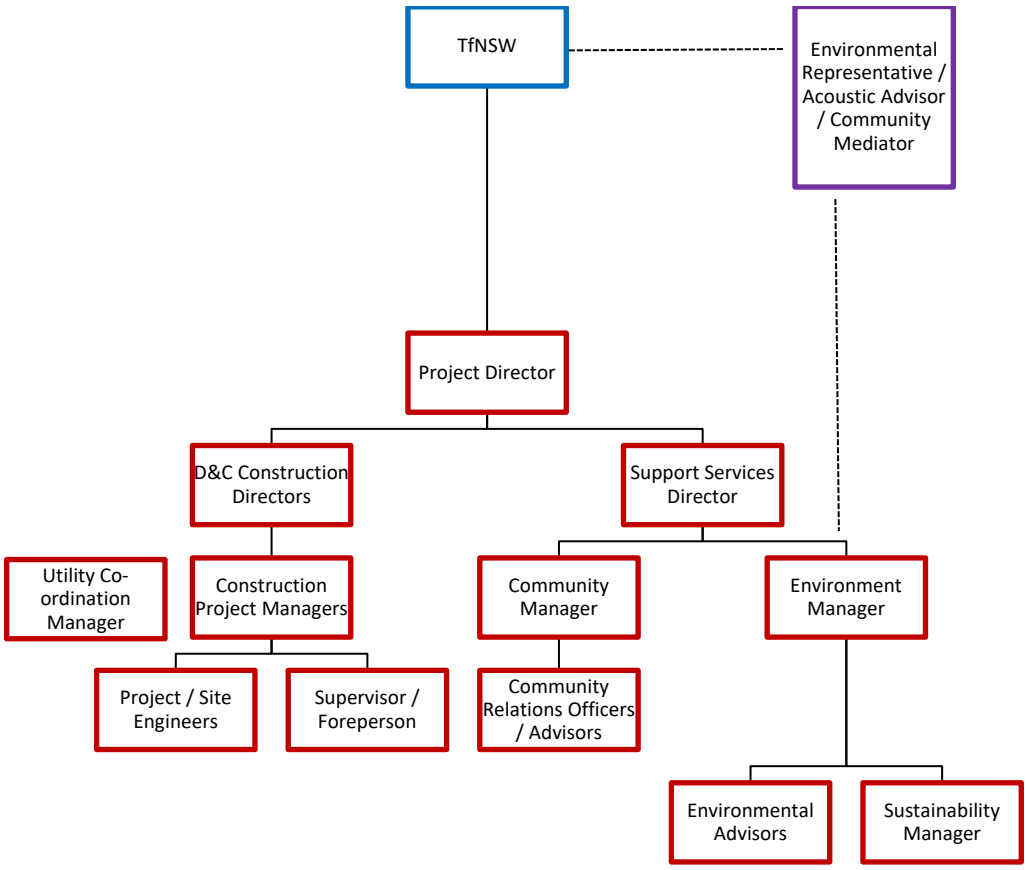

Figure 3-1 Management structure

Blue refers to project proponent
Purple refers to independent bodies
Red refers to Contractor (JHCPB)
Dashed line refers to independent roles

3.3.1 Roles and responsibilities

A number of Project personnel will be required to liaise with the ER throughout the duration of the Project. In accordance with Condition C2(i) of the MCoA,

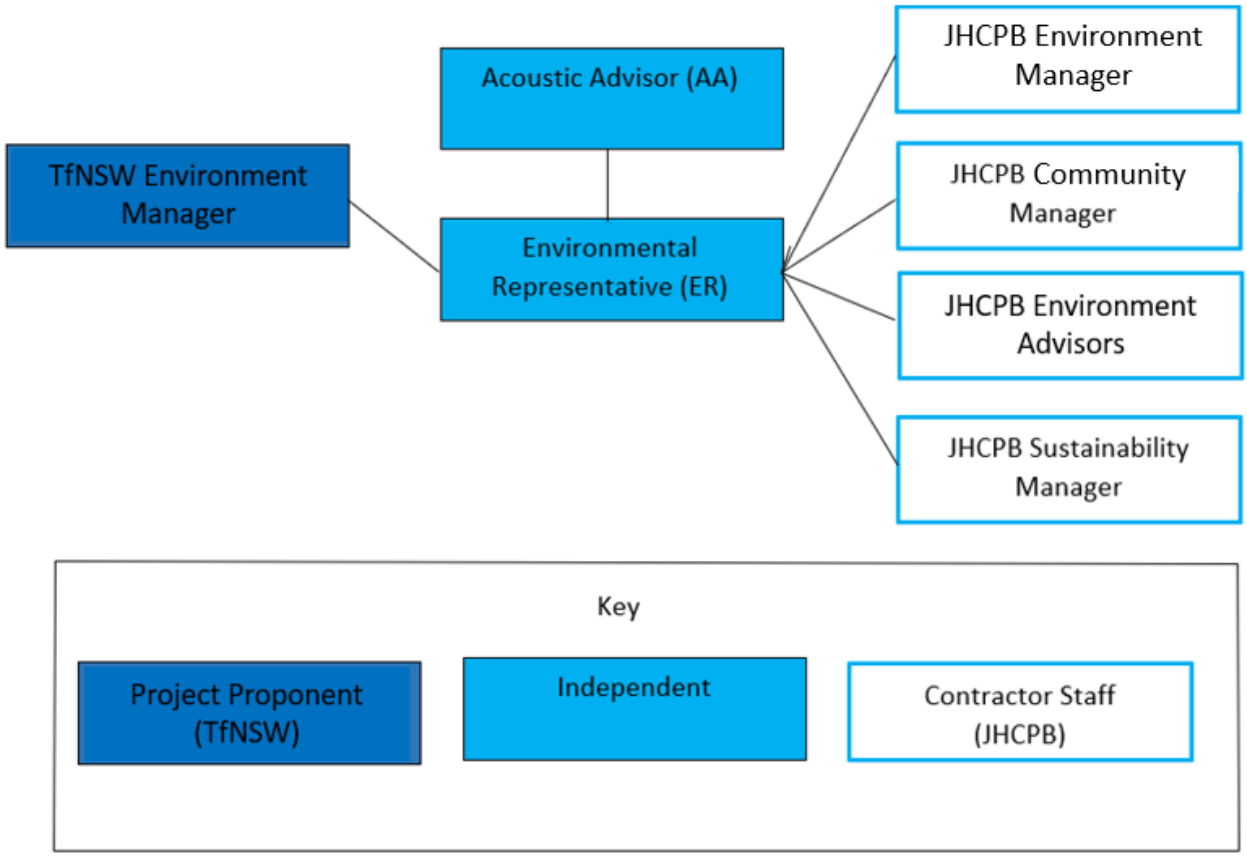

Figure 3-2 summarises the relationship between relevant Project personnel and the ER.

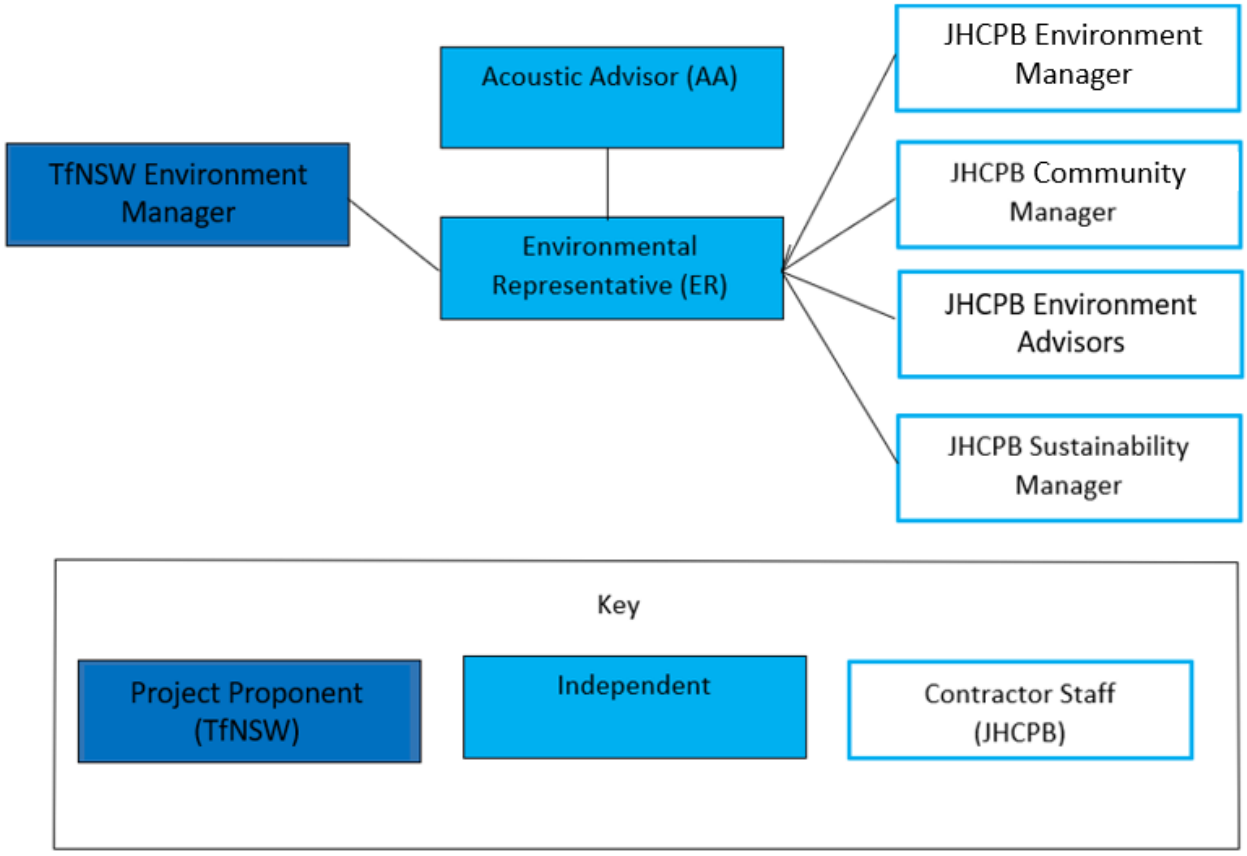

Figure 3-2 Relationship between the ER and relevant key Project personnel

Table 3-3 below provides a summary of all relevant roles and responsibilities for the construction of the Project. This includes roles outlined in Figure 3-2.

Table 3-3 Summary of roles and responsibilities for construction of the Project

Title	MCoA	Roles, responsibilities and authorities relevant to this plan
Key roles		
JHCPB Project Director	N/A	▪ Be an emergency contact and available to be contacted by EPA and TfNSW Representative on a 24 hour basis ▪ Endorse and support the Project Environmental Policy attached at Appendix A3. Liaise with TfNSW, the Environmental Representative and other government authorities as required ▪ Provide adequate resources (personnel, financial and technological) for effective development, implementation and maintenance of this CEMP.
JHCPB Support Services Director	N/A	▪ Provide environmental oversight, direction and leadership regarding the environmental management of the project ▪ Provide high level strategic direction throughout the delivery of Project including on community and stakeholder relations.

Title	MCoA	Roles, responsibilities and authorities relevant to this plan
JHCPB Environment Manager	N/A	▪ Be an emergency contact and available to be contacted by EPA and TfNSW Representative on a 24 hour basis, this person is the nominated Environmental Site Representative (ESR) ▪ Ensure development, implementation, monitoring, annual management reviews and updating of the CEMP and sub-plans in accordance with ISO14001 ▪ Ensure environmental risks of the Project are identified and appropriate mitigation measures are implemented ▪ Notify TfNSW and relevant authorities in the event of an environmental incident ▪ Provide the Environmental Representative with all documentation requested including the complaints register (on a daily basis) and a copy of any assessment carried out by JHCPB of whether proposed work is consistent with the Approval ▪ Cooperate with the Acoustics Advisor by providing access to noise and vibration monitoring activities, allowing for reviews and considering any recommendations of the Acoustic Advisor.
JHCPB Environmental Advisor(s)	N/A	▪ Manage the day-to-day environmental elements of construction ▪ Undertake site inspections, carry out monitoring activities and complete site checklists to assist in identifying environmental risks ▪ Advise the JHCPB Environment Manager and JHCPB Construction Project Manager immediately if an unacceptable impact on the environment is likely to occur or other major issues from the Project ▪ Assist all site staff with issues concerning Project environmental matters ▪ Assist in developing training programs regarding environmental requirements including delivery of the environmental component of toolbox talks, as required.
JHCPB Community Manager (Public Liaison Manager)	N/A	▪ Provide high level strategic direction throughout the delivery of Project ▪ Responsible for implementation of the Communication Strategy and ensuring the Project meets all community engagement obligations ▪ Manage the Public Liaison Officers ▪ Note: This role and responsibility is described in more detail in the Communication Strategy.
JHCPB Public Liaison Officer(s) (Community Officer(s))	MCoA B6, B2	▪ Carry out day-to-day community engagement activities ▪ Report any environmental issues raised by stakeholders or members of the community to the JHCPB Environment Manager ▪ Communicate general Project progress, performance and issues to stakeholders, including the community ▪ Maintain the 24-hour complaints hotline and the Project complaints register ▪ Assist the public with questions and complaints they may have at any time during construction and be available at all times during the operation of ancillary facilities or when utility work is occurring.

Title	MCoA	Roles, responsibilities and authorities relevant to this plan
		Note: This role and responsibility is detailed in the Community Communication Strategy.
JHCPB Utility Coordination Manager	E82, E154	▪ Manage and coordinate all utility works associated with the delivery of the CSSI and ensure appropriate respite is provided to the community ▪ Provide advice to the Public Liaison Officers, regarding upcoming utility works, including the scope of the works and responsibility for the works ▪ Investigate complaints received from Public Liaison Officers relating to utility works and provide a timely response to the Community Complaints Mediator or Public Liaison Officer.
JHCPB Project Managers	N/A	▪ Plan construction work to minimise impacts to the environment and community ▪ Ensure construction personnel manage construction work in accordance with environmental requirements as detailed in this CEMP ▪ Support the JHCPB Environment Manager in achieving the Project environmental objectives and ensuring environmental management procedures and protection measures are implemented ▪ Ensure that instructions are issued, and adequate information provided to employees that relate to environmental risks on site.
JHCPB Project / Site Engineers	N/A	▪ Plan works in accordance with the requirements of the CEMP and supporting documentation, including the implementation of all environmental controls and identification of resource needs ▪ Act in the event of an emergency, including report any environmental incidents, and allocate the required resources to minimise environmental impacts.
JHCPB construction Personnel (including subcontractors)	N/A	▪ Attend Project inductions and relevant environmental awareness training, and understand and comply with environmental responsibilities ▪ Be aware of surrounding sensitive environmental and social constraints and act in a manner that minimises impacts to those sensitive areas ▪ Report any environmental incidents, near misses and hazards immediately.
Community Complaints Mediator (CCM)	MCoA B11	▪ Fulfil the requirements of Conditions B12, B13 and B14 and other MCoA that require the CCM's involvement. Note: This role and responsibility is described in more detail in the Community Communication Strategy.
Acoustics Advisor (AA)	MCoA A29, A30, A31, A32, A33, A34, C13, E68, E69, E75	▪ Receive and respond to communication from the Secretary and inform the Secretary in relation to the noise and vibration performance of the CSSI ▪ Consider and inform the Planning Secretary on matters specified in the MCoA relating to noise and vibration ▪ Recommend improvements to avoid or minimise noise and vibration impacts ▪ Review all proposed night-time works to determine if sleep disturbance would occur and recommend measures to avoid sleep disturbance or appropriate additional alternative mitigation measures

Title	MCoA	Roles, responsibilities and authorities relevant to this plan
		▪ Review all noise and vibration documents required under the MCoA and, if satisfactory, endorse them before submission to the Secretary or implementation ▪ Regularly monitor the implementation of all noise and vibration documents to ensure implementation is in accordance the document and the MCoA ▪ Notify the Secretary within 24 hours of noise and vibration incidents, in accordance with Conditions A43 and A45 of the MCoA ▪ Assist the Environmental Representative in relation to noise and vibration matters and performance including helping assist with community conflicts as outlined in the CCS, and consider/endorse relevant minor amendments made to the CEMP, relevant Sub-plans, and noise and vibration monitoring programs ▪ As may be requested by the Planning Secretary or CCM, help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits ▪ Prepare a Monthly Noise and Vibration Report detailing the AA's actions and decisions on relevant matters and submit to the Secretary and other relevant regulatory agencies within seven days following the end of each month. ▪ Review the noise impact of minor construction ancillary facilities. Note: The Acoustics Advisor must be suitably qualified and experienced, independent of the design and construction personnel, engaged for the duration of works and for no less than six months following completion of construction of the CSSI.
Environmental Representative(s) (ER)	MCoA A10, A17, A19, A24, A25, A26, A27, A28, A34, C2, C3, C10, C18, E68, E69	▪ Receive and respond to communication from the Secretary in relation to the environmental performance of the CSSI and inform the Secretary regarding matters specified in the MCoA ▪ Consider and recommend to the Project any improvements that may be made to work practices to avoid or minimise adverse impacts to the environment or community ▪ Conduct a written review of the CEMP, sub-plans, construction monitoring programs and any other documents that are identified by the Secretary, to ensure they are consistent with the MCoA prior to their submission to the Secretary or implementation ▪ Regularly monitor the implementation of the CEMP, sub-plans and construction monitoring programs to ensure they are being carried out in accordance with the document and the MCoA ▪ Help plan, attend or undertake audits of the development (not independent environmental audits) and assist in the resolution of community complaints ▪ Assess the impacts of minor ancillary facilities ▪ Consider any minor amendments to be made to the CEMP, CEMP sub-plans and monitoring programs and, approve the amendment if satisfied

Title	MCoA	Roles, responsibilities and authorities relevant to this plan
		▪ Prepare and submit to the Secretary and other relevant regulatory agencies, an Environmental Representative Monthly Report within seven calendar days following the end of each month. ▪ Assess the impacts of activities as required by the Low Impact Works definition in the Planning Approval. Note: The ER must be a suitably qualified and experienced person who was not involved in the preparation of the EIS or RtS and is independent from the design and construction personnel for the CSSI. The ER must be engaged for the duration of works until the completion of construction.
TfNSW Environment Manager	N/A	▪ Review any environmental management plans and related documents prepared for the Project, including this CEMP and Sub-plans ▪ Review and consider Project refinements that are consistent with the Project environmental assessment in accordance with the TfNSW Division 5.2 Environmental Assessment Procedure ▪ Monitor the environmental performance of the Project in relation to TfNSW requirements and document submission requirements as required by the MCoA.
TfNSW Representative	N/A	▪ Evaluate and advise on compliance with TfNSW environmental requirements ▪ Review environmental management plans for the Project or related activities that are not required to be approved by the Secretary.
Support roles		
Ecologist	MCoA C6 (e)	▪ Provide guidance during pre-clearing/demolition surveys.
Heritage Specialist	MCoA E57, E80, CNV6	▪ Undertake archival recording and help prepare a heritage archival recording and salvage report ▪ Advise on methods and locations for installing equipment for monitoring at heritage-listed structures ▪ Carry out a condition assessment of the southern and northern penstocks and identify conservation works required.
Contamination Specialist	N/A	▪ Initially assess and provide management advice upon the discovery of any previously unidentified contaminated material (i.e. unexpected finds).
Soil Conservation Specialist	REMM WQ1	▪ Provide advice regarding erosion and sediment control, including the implementation of ESCPs.
Independent Property Impact Assessment Panel	MCoA E107, E111, E112 REMM SG3	▪ Review Condition Survey Reports where there is a dispute ▪ Resolve property damage disputes ▪ Resolve ongoing settlement and vibration monitoring requirements. *Note: Comprises geotechnical and engineering experts independent of the design and construction team and will be engaged before the potential for property impacts.*

3.4 Selection and management of subcontractors

The JHCPB Environment Manager, or delegate, will participate in the tender assessment and selection process for JHCPB subcontractors, as necessary, based on the associated environmental risks. All subcontractors will be required to complete a subcontractor questionnaire or similar.

Environmental requirements and responsibilities will be specified to subcontractors in the contract documentation. As part of the selection process, consideration will also be given to their past environmental performance, where known.

All subcontractors are required to work in accordance with the CEMP, once approved. This includes participation in:

- Project and / or site inductions, where the requirements and obligations of the CEMP are communicated at toolbox talks. A record of all subcontractors inducted will be maintained as part of the Project induction and training register
- Carrying out observations, inspections, audits and incident investigations (as required)
- Planning, implementing and monitoring environmental protection measures and keeping environmental records
- Development and / or review of AMS (as required).

All environmental documentation submitted by subcontractors will be subject to review and approval (if required) by JHCPB staff to ensure compliance with TfNSW contract requirements and the MCoA, before works may begin.

If subcontractors are using or are permitted to use their own EMS, the subcontractor must demonstrate that their EMS is certified to ISO14001 and implemented to meet JHCPB's minimum environmental requirements. A standard form will be developed that will be used to assess:

- The subcontractor's general work practices
- The effectiveness of the subcontractor's environmental protection measures
- The EMS' compliance with the requirements of this CEMP
- The maintenance of environmental measures.

3.5 Competence, training and awareness

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

3.5.1 Environmental induction

All personnel (including subcontractors) are required to attend a compulsory site induction that includes an environmental component prior to commencement on site. This is to ensure all personnel involved in the Project are aware of the requirements of the CEMP.

Short-term visitors to site undertaking inspections or entering the site (such as regulators) will be required to undertake a visitor's induction and be accompanied by inducted personnel at all times.

Temporary visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times.

The JHCPB Environment Manager (or delegate) will prepare the environmental component of the site inductions. The environmental component of the induction must cover all elements of the CEMP and will include, as relevant:

- Relevant details of the CEMP including purpose and objectives
- Requirements of due diligence and duty of care
- Conditions of environmental approvals, licences and permits
- Key environmental issues and environmental constraints
- Potential environmental emergencies scenarios on site and the appropriate emergency response procedures
- Reporting and notification requirements for pollution and other environmental incidents
- High risk activities and associated environmental safeguards, as well as the existence of an AMS for these activities
- Specific environmental management and mitigation requirements and responsibilities, including for working in or near environmentally sensitive areas.

A record of all environment inductions will be maintained and kept on site in the form of an Induction Register. The JHCPB Environment Manager may authorise amendments to the induction at any time. Possible reasons for changes to the induction may be Project modifications, legislative changes or amendments to this CEMP, Sub-plans or monitoring programs.

3.5.2 Toolbox talks, training and awareness

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

Toolbox talks will include details of the AMS for relevant personnel. Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works. Relevant environmental issues could include (and are not limited to):

- Erosion and sedimentation control
- Dewatering
- Hours of work and associated out of hours work approval processes
- Emergency and spill response
- Light spillage
- Heritage
- Traffic and transport, including parking and haul routes
- Threatened species, endangered ecological communities, clearing controls and vegetation protection
- Weed management
- Dust control
- Noise and vibration (including groundborne noise)
- Housekeeping and waste
- Concrete washout
- General procedures for site preparation prior to significant rain events
- Interactions with members of the public and / or stakeholders.

Attendees of toolbox talks are required to sign an attendance form and the records will be maintained by the relevant construction site through a Training Register kept by JHCPB for the Project.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Topics covered may include those listed above, or others deemed necessary in the lead up to or during construction.

Another way to inform construction personnel will be through the development and distribution of awareness notes. These will typically take the form of a poster, booklet, or similar and will be distributed to engineers, general superintendents, leading hands, supervisor and others with a responsibility for managing specific work locations or activities. These awareness notes will be provided to the broader workforce at daily pre-start meetings (Section 3.5.3), and / or will be on display in worker crib sheds / break facilities.

3.5.3 Daily pre-start meetings

Pre-start meetings are a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

The foreperson (or suitable delegate) will conduct a daily pre-start meeting with the site workforce before the commencement of work each day (or shift) or where changes occur during a shift.

The foreperson (or suitable delegate) will also ensure that any potential environmental risks or updates are communicated to the foreperson on the next shift prior to shift changeover.

The environmental component of pre-starts will be determined by relevant supervisor and JHCPB Environment Team and will include any environmental issues that could potentially be impacted by, or impact on, the day's activities. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

Pre-start topics, dates delivered, and a register of attendees will be recorded and kept by JHCPB for the Project.

3.6 Working hours

In accordance with Condition E66 of the MCoA, standard construction working hours on this Project will be (unless otherwise stipulated by an EPL):

- 7:00am to 6:00pm Mondays to Fridays, inclusive
- 8:00am to 6:00pm Saturdays
- At no time on Sundays or public holidays.

Except as permitted by an EPL, highly noise intensive works that result in an exceedance of the applicable Noise Management Level (NML) at the same receiver must only be undertaken:

- Between the hours of 8:00 am to 6:00 pm Monday to Friday
- Between the hours of 8:00 am to 1:00 pm Saturday
- If continuously, then not exceeding three hours, with a minimum cessation of work of not less than one hour.

In accordance with Condition E67 of the MCoA, 'continuously' includes any period during which there is less than one hour between ceasing and recommencing any of the work that is subject to the MCoA.

Work may be undertaken outside the hours specified above in any of the following circumstances:

- Safety and emergencies, including:
    - For the delivery of materials required by the NSW Police Force or other authority for safety reasons, or

- 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.

  On becoming aware of the need for emergency work in accordance with Condition E68(a)(ii) of the MCoA, JHCPB will notify the Acoustics Advisor (AA), the ER, the Planning Secretary and the EPA of the reasons for such work. JHCPB will use best endeavours to notify all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work.

- Low impact, including:
  - Construction that causes $L_{Aeq(15\ minute)}$ noise levels:
    - No more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, or
    - No more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s).
  - Construction that causes $L_{AFmax(15\ minute)}$ noise levels no more than 15 dB(A) above the rating background level at any residence
  - Construction that causes:
    - Continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of *Assessing Vibration: a technical guideline* (DEC, 2006)
    - Intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of *Assessing Vibration: a technical guideline* (DEC, 2006).
- By Approval, including:
  - Where different construction hours are permitted or required under an EPL in force in respect of the CSSI
  - Works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E69 of the MCoA
  - Negotiated agreements with directly affected residents and sensitive land user(s).
- By Prescribed Activity, including:
  - Tunnelling (excluding cut and cover tunnelling and surface works) and tunnel fit-out works (excluding surface works) are permitted 24 hours a day, seven days a week
  - Delivery of material that is required to occur outside of standard construction hours in Condition E66 of the MCoA to directly support tunnelling activities
  - Works within an acoustic shed where there is no exceedance of the NMLs.

3.7 Communication and engagement

3.7.1 Internal communication

The Project places a strong focus on internal communication, recognising that clear lines of communication throughout all levels and functions (e.g. management, staff and subcontractors) are key to minimising environmental impacts and achieving continual improvements in environmental performance.

Regular JHCPB meetings may be scheduled with the ER, AA and relevant TfNSW environment personnel. The purpose of these meetings will be to communicate ongoing environmental performance and to proactively identify any issues to be addressed.

Other internal communications regarding environmental issues will primarily be through toolbox talks, environmental inductions, awareness training and daily pre-start meetings as described in Section 3.5. These will provide an opportunity to communicate environmental performance, advise on any upcoming sensitive environmental matters for future work areas, and to receive feedback from on site personnel.

Contact names and telephone numbers for key personnel are provided in a list of emergency and key contacts table at the start of this CEMP.

3.7.2 Liaison with EPA, government authorities or other relevant stakeholders

The JHCPB Environment Team will report on the ongoing environmental performance of the Project, including through preparation of monthly reports to TfNSW (refer to Section 3.9.4). The JHCPB Environment Manager (or delegate) are the authorised contact person for communications with DPE, TfNSW, ER, AA and the EPA on environmental matters.

The JHCPB Project Director (or delegate) and JHCPB Environment Manager (or delegate) are 24-hour contacts. They have the authority to halt work if deemed necessary. They are the key emergency response personnel during an environmental site emergency.

Should the JHCPB Project Director or the JHCPB Environment Manager be unavailable, they will nominate a delegate and will communicate this temporary change to DPE, TfNSW, ER, AA and the EPA.

Table 3-4 summarises the environmental requirements for liaison with the EPA, other government authorities and relevant stakeholders during certain construction situations.

Table 3-4 Required liaison with EPA, other government authorities and relevant stakeholders

Situation	MCoA	Details of communication required
Proposed out-of-hours works	MCoA E83	The EPA and the Secretary will also be provided with the identified respite periods, the outcomes of community consultation and the scheduling of the likely out-of-hours works.
Need for emergency works identified	MCoA E68	JHCPB will notify the AA, ER and the EPA of the need for the emergency works.
Preparation of documents or monitoring programs in consultation with stakeholders	MCoA A5	Where the MCoA requires a document or monitoring program to be prepared or a review to be undertaken in consultation with specific stakeholders, JHCPB will submit evidence of the consultation to the Secretary. In accordance with MCoA A5, this evidence will include: • Documentation of the engagement with the part identified in the condition of approval that has occurred before submitting the document for approval • A log of the dates of engagement or attempted engagement with the identified party • Documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations • Outline of the issues raised by the identified party and how they have been addressed • A description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.

Situation	MCoA	Details of communication required
Upcoming major traffic changes, changes or impacts to Council owned assets, local roads, pedestrian and cyclist routes	N/A	JHCPB will schedule regular meetings and / or presentations (monthly or as agreed) involving relevant Project personnel with Council (Officer and Councillor level, where required) to provide regular updates.

In the event that the JHCPB Environment Team has attempted contact with a key stakeholder on more than two occasions, and the stakeholder has not responded, the issue will be raised to the TfNSW Environment and / or Communications Team, as relevant. All attempted contact will be recorded and reported on.

3.7.3 Community liaison and / or notification

External communication during construction of the Project will be managed and conducted in accordance with the Community Communication Strategy (CCS), as required by Condition B2 of the MCoA. The CCS is required to be approved by the Secretary and implemented for the duration of construction, in accordance with Conditions B4 and B5 of the MCoA. The CCS will be submitted to the Secretary for approval no later than one (1) month prior to the commencement of any work in accordance with Condition B3 of the MCoA.

3.7.4 Complaints management

A Complaints and Enquiries Procedure, consistent with *AS 4269: Complaints Handling*, will be developed for the Project, in accordance with the requirements of Condition B7 of the MCoA.

All community inquiries and complaints related to the construction activities will be referred to the toll free 24-hour community information line (1800 931 189). A postal address (Transport for NSW7 Harvest Street Macquarie Park, NSW 2113) and email address (wht@jhg.com.au) has been provided for receipt of complaints and enquiries. The information line, postal address and email address was published in newspapers circulating in the local area prior to the commencement of construction, will be included in all community notifications and is provided on the Project website.

Records of all complaints received will include the following details:

- Date and time of the complaint
- Method by which the complaint was made
- Any personal details of the complainant as made available by the complainant
- The nature of the complaint
- Action taken in relation to the complaint and any follow up
- If no action is taken, the reasons why.

This information will be included in a Complaints Register in accordance with Condition B10 of the MCoA. The information contained within the register will be made available to the Secretary on request.

Attempts will be made to resolve all complaints in accordance with the CCS.

All environmental complaints will be issued to the TfNSW Representative with an initial report within one (1) working day of complaint receipt detailing the complaint and initial action taken. The final report will be issued within five (5) working days detailing all corrective actions taken so far and any proposed measures to prevent recurrence. This will be in the form of the Complaints Register outlined above.

The JHCPB Environment Team will apply an adaptive approach to ensure that corrective actions are applied in consultation with the appropriate JHCPB Project personnel to allow modifications and improvements in the management of any environmental issues resulting in community complaints.

3.8 Emergency and incident planning

In the event of an environmental incident, the RMS Environmental Incident Classification and Reporting Procedure will be implemented. The procedure is provided in Appendix A6.

The procedure provides the TfNSW approach to:

- Types of incidents
- Criteria for classifying of environmental incidents
- Processes, and legal requirements for reporting and notification of an environmental incident.

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

- Spills of fuels, oils, chemicals and other hazardous materials
- Unauthorised discharge from sediment basins or other containment devices
- Potential contamination of waterways or land
- Accidental starting of a fire or a fire breaking out of containment
- Any potential breach of legislation, including a potential breach of any agency permit condition
- Unauthorised dumping of waste
- Unauthorised clearing or clearing beyond the extent of the Project boundary or premises
- Inadequate installation and subsequent failure of temporary erosion and sediment controls
- Unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat
- Unauthorised harm or desecration to Aboriginal objects and Aboriginal places
- Works undertaken that are not in accordance with a Project approval.

Environmental incidents that will be or have the potential to be classified as Category 1 under the RMS Environmental Incident Classification and Reporting Procedure, will be notified verbally immediately to the TfNSW Environment Manager. Incident reports will be provided to TfNSW Environment Manager and the ER in accordance with the RMS Environmental Incident Classification and Reporting Procedure, including lessons learned from each environmental incident and proposed measures to prevent the occurrence of a similar incident. All efforts will be undertaken to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

This notification process is in addition to other regulatory incident reporting requirements as outlined below:

- In accordance with Condition A43 and A44 of the MCoA, the Secretary must be notified via the Major Projects Website immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number (SSI-8863) and the name (Western Harbour Tunnel & Warringah Freeway Upgrade)) and set out the location and nature of the incident. Subsequent notification must be given, and reports submitted in accordance with the requirements set out in Appendix A of the MCoA.

- The EPA will be notified of any pollution incidents on or around the site via the EPA Environment Line (telephone 131 555) in accordance with Part 5.7 of the Protection of the Environment Operations Act 1997 (NSW) (POEO Act). The circumstances where this will take place include:
    - Whether it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
    - Whether it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations).
- Where an incident involves a potential impact to an Aboriginal site, relevant Heritage NSW and Registered Aboriginal Parties will be notified and their input sought in closing out the incident.

All other environmental incidents, reportable events and regulatory action will be reported to TfNSW as outlined in the RMS Environmental Incident Classification and Reporting Procedure.

The JHCPB Environment Team will provide all records of environmental incidents and regulatory action to TfNSW Environment Team.

3.9 Monitoring, inspections and auditing

Regular compliance activities, such as inspections, observations and monitoring will be undertaken throughout construction of the Project. Subcontractors' works will be included in regular inspections, observations, monitoring and audits as appropriate.

Environmental controls are to be inspected regularly to ensure their ongoing suitability and effectiveness. Environmental monitoring is carried out to establish pre-construction benchmarks, confirm compliance with the Project's approvals and licences and to provide early indication of potential adverse impacts to the environment or community.

3.9.1 Environmental inspections

Table 3-5 outlines an indicative program for site inspections. Copies of all environmental inspection reports will be kept with the Project records and closed out within the agreed timeframes.

Table 3-5 Indicative site inspection program

Item	Frequency	Standards	Reporting	Responsibility
Regular inspections				
Environment site inspections including parking arrangements, air quality, erosion and sediment controls, new / modified hazards / risks	Weekly	Weekly Environmental Inspection Checklist	Completed inspection checklist	JHCPB Environment Team
Environmental Representative site inspections (DPE, EPA and TfNSW will be invited to participate in these inspections)	As per Condition A27 of the MCoA	Condition A27 of the MCoA	Environmental Representative Inspection checklist / notes Monthly Environmental Representative Report to DPE	ER

Item	Frequency	Standards	Reporting	Responsibility
Plant / equipment inspections including maintenance and emissions	Regularly or in accordance with manufacturer's specifications	POEO Act	Plant and vehicle inspection logs	JHCPB foreperson
Pre and post rainfall inspections	Prior to and following rainfall events >10mm	Pre and post Rainfall inspection checklist	Completed inspection checklist	JHCPB Environment Team
As required / specific inspections				
Acoustics Advisor site inspections	Regularly in accordance with Condition A34(f) of the MCoA, or as requested by the Secretary or Community Complaints Mediator	Condition A34 of the MCoA	As part of the Monthly Noise and Vibration Report	AA
Pre-construction and post- construction dilapidation surveys	Inspections of buildings, services and utilities, which have been identified by the geotechnical model as at risk of settlement or vibration, to assess any damage to surface and sub-surface structures from construction	Conditions E107 - E110 of the MCoA D&C G36 AS 4349.1	Condition Survey Reports	JHCPB Environment Team JHCPB Construction Team
Pre-clearance inspection	Prior to any vegetation clearance / pruning or demolition of structures identified as potential roosting sites for microbats and threatened species	Condition C6(e) of the MCoA FFMP RMS Biodiversity Guidelines	Land Disturbance Permit	JHCPB Environment Team
Road dilapidation inspection	Prior to the use of the local road by heavy / oversized vehicles Subsequent report within four weeks of the completion of construction	Condition E136 of the MCoA	Road Dilapidation Report to relevant road authorities	JHCPB Construction Team
Visual surveillance	Continual during activities with high potential to produce dust and during prolonged dry or windy conditions	No visible dust emissions	Site supervisor's log book	JHCPB supervisor
Unexpected potential heritage discovery	Upon discovery of potential heritage item	Condition E63 of the MCoA Manage Cultural Heritage Procedure; RMS Standard Management	As required by Unexpected Heritage Finds Procedure	JHCPB Environment Team

Item	Frequency	Standards	Reporting	Responsibility
		Procedure: Unexpected Heritage Items		
Discovery of human remains	Upon discovery of human remains	Condition E63 of the MCoA RMS Standard Management Procedure: Unexpected Heritage Items	As required by Unexpected Heritage Finds Procedure and reported to NSW Police immediately	JHCPB Environment Team
Heritage inspections	During works near heritage features where required by Archaeological Research Design and Excavation Methodology	Conditions E58-64 of the MCoA	As required by Archaeological Research Design and Excavation Methodology	JHCPB Environment Team

3.9.2 Environmental monitoring

Monitoring will be undertaken to validate the impacts predicted for the Project, to measure the effectiveness of environmental controls and implementation of this CEMP. The monitoring requirements for required aspects are included in the relevant environmental management Sub-plans and are summarised in Table 3-6.

Construction will not commence until all of the relevant Construction Monitoring Programs have been approved by the Planning Secretary, and all relevant baseline data for the specific construction activity has been collected. The monitoring programs will be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.

Table 3-6 Summary of construction phase environmental monitoring required by the Project approval

MCoA / REMM	Description	Overarching document	Reporting Requirements
Conditions C11, C13	Noise and Vibration Monitoring Program (	NVMP	The results of the monitoring must be readily available to the construction team, Proponent, ER and AA. The Planning Secretary and EPA must be provided with access to the results on request.
Condition C11, REMM E33	Air Quality Monitoring Program	AQMP	Monitoring data to be provided to DPE and EPA every 6 months.
Conditions C11, C14 REMM SG20	Groundwater Monitoring Program	GMP	Monitoring data to be provided to DPIE Water every three months. Monitoring data to be provided every 3 months to Sydney Water where discharges are directed to their assets.
Condition E79	Construction vibration monitoring where activities have the potential to impact on heritage items	HMP	The results of the monitoring must be readily available to the construction team, Proponent, ER and AA. The Planning Secretary and EPA must be provided with access to the results on request.

MCoA / REMM	Description	Overarching document	Reporting Requirements
Condition E107	Pre-construction condition surveys	NVMP	Post-construction Condition Survey Reports for each surface structure surveyed to be prepared. The Post-construction Condition Survey Reports must be prepared by a suitably qualified and experienced person(s). Copies of the Post-construction Condition Survey Reports must be provided to the owner(s) of the structures surveyed no later than four months following the completion of construction activities that have the potential to impact on the subject surface / subsurface structure.
Condition C11 REMM WQ4	A freshwater quality monitoring program for the construction of the Project will be developed and implemented.	SSWMP	Monitoring data to be provided to DPIE Water and EPA every 6 months.

The surface water monitoring program, groundwater monitoring program, noise and vibration monitoring program and air quality monitoring program must be endorsed by the ER (the noise and vibration monitoring program must also be endorsed by the AA) and then submitted to the Secretary for approval at least one (1) month prior to commencement of construction.

The ER and the TfNSW Environment Manager will be advised of any construction phase non-compliance from monitoring, and details reported to the Secretary via the Major Projects Website within seven days after TfNSW becomes aware of the non-compliance.

Where a non-compliance is detected or monitoring results are outside of the expected range and are directly attributable to the Project (i.e. are influenced by factors under the direct control of the Project, e.g. noise from construction equipment), the process described in Section 3.10 will be implemented.

A non-compliance Environmental Incident Report and / or Environmental Improvement Notice may be issued by the JHCPB Environment Team in response to the instance of non-compliance if it is found to be construction related.

The timing for any improvement will be agreed between the relevant JHCPB Construction Team personnel and JHCPB Environment Team based on the level of risk (e.g. a significant risk will require immediate action).

All environmental monitoring equipment shall be maintained and calibrated according to manufacturer's specifications and appropriate records kept.

3.9.3 Auditing

In accordance with Condition A38 of the MCoA, independent environmental audits will be conducted in accordance with the *Independent Audit Post Approval Requirements* (DPIE, 2020) and the AS/NZS ISO 19011.

Table 3-7 presents auditing requirements that are applicable to the Project.

Contractor internal audits

Internal auditing will be undertaken generally on a six-monthly basis throughout construction of the Project. The purpose of auditing is to verify compliance with TfNSW (or RMS) specifications, this CEMP, Sub-plans and monitoring programs.

An audit checklist will be developed and amended as necessary to reflect changes to this CEMP, subsequent approvals and changes to Acts, regulations or guidelines.

Independent audits

Independent audits will be conducted in accordance with Conditions A37 to A41 of the MCoA, and the audit schedule per the *Independent Audit Post Approval Requirements* (DPIE, 2020). Proposed independent auditors will be agreed to in writing by the Planning Secretary prior to the commencement of an independent audit.

A response will be prepared to each independent audit undertaken and submitted to the Planning Secretary within two months of undertaking the independent audit site inspection as outlined in the *Independent Audit Post Approval Requirements* (DPIE, 2020). A separate auditing schedule will be prepared to address the auditing requirements of the parent companies policies and procedures.

Table 3-7 Contractor and independent audit requirements

Audit	Requirement	Timing	Responsibility	Recipient
Independent audit	In accordance with *Independent Audit Post Approval Requirements* (DPIE, 2020)	First audit within 12 weeks of commencement of construction and every 26 weeks thereafter	JHCPB Environment Team	TfNSW Environment Manager

3.9.4 Other reporting

Prior to, during and following construction, various reports will be prepared to fulfil TfNSW and other reporting needs. Table 3-8 sets out the reporting requirements applicable to the construction of the Project, timing of the reporting, who is responsible for managing preparation of the reports and the intended recipient(s).

Additional reporting may be necessary as the works progress. In such circumstances, the table below will be amended to reflect these changes.

Table 3-8 Construction reporting requirements

No.	Report	Requirement	Timing	Responsibility	Recipient
1	Monthly environmental report	For incorporation in Project Monthly Reports including environmental statistics (i.e. incidents, regulatory action, complaints on environmental issues), regulatory and authority considerations, monitoring program performance and key environmental issues	Within 10 working days of the end of each calendar month.	JHCPB Environment Team	TfNSW
2	EPL monthly report	Details of all non-compliances with conditions of EPL, measures taken to prevent recurrence, and details of discharges from sediment basins where water quality results exceed EPL conditions.	Within 12 working days of the end of each calendar month.	JHCPB Environment Team	EPA
3	EPL annual returns	Report on compliance with EPL.	Within 60 days of the anniversary of the EPL.	JHCPB Environment Team	EPA
4	ER inspection report	Report of site environmental performance following routine inspections will be submitted to the Project by the ER containing a summary of any findings. The Project will complete any actions and respond to the ER as required via the appropriate established communication channel.	Within 7 days following the end of each month for the duration of the ER's engagement	ER	TfNSW / Secretary
5	Environmental risk assessment	Conducted for each construction stage, Project changes and significant issues.	Prior to construction during development of CEMP and as required thereafter.	JHCPB Environment Team	TfNSW
6	Monitoring results	Report on monitoring data recorded and potential exceedances against criteria.	As required	JHCPB Environment Team	TfNSW
7	TfNSW and/or EPA environmental inspection reports	Response to matters raised in TfNSW and / or EPA site inspections.	As required. Typically every 2 weeks for TfNSW inspection reports and monthly for EPA inspection reports.	JHCPB Environment Team	TfNSW / EPA
8	Acoustic Advisor reports	Report of actions and decisions for which the AA is responsible.	Monthly, within 7 days following the end of each month for the duration of	AA	Secretary, EPA, TfNSW

No.	Report	Requirement	Timing	Responsibility	Recipient
			the Acoustic Advisor's engagement		
9	Independent auditors	Report on the findings of Independent Audits. Proponent must review and respond to each Independent Audit Report	Within 2 months of undertaking the independent audit site inspection	Independent auditor and TfNSW	Secretary
10	Incident report	Any incidents that occur must be notified to the Secretary	Immediately after becoming aware of the incident	Construction Environment Manager and TfNSW	Secretary
11	Non-compliance notification	Any non-compliances that occur must be notified to the Secretary	Within 7 days after becoming aware of the non-compliance	Construction Environment Manager and TfNSW	Secretary
12	Report on need for emergency work	On becoming aware of the need for emergency work, a report detailing the reasons for such work is required.	On becoming aware of the need for emergency work	JHCPB Environment Team	AA, ER
13	Waste Avoidance and Resource Recovery Report (may be reported within sustainability reporting)	Information related to waste generated and recycled	Annually within 1 month from 1 July and actual completion date	JHCPB Environment Team	TfNSW

3.10 Environmental non-compliances and non-conformances

3.10.1 Environmental non-compliance

An environmental non-compliance is defined as one or more of the following:

1. An occurrence, set of circumstances or development that is a breach of this approval (SSI-8863 Planning Approval Table of Definitions).
2. For auditing purposes, the independent auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit (*Independent Audit Post Approval Requirements* (DPIE, 2020).
3. Failure to implement for the duration of construction the CEMP and CEMP sub-plans (Condition of Approval C10).

Where environmental non-compliances are identified, they will be communicated to the JHCPB Environment Team. This will then be recorded on the Project database. An environmental action list will be developed and issued to the relevant JHCPB Project Team personnel for implementation and close out. Actions will be assigned an implementation priority in a collaborative way by the JHCPB Environment Team based on the environmental risk. Timeframes will be set to ensure any damage incurred is rectified and any chance of recurrence is eliminated as soon as practicable. Following corrective action, the JHCPB Environment Team will close out the non-compliance.

The Project will notify the Secretary of any non-compliance as follows:

- Notification of a non-compliance will take place via the Major Projects Website within seven days of the Project being made aware of the non-compliance.
- The notification will identify the CSSI (including the application number (SSI-8863) and the name of the CSSI (Western Harbour Tunnel & Warringah Freeway Upgrade Project)), set out the condition/s that is non-compliant, the nature of the breach; the reason for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

A non-compliance that has already been notified as an incident does not need to also be notified as a non-compliance.

The ER will also include environmental non-compliances within the Environmental Representative Monthly Report.

3.10.2 Non-conformances and opportunities for improvement

A non-conformance is the failure to comply with an environmental requirement, standard or procedure, but does not include non-compliances as defined in Section 3.10.1 (*Environmental Management Plan Guideline for Infrastructure Projects* (Department of Planning, Industry and Environment, 2020)). A non-conformity is an established process under *AS/NZS ISO14001 Environmental Management Systems*, and is defined therein as non-fulfilment of a requirement of the ISO14001 standard or additional EMS requirements that an organisation establishes for itself. As outlined in Section 1.5, this CEMP has been prepared in accordance with the John Holland EMS. The John Holland EMS is certified as complying with the requirements of AS/NZS ISO 14001:2016. Furthermore, the NSW Government *Supplier Procurement List* notes a certified EMS (to ISO 14001 or equivalent) is required as a condition for participation (*Construction Procurement List – Conditions*, NSW Government 2022).

Where non-conformances/improvement opportunities are identified, they will be communicated to the JHCPB Environment Team. This will then be recorded on an environmental action list that will be issued to the relevant JHCPB Project Team personnel for action. Actions will be assigned an implementation priority in a collaborative way by the JHCPB Environment Team based on the environmental risk. Timeframes will be set to ensure any damage incurred is rectified and any

chance of recurrence is eliminated as soon as practicable. Following corrective action, the JHCPB Environment Team will close out the non-conformance.

Where a non-conformance/opportunity for improvement is raised as part of an audit or an incident or complaint investigation the audit, incident or complaint report will be used to close out the non-conformance/opportunity for improvement.

3.11 Records of environmental activities

3.11.1 Environmental records

The JHCPB Environment Team is responsible for maintaining all environmental management documents and records as current at the point of use. Types of documents and records include:

- All monitoring, inspection and compliance reports / records
- Reports on environmental incidents, other environmental non-conformances, complaints and follow-up action
- Minutes of CEMP and construction environmental management system review meetings and evidence of any action taken
- CEMP and Sub-plans
- AMS

All environmental management documents are subject to ongoing review and continual improvement. This includes times of change to scheduled activities or to legislative or licensing requirements.

Only the JHCPB Environment Manager (or delegate), has the authority to change any of the environmental management documentation.

3.11.2 Document control

JHCPB will coordinate the preparation, review and distribution, as appropriate, of the environmental documents and records listed above. During the Project, environmental documents and records will be stored on the JHCPB online information portal (SharePoint or similar).

A document control procedure will be implemented to control the flow of documents within JHCPB and between the ER, AA, TfNSW, stakeholders such as DPE and EPA, as well as subcontractors.

The procedure will also ensure that documentation is:

- Developed, reviewed and approved prior to issue
- Issued for use
- Controlled and stored for the legally required timeframe
- Removed from use when superseded or obsolete
- Archived appropriately.

A document register will identify particular environmental documents, records or data for the Project. The Document Register is maintained in Appendix A4.

3.12 Management review

Management reviews will be undertaken as part of the continual improvement process. The reviews will be initiated by the JHCPB Environment Manager and include relevant Project personnel and stakeholders. The purpose of management reviews is to:

- Identify areas of opportunity for improved environmental performance

- Analyse the causes of nonconformities and deficiencies, including those identified in environment inspections and audits
- Verify the effectiveness of corrective and preventative actions
- Highlight any changes in procedures resulting from process improvement.

Management reviews will be undertaken quarterly with both TfNSW and JHCPB.

In addition, a review of the CEMP, Sub-plans and monitoring programs will occur annually. These reviews will include:

- Consideration of the general progress of work and the level of overall environmental risk (including the risk register contained in Appendix A2)
- Consideration of monitoring, inspection and audit results
- Consideration of recent and relevant incidents and any lessons learnt
- Consideration of any new regulatory obligations
- Consideration of any recorded pollution complaints
- A review of the effectiveness of environmental controls, including erosion and sediment controls
- Consideration of changes in operational needs of the Project such as resourcing
- Feedback from TfNSW and other relevant stakeholders.

The outcomes of environmental reviews may trigger amendments to this CEMP, Sub-plans and monitoring programs, revision to the Project's environmental management system, review of the risk assessment, review of internal audit frequency, re-evaluation of the Project objectives and targets, as well as, input into other environmental documentation.

3.13 CEMP / Sub-plan / monitoring programs and changes to the Project

3.13.1 CEMP and sub-plan revision

CEMP Revision

A document review process ensures that environmental documentation including this CEMP and associated Sub-plans are updated as appropriate for the specific works that are occurring on site. This includes the management review process described in Section 3.12, Project changes that occur in accordance with Section 3.9.3 and any request from the Department of Planning and Environment to amend the CEMP or Sub-plans.

The CEMP, Sub-plans and / or monitoring programs will be revised within 30 days of the completion of a full review or receipt of actions identified by an audit undertaken in accordance with Section 3.9.3 of this CEMP.

Should the document review process identify any issues or items within the documents that are either redundant or in need of updating, it is the responsibility of the JHCPB Environment Team to prepare the revised documents.

The revised document(s) will then be issued to the ER for endorsement and where required, approval, as the ER is permitted to approve minor changes to the CEMP, Sub-plans and monitoring programs. Minor amendments that the ER could approve would include those that:

- Do not increase impacts to nearby receivers
- Comprise updating or are of an administrative nature
- Are consistent with the terms of the MCoA and this CEMP, CEMP Sub-plans and monitoring programs.

The CEMP, Sub-plans or monitoring programs, if approved by the ER, will be provided to the Secretary for information.

Where the CEMP, Sub-plans or monitoring programs require a change that the ER cannot approve, the documents will be approved by TfNSW, endorsed by the ER and sent to the Secretary for approval.

Revised approved versions of the CEMP, Sub-plans and / or monitoring programs will be made publicly available on the Project website prior to the commencement of the work has triggered an update to the documents.

Sub-plan Revision

A number of environmental management Sub-plans have been authored to support the CEMP. These documents are prepared to identify requirements and processes applicable to specific impacts or aspects of the activities described CSSI assessment documentation. They address requirements of the MCoA, REMMs and other measures identified in relevant environment documentation.

Environmental strategies may be developed as required throughout the Project. These will also guide environmental management of potential impacts on site.

A list of construction CEMP Sub-plans for the Project, and their approval requirements, are provided in Table 3-9. The latest Staging Report for the Western Harbour Tunnel and Warringah Freeway Upgrade project documents the required project-wide environmental documentation to be prepared for the project and the timing required for submission where required.

Table 3-9 CEMP Sub-plans for the Project

Document name	Document number	Approval pathway/consultation requirement
Traffic, Transport and Access Management Sub-plan	STW-JHC-PLN-00-EN-002-000002	Prepared in consultation with relevant council(s) Endorsed by the ER Submitted to the Secretary for Approval
Noise and Vibration Management Sub-plan	STW-JHC-PLN-00-EN-002-000004	Prepared in consultation with NSW Health and relevant council(s) Endorsed by the ER Submitted to the Secretary for Approval
Air Quality and Odour Management Sub-plan	STW-JHC-PLN-00-EN-002-000008	Prepared in consultation with NSW Health and relevant council(s) Endorsed by the ER Submitted to the Secretary for Approval
Soil and Surface Water Management Sub-plan	STW-JHC-PLN-00-EN-002-000005	Prepared in consultation with DPIE Water, EESG, EPA, Sydney Water (if Sydney Water's assets are affected) and relevant council(s) Endorsed by the ER Submitted to the Secretary for Approval
Groundwater Management Sub-plan	STW-JHC-PLN-00-EN-002-000006	Prepared in consultation DPIE Water, EESG, EPA, Sydney Water (where it is proposed to discharged groundwater into Sydney Water's assets) and relevant council(s) Endorsed by the ER Submitted to the Secretary for Approval

Where a separate Sub-plan is not required, information regarding environmental management and control of specific areas is outlined in Section **Error! Reference source not found.**.

3.13.2 Changes to the Project

Refinements to the Project, as assessed in the EIS and RtS, may result from detailed design development or changed circumstances throughout construction. TfNSW is required to seek formal approval from the Minister for any Project modifications and for documenting refinements that are consistent with the approved Project.

Any design changes or changes in scope of works must be communicated to the JHCPB Environment Manager. The JHCPB Environment Team will then undertake an additional environmental assessment or environmental consistency assessment in consultation with the TfNSW Environment Manager to determine if a modification to the Project, as assessed in the EIS and RtS, may be required.

Should the additional environment assessment determine that a Project modification may be required, i.e. the impacts are of a nature and scale that it is not considered consistent with the documents listed in Condition A1 of the MCoA, the ER will be informed and modification application under Section 5.25 of the *EP&A Act 1979* prepared and lodged by TfNSW to the Secretary for determination.

In line with the TfNSW Part 5.1 Assessment procedure, the TfNSW General Environment Manager will approve all refinements that are deemed consistent with the documents listed in Condition A1 of the MCoA, where appropriate.

4 Construction control

4.1 Flora and Fauna

A Flora and Fauna Management Procedure has been developed to manage flora and fauna risks for the Project. This document is provided in Appendix C.

4.2 Contaminated land

An Unexpected Finds Procedure for contamination has been developed to manage contaminated land on this Project and forms part of the SSWMP. In accordance with Conditions E123 and E124 of the MCoA, the Unexpected Find Procedure for contamination will be followed in the case that contaminated land or asbestos is excavated or discovered during construction. This procedure will be implemented for the duration of construction.

4.3 Spill prevention and response

A Spill Response Procedure will be developed to manage spill prevention and response on the Project, as required by Part 5.7 of the *Protection of the Environment Operations Act 1997* (NSW) (POEO Act). This document will be developed in accordance with the relevant requirements, guidelines and legislation and forms part of the SSWMP.

4.4 Fire safety

The following fire-fighting equipment is provided on site and in vehicles to ensure the safety of public and property:

- Fire extinguishers
    - Class A – Ordinary combustibles
    - Class B – Flammable and combustible liquids
    - Class C – Flammable gases
    - Class E – Electrically energised equipment.
- Fire blankets
- Fire hoses.

Total fire ban declarations and resultant work restrictions will be communicated to JHCPB personnel.

All personnel involved in welding, grinding, thermal or oxygen cutting, heating or other fire or spark-producing operations will be trained in fire prevention, safety and basic fire-fighting skills.

4.5 Aboriginal heritage

A Heritage Management Procedure has been developed to manage the risks on this Project. This document is provided in Appendix G.

4.6 Non-Aboriginal Heritage

A Heritage Management Procedure has been developed to manage the risks on this Project. This document is located in Appendix G.

4.7 Waste management and resource recovery

The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste will comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, as the case may be.

Wastes will be appropriately transported, stored and handled according to their waste classification and in a manner than prevents pollution of the surrounding environment.

4.7.1 Waste management

The *Waste Avoidance and Resource Recovery Act 2001* ensures that resource management options are considered against a hierarchy of:

- Avoidance of unnecessary resource consumption
- Resource recovery (including reuse, recycling, reprocessing, and energy recovery)
- Disposal.

The approach to the steps in the waste hierarchy most relevant to the Project is briefly described below.

4.7.1.1 Reduce or avoid

Reducing or avoiding the generation of waste is of primary importance to the Project. The following approach will be adopted:

- Consider construction options that have a higher waste reduction capacity than alternatives
- Order material / goods with minimal packaging or request suppliers to remove packaging from site
- Accurately estimate materials required to minimise wastage of product.

4.7.1.2 Reuse and recycling

Waste separation and segregation will be promoted on site to facilitate reuse and recycling as a priority of the waste management program as follows:

- Segregate waste onsite – waste materials, including spoil and demolition waste, will be separated onsite into dedicated bins / areas for either reuse onsite or collection by a waste contractor and transported to offsite facilities
- Separate waste offsite – wastes will be deposited into one bin where space is not available for placement of multiple bins, and the waste will be sorted offsite by a waste contractor
- Where feasible and reasonable, secondary waste material will be used in construction.

4.7.1.3 Waste handling and storage

Where waste is required to be handled and stored onsite prior to onsite reuse or offsite recycling / disposal, the following measures will apply:

- Wastes requiring disposal will be appropriately segregated according to their waste stream, in accordance with the relevant guidelines or procedures.
- Spoil, topsoil and mulch will be stockpiled onsite in allocated areas, where appropriate, and mitigation measures for dust control and surface water management will be implemented in accordance with the AQOMP and the SSWMP.
- Asbestos containing materials (ACM) and ACM waste would be investigated, managed, handled and disposed by a suitably qualified and experienced occupational hygienist. The disturbance of, handling and disposal of any asbestos containing materials would be

undertaken by an appropriately licenced asbestos removal contractor, in accordance with applicable WorkCover and EPA requirements and guidelines.

- Liquid wastes will be stored in appropriate containers in bunded areas until transported offsite. Bunded areas will have the capacity to hold 110% of the liquid waste volume for bulk storage or 120% of the volume of the largest container for smaller packaged storage.
- Hazardous waste will be managed by the appropriately qualified and licensed contractors, in accordance with the requirements of the Work Health and Safety Regulation 2017, *Environmentally Hazardous Chemicals Act 1985* and the EPA waste disposal guidelines.
- All other recyclable or non-recyclable wastes will be stored in appropriate covered receptacles (e.g. bins or skips) in appropriate locations onsite and subcontractors commissioned to regularly remove / empty the bins to approved disposal or recycling facilities.
- Higher risk wastes (referred to as 'controlled' or 'trackable' waste) will be managed and transported by appropriately qualified and licensed contractor, in accordance with the requirements of the *Environmentally Hazardous Chemicals Act 1985* and the EPA waste disposal guidelines.

4.7.2 Waste classification

4.7.2.1 Spoil from land-based construction activities

Where waste cannot be avoided, reused or recycled it will be classified and appropriately disposed of. The classification of waste will be undertaken in accordance with the NSW *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014). This document identifies six classes of waste: Special, Liquid, Hazardous, Restricted Solid, General Solid (putrescible) and General Solid (non-putrescible) and describes a six step process to classifying waste.

The general classification principles are as follows:

- If a special waste is mixed with another waste, the waste must be managed to meet the requirements of both the special wastes and the other class of waste
- If asbestos waste is mixed with any other class of waste, all of the waste must be classified as asbestos waste
- If liquid waste is mixed with hazardous or solid waste and retains the defined characteristics of liquid waste, it remains liquid waste
- Two or more classes of waste must not be mixed in order to reduce the concentration of chemical contaminants. Dilution is not an acceptable waste management option
- Where practicable, safe and appropriate, it is desirable to separate a mixture of wastes before classifying them.

Table 4-1 summarises indicative solid and liquid waste streams that would be generated during construction, including examples of these waste streams and anticipated waste classifications.

Consistent with the resource management hierarchy under the *Waste Avoidance and Resource Recovery Act 2001*, solid wastes would be reused and recycled where feasible and reasonable. Construction waste would be disposed of at appropriate licenced facilities.

Table 4-1 Indicative solid and liquid waste streams generated during construction (non-spoil)

Waste stream	Examples	Likely waste classification
Demolition wastes	Concrete, bricks, tiles, timber, metals, plasterboard, carpets, electrical and plumbing fittings, furnishings	General solid waste (non-putrescible)

Waste stream	Examples	Likely waste classification
Aggregates – crushed rock/concrete	Concrete	General solid waste (non-putrescible)
General construction wastes	Timber formwork, scrap metal, steel, concrete, plasterboards, packaging materials	General solid waste (non-putrescible)
Wastes from the operation and maintenance of construction vehicles and equipment	Adhesives, lubricants, waste fuels, oils, engine coolant, batteries, hoses, tyres	Liquid waste and General solid waste (non-putrescible)
General wastes from site offices	Putrescibles (food waste), paper, cardboard, plastics, glass, printer cartridges	General solid waste (putrescible and non-putrescible)

In addition to the above waste streams, the Project would also generate spoil associated with the tunnelling works. Indicative volumes of spoil that would be extracted and required to be managed are summarised in Table 4-2.

Table 4-2 Indicative spoil generation

Construction site	Spoil volume (cubic metres)	Spoil composition
WHT Cut and cover (WHT12)	600 390	Predominately sandstone
		Project total = 600 390

Spoil would be classified prior to leaving the site in accordance with NSW *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014) or applicable NSW EPA resource recovery order. It is anticipated that the majority of this material would be used at development, construction or remediation sites across Greater Sydney.

The geochemistry of the spoil material as well as its consistency and quality would determine the reuse options. The spoil produced by the Project would have the following potential reuse opportunities:

- Granular sandstone fill is likely to be suitable for use as structural fill
- Excavated clay and clayey sand material is likely to be suitable for use as general fill following moisture conditioning
- Excavated weathered shale and sandstone could be suitable for use as structural fill following moisture conditioning to reduce reactivity
- Medium strength or better quality shale is likely to be suitable for use as non-reactive fill
- Medium to high strength sandstone may be suitable for use as structural fill
- Wet clay and wet shale spoil is unlikely to be suitable for reuse on site without substantial moisture conditioning.

Where spoil cannot be reused for the Project, opportunities to reuse this material on other projects (preferably within the Sydney region to reduce transport distances) would be identified.

The following sites are potential options for spoil reuse / disposal:

- Western Sydney Airport (about 50 kilometres from the Project)

- Moorebank Intermodal Terminal Precinct (about 30 kilometres from the Project)
- Kurnell Landfill (about 30 kilometres from the Project)
- Penrith Lakes Scheme (about 60 kilometres from the Project).

These sites have a need for spoil or fill material and represent viable reuse locations. Other re-use or disposal sites may be used depending on need at the time the spoil is generated. Relevant approvals to move waste between sites and use it on land will need to be identified and secured before waste is reused at offsite locations.

All waste that is removed from site will be recorded and tracked using a Waste Management Register which will be in operation until the Construction Completion Date. The register will record key information including the type of waste, the amount transported and the location it was reused, recycled, or disposed. This includes the retention of disposal dockets for auditing purposes.

4.7.3 Land-based waste disposal

The disposal of waste is to be treated as a last resort. Waste disposal will be in accordance with the *Protection of the Environment Operations Act 1997* and the *Waste Avoidance and Resource Recovery Act 2001*.

Wastes that are unable to be reused or recycled on site will be disposed of offsite to an appropriately licensed waste facility following classification (refer to Section 4.7.2).

In the event that a waste is to be transported to a non-licensed facility for disposal, in accordance with RMS Specification G36 – Environment Protection, the Project would arrange for a notice under Section 143(3A) of the POEO Act to be completed and signed by the owner of the waste facility to demonstrate they are legally permitted to accept the waste type. The Section 143 notice would be provided to TfNSW for approval prior to transportation of the waste material.

This includes waste transported for reuse, recycling, disposal or stockpiling.

Waste in this context includes spoil, Virgin Excavated Natural Material (VENM), Excavated Natural Material (ENM), crushed rock, reclaimed asphalt pavement, mulched vegetation, waste concrete, and any other resource recovery order compliant material.

Further details, including the steps to be taken to obtain the “s.143 Notice” from the landholder, and the template (or proforma) letter to the landholder, can be found in the RMS Environment Technical Direction ETD 2015/020 “Legal offsite disposal of Roads and Maritime Services waste”, available at:

http://www.rms.nsw.gov.au/documents/about/environment/rms-environment-offsite-wastedisposal.pdf

The Project would provide an accurate description of the waste on the Section 143 Notice, include evidence that the waste facility has the appropriate planning consent and confirm the waste delivery arrangements with the landholder prior to transporting materials to the receiving facility.

4.7.4 Compliance management

4.7.4.1 Training

All employees, subcontractors and utility staff working on site will undergo site induction training relating to waste and energy management issues, including:

- Existence and requirements of this CEMP
- Relevant legislation
- Waste reporting requirements
- Requirements of the waste hierarchy
- Waste / recycle storage requirements

- Energy efficient best practices
- Waste handling requirements and details of the types of wastes that are intended for on site reuse
- Other specific responsibilities for waste and reuse management
- Other specific responsibilities for energy management.

4.7.4.2 Monitoring and inspections

Regular monitoring and inspections will be undertaken during construction.

Table 4-3 Monitoring and inspection

Monitoring details	Record	Responsibility	Frequency
Track waste taken offsite	Waste Register	JHCPB Engineer	When waste taken offsite. Waste Register to be updated regularly.
	Waste receipts/dockets	JHCPB Supervisor	When waste taken off site to a waste facility.
	Transportation dockets	JHCPB Supervisor	When EPA 'trackable' waste taken off site.
Inspections for litter, unauthorised disposal of construction waste, contamination of waste streams and adequacy of capacity of waste receptacles.	Environmental Inspection Checklist; Action register	JHCPB Supervisor JHCPB Environmental Advisor	Daily observations

4.7.4.3 Reporting

Waste information, including quantities of materials used (for each material type), quantities of waste to be beneficially reused (for each waste material type, e.g. spoil, timber), quantities of waste to be recycled (for each waste material type, e.g. steel) and quantities of waste unable to be recycled or beneficially reused, will be prepared and submitted to TfNSW as required under the sustainability reporting requirements, detailed in the Sustainability Management Plan. Information will be reported on quarterly basis as part of the Quarterly Sustainability Reports and collated in the Annual Sustainability Report for each year of construction. Final waste information will be included as part of the Project's ISC As Built Submission.

4.8 Use of pesticides

All herbicide use will be recorded on a herbicide application form, and copies provided to the client within 24 hours of application. All personnel managing, handling or applying pesticides must have completed appropriate training.

4.9 Work in environmentally sensitive areas

Clause 4.13 of G36 is addressed in Section 3.2.4 of this CEMP.

4.10 Environmental incident notification and reporting

Clause 4.14 of G36 is addressed in Section 3.8 of this CEMP. The response to environmental emergencies and incidents is to be consistent with the RMS Environmental Incident Classification and Reporting Procedure (refer to Appendix A6).

4.11 Ancillary Site facilities

Where required, an Ancillary Site Establishment Management Plan (ASEMP) will be developed to manage ancillary site establishment and associated environmental risks. The ASEMP applies to sites identified in the EIS, based on suitability and the likely amenity and environmental impacts. It is not anticipated that an ASEMP is required for Stage 3A activities.

As outlined in Section 1.4, WHT3 and WHT12 will be established as part of the M4-M5 Link Rozelle Interchange project, with no establishment activities occurring as part of Stage 3A. Operational management of these sites once construction has commenced would be in accordance with this CEMP.

Ancillary sites and construction support sites will be developed to minimise visual impacts for adjacent sensitive land users where feasible and reasonable. The Project was able to reduce the visual impact of the WHT1 site by relocating it to within the WHT cut and cover structure, enabling the vast majority of project activities to occur underground and outside the view of sensitive land users. This may include the following:

- Locating storage areas and associated works in cleared or otherwise disturbed areas away from residential areas where reasonable and feasible,
- Boundary screening will be erected between ancillary facilities that are adjacent to sensitive land users for the duration of the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners,
- Hoardings and temporary noise walls, where required, will be erected as early as possible within the site establishment phase to provide visual screening,
- Where site hoardings are in proximity to open space, neutral colours and designs would be used where possible and be made of quality materials,
- Incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located,
- Site boundary fencing / hoarding at each ancillary facility will display the CSSI name, application number, telephone number, postal address and email address before construction commences,
- Regular inspection and maintenance of site hoardings for graffiti, which will be promptly removed where found, and
- Site lighting will be managed in accordance with AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting. Construction of the CSSI will be consistent with the requirements of the relevant Australian Standards in the series AS/NZS 1158 – Lighting for Roads and Public Spaces

Any ancillary facility not identified in the ASEMP must be assessed to determine whether it is a Minor Construction Ancillary Facility in accordance with Condition A19 of the MCoA and approval must be given by the ER prior to site establishment.

Where an ancillary facility is not considered by the ER to be a Minor Construction Ancillary Facility, the ASEMP will need to be updated (or a separate ASEMP prepared) in accordance with Condition A17 of the MCoA.

Table 4-4 outlines the applicability of MCoA requirements to the assessment and approval of Ancillary Facilities.

Table 4-4 Ancillary Facility MCoA requirements

MCoA	Applicability	Timing	Responsibility for Approval
Ancillary Site Establishment Management Plan			
A17	Before establishment of any construction ancillary facility (excluding minor construction ancillary facilities determined by the ER to have minimal environmental impact and those established under Condition A19 of the MCoA), the Proponent must prepare an Ancillary Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the construction ancillary facilities. The Ancillary Site Establishment Management Plan must be prepared in consultation with the relevant council and government agencies. The Plan must be submitted to the Planning Secretary for approval one month before the establishment of any construction ancillary facilities. The Ancillary Site Establishment Management Plan must detail the management of the construction ancillary facilities and include: (a) a description of activities to be undertaken during establishment of the construction ancillary facility (including scheduling and duration of work to be undertaken at the site); (b) figures illustrating the proposed operational site layout and the location of the closest sensitive land user(s); (c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment work; (d) details of how the site establishment activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in Condition A1, and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and (e) a program for monitoring the performance outcomes, including a program for construction noise monitoring. Nothing in this condition prevents the Proponent from preparing individual Ancillary Site Establishment Management Plans for each construction ancillary facility.	One month before site establishment	Planning Secretary
Minor Construction Ancillary Facilities			
A19	Lunch sheds, office sheds, portable toilet facilities, car parking, material storage, and the like, can be established and used where they have been assessed in the EIS or satisfy the following criteria: (a) are located within or adjacent to the construction boundary; and (b) have been assessed by the ER to have - (i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts,	One month before site establishment	ER

	dust and odour impacts, and visual (including light spill) impacts, and (ii) minimal environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.		

4.12 Utilities and Services

During design the Project will identify the utilities and services potentially affected by construction to determine requirements for diversion, protection and/or support. Alterations to services will be determined by negotiation between the Project and the service providers. The Project, in consultation with service providers, will ensure that disruption to services resulting from construction activities are avoided where practical and advised to customers.

4.13 Restoration of site

On completion of the works, all areas disturbed by construction activities (including the site compound, materials storage, access and haul roads) must be reinstated and restored to conditions as outlined in the post-construction land assessment and in consultation with and to meet the requirements of the relevant landowner. These areas will be rehabilitated as soon as practicable to an appropriate land use, taking into consideration the location, land use characteristics, area and adjacent land uses.

All areas disturbed by construction and not required for operation of the Project will be restored to existing condition or in accordance with the Place, Design and Landscape Plan (PDLP) where applicable

Weed species will be managed in accordance with *Guide 6: Weed management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011).

Pathogens will be managed in accordance with *Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011).

Any property access physically affected by the Project must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier.

Following restoration, a post-construction land condition assessment will be arranged for each area used for construction. The land condition assessment will be undertaken by an independent environmental consultant. This report will then be submitted to the TfNSW Representative.

Appendix A1 Legal requirements

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
General					
Environmental Planning and Assessment Act, 1979	All	The Project has been declared critical State Significant Infrastructure (CSSI) by virtue of Schedule 5, clause 4 of *State Environmental Planning Policy (State and Regional Development) 2011.* Comply with the terms Minister for Planning's approval for the project. Obtain the Minister's approval for any project modifications that are not consistent with the planning approval.	S5.13 S5.14	Yes	Section 1.1
		Environmental assessment and public consultation, including a preferred infrastructure report that outlines any proposed changes to the SSI	S5.147		EIS RtS
		• Application of other provisions of the EP&A Act • Approvals and legislation that does not apply • Approvals and legislation that must be applied consistently	S5.22 S5.23 S5.24		This table
Protection of the Environment Operations Act 1997	Environmental protection	Do not risk harming the environment by wilfully or negligently: • Disposing of waste unlawfully • Causing any substance to leak, spill or otherwise escape (whether or not from a container) or • Emitting an ozone depleting substance.	S115 S116 S117	Yes	Section 4.7 SSWMP GWMP SMP

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
Protection of the Environment Operations Act 1997	Site licensing	An Environment Protection Licence (EPL) under Chapter 3 of the POEO Act would be required for the construction of the project.	cl. 35 of Schedule 1	Yes	Section 3.2.2
		Do not carry out or allow an activity listed in Schedule 1, or carry out work to enable such an activity, unless the premises are licensed by the EPA. This applies to: road construction: meaning the construction, widening or re-routing of roads if it results in the existence of 4 or more traffic lanes (other than bicycle lanes or lanes used for entry or exit) for 1 kilometres of their length in the metropolitan area, or 5 kilometres in length in any other area, where the road is classified, or proposed to be classified, as a freeway or tollway under the Roads Act 1993.	S47 S48 EPL	Yes	Section 3.2.2 Section 3.7.2 Section 3.9.4
Crown Lands Management Act 2016	Crown land	Ministerial approval required to grant a 'relevant interest' over a Crown Reserve. Any works on Crown land are likely to occur pursuant to a relevant interest (i.e. licence, permit, easement or right of way) to be granted for works on this land.	34A	No	
Roads Act 1993	Road work	Requires the consent of the appropriate road authority for carrying out work on, or disturbing, the surface of a public road. Where the proponent is a public authority, the roads authority must consult with the applicant before making a decision.	S138	Yes	TTAMP
Airports (Protection of Airspace) Regulations 1996	Ventilation facility development	Requires the consent of the Department of Infrastructure and Regional Development in order to permit the intrusion of plume rises at Rozelle into the prescribed airspace for Sydney Airport.	S10	No	Not relevant to this stage of the WHT project.

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
and Airports Act 1996					
National Greenhouse and Energy Reporting Act 2007 and Regulations 2008	Greenhouse gas emissions	Accounting and reporting of greenhouse gases produced and energy consumed during construction. Applicability dependent on thresholds.	-	Yes	SMP
Water					
Water Management Act 2000 With the exception of controlled activity approvals, the *Water Management Act 2000* (WM Act) only applies in relation to those water sources covered by operational water sharing plans – these areas cover most of the State's major regulated river systems.	Water access and use.	Access licence required to take water from a water source (a lake, river or estuary or place where water occurs naturally on or below the surface of the ground and includes coastal waters). This also applies to unregulated river access licences. Do not use of water on land (unless supplied by a water utility, irrigation corporation etc or in accordance with basic landholder rights) without a water use approval.	S56 S60A S89 S90 S91A	No	Under the EP&A Act, the Project is exempt from this requirement.
	Water management works	Do not construct/use a water supply work, drainage work or flood work without the appropriate approval.	S90 S91B S91C S91D	No	Under the EP&A Act, the Project is exempt from this requirement.
	Waterfront land.	Do not deposit material, excavate, or remove material within a watercourse bank, shore or bed, or on land 40 metres inland, or interfere with the likely flow of water to such a body, without a controlled activity approval.	S91	No	Under the Water Management (General) Regulation 2018 (cl.41), public authorities are exempt from the need to obtain a controlled activity approval.

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
	Activity approvals	An aquifer interference approval confers a right on its holder to carry out one or more specified aquifer interference activities at a specified location, or in a specified area, in the course of carrying out specified activities.	S91(3)	No	Under the EP&A Act the Project is exempt from this requirement.
Water Act 1912 With the exception of controlled activity approvals, the WM Act only applies in relation to those water sources covered by operational water sharing plans – these areas cover most of the State's major regulated river systems.	Surface water	Obtain a licence or permit for construction or use of 'work' for purposes including the taking and using of water	S21B	Yes	Note that this Act is being progressively repealed by the Water Management Act 2000 and does not apply to areas of the state where water sharing plans are in place. Groundwater and surface water within and near the Project are covered by the following Water Sharing Plans: Water Sharing Plan, Greater Metropolitan Region Groundwater Sources (NoW 2011).
Sydney Water Act 1994	Wastewater	Approval to discharge wastewater to sewer and Trade Waste Agreement.	S49	Yes	GMP SSWMP
Sydney Water Regulation 1994	Plumbing and drainage	Permit required to do plumbing or drainage work, which includes connection to a stormwater drain	S18	Yes	GMP SSWMP
Protection of the Environment Operations Act 1997	Water pollution	Do not cause water pollution (other than to a sewer), except in accordance with the conditions of an Environment Protection Licence.	S120 S122	Yes	GMP SSWMP

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
Noise					
Protection of the Environment Operations Act 1997	Plant maintenance and operation	Do not operate plant if it emits noise caused by poor maintenance or operation.	S139	Yes	NVMP
	Materials management	Do not cause noise by failing to properly and efficiently deal with materials.	S140	Yes	NVMP
Contaminated material					
Protection of the Environment Operations Act 1997	Land pollution	Do not cause or permit land pollution other than under authority of a licence or regulation. (However, it is not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations.)	S142A – S142E	Yes	Project EPL Unexpected Contamination Finds Procedure
Contaminated Land Management Act 1997	Reporting contamination	Notify the EPA if; • Contaminants exceed thresholds contained in guidelines or the regulations where contamination has entered or will foreseeably enter neighbouring land, the atmosphere, groundwater or surface water. • Contaminants in soil are equal to or exceed guideline levels with respect to the current or approved use of the land. • Contamination meets other criteria that may be prescribed by the regulations.	S60	Yes	Unexpected Contamination Finds Procedure
Biodiversity					

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
Biodiversity Conservation Act 2016	Fauna	Do not harm any animal that is; of a threatened species, that is part of a threatened ecological community or is a protected animal, unless authorised under other legislation (e.g. planning approval).	S2.1 S2.8	Yes	FFMP
	Habitat	Do not damage habitat of a threatened species or ecological community unless authorised under other legislation (e.g. planning approval).	S2.4 S2.8	Yes	FFMP
Biodiversity Conservation Act 2016	Biodiversity	Do not damage declared areas of outstanding biodiversity value unless authorised under other legislation (e.g. planning approval).	S2.3 S2.8	Yes	FFMP
	Flora	Do not pick a plant that is; of a threatened species, that is part of a threatened ecological community or is a protected plant, unless authorised under other legislation (e.g. planning approval).	S2.2 S2.8	Yes	FFMP
Biosecurity Act 2015	Biosecurity matters including pests, disease and weeds	The duty to prevent, eliminate and minimise biosecurity risks posed by biosecurity matters as defined by the Act.	S22	Yes	FFMP Section 4.1
Biosecurity Regulation 2017	Pests and Diseases	Notify the presence any pest or disease listed in Schedule 1 of the Biosecurity Regulation 2014, within 1 working day after suspecting or becoming aware of the pest or disease.	Regulation cl.7 Schedule 1	Yes	FFMP
	Dredging or reclamation	Provide the Minister for Primary Industries 28 days notice of planned dredging or reclamation work.	S199	No	

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
Fisheries Management Act 1994	Mangroves, seagrasses, marine vegetation	Do not harm any mangroves, seagrasses or other marine vegetation on public water land protected by the regulations without a permit.	S205	No	Under the EP&A Act the Project is exempt from this requirement
	Fish passage	Do not block fish passage without a permit	S219	No	
Environment Protection Biodiversity Conservation Act, 1999 (Cwlth)	Flora and fauna conservation	Do not kill, injure or take a member of a listed threatened species without a permit.	Part 13	Yes	FFMP
		Comply with the terms of any EPBC Act approval for the project.	NA	NA	N/A
Air Quality					
Protection of the Environment Operations Act 1997	Air quality	Do not operate plant which emits air pollution caused by poor maintenance or operation	S124	Yes	AQOMP
		Do not cause or neglect to prevent air pollution (eg dust exceeding reasonable levels without active management measures in place)	S126	Yes	AQOMP
		Do not cause or permit the emission of an offensive odour	S129	Yes	AQOMP
Protection of the Environment Operations (Clean Air) Regulation 2002	Air quality	Excessive impurities are visible for a continuous period of more than 10 seconds	S15	Yes	AQOMP
		Air emission concentrations for scheduled premises	Schedule 4	Yes	AQOMP
Waste					

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
Protection of the Environment Operations Act 1997	Littering	Do not litter in a public place or an open private place. Do not litter from a vehicle. Only deposit advertising material in receptacles provided for mail or newspapers or under the door of the premises. Do not deposit advertising material on or in vehicles.	Part 5.6A	Yes	Section 4.14 Community Communication Strategy
Protection of the Environment Operations Act 1997	Waste and transportation	Do not undertake a scheduled waste activity unless in accordance with an environmental protection licence. A licence must be obtained when construction and demolition wastes are applied to land under certain circumstances. This includes the reincorporation of crushed road base material back into roads and the placing of excess fill material onto properties. A licence is not required if the material: • Is VENM. • Does not exceed 200 tonnes in the Sydney, Newcastle and Wollongong areas, or 20,000 tonnes outside these areas. • Is covered by a “general exemption”. Current exempted materials are ENM, recycled aggregates and raw mulch. These exemptions are conditional and require some chemical testing of materials before they are placed onto land. • A licence must be obtained if more than 2,500 tonnes (or cubic metres) is stored on a stockpile site at any one time, or more than 30,000 tonnes of waste is received per year from off site.	Part 3.2 Schedule 1	Yes	Section 4.7

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
		Only transport waste to a facility that can lawfully accept the waste.	S143	Yes	Section 4.7 Need Section 143 notice of POEO Act
		Do not dispose of waste in a manner that harms or is likely to harm the environment.	S115	Yes	Section 4.7
Protection of the Environment Operations (Waste) Regulation 2005	Waste and transportation	Comply with general requirements for the transport of waste. For example, any vehicle used by the person to transport waste must be kept in a clean condition and be maintained so as to prevent spillage of waste. For some wastes only licensed transporters can be used.	Regulation cl.49	Yes	Section 4.7
		Comply with record keeping requirements in relation to the transport of certain types of waste.	Regulation Part 3	Yes	Section 4.7
Waste Avoidance and Resource Recovery Act 2001		Establish the waste hierarchy. Promotes waste avoidance and resources recovery by developing waste avoidance and resource recovery strategies.	-	Yes	Section 4.7
Heritage					
Heritage Act 1977	Heritage	Do not undertake an activity that will affect a place, building, work, relic, moveable object or precinct which is subject to an Interim Heritage Order or is listed on the State Heritage Register without approval from the Heritage Council.	S56-57	No	Under the EP&A Act the Project is exempt from this requirement
		Do not disturb or excavate land with knowledge or reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed; or	S139	No	Under the EP&A Act the Project is exempt from this requirement

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
		Do not disturb or excavate land on where a relic has been discovered or exposed.			
Heritage Act 1977	Heritage	Notify the heritage Council on discovery of a relic	S146	Yes	HMP
National Parks and Wildlife Act 1974	Aboriginal places and objects	Do not harm or desecrate an Aboriginal object or Aboriginal place without consent.	S86	N/A	HMP
		Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	S89A	Yes	HMP
		An Aboriginal heritage impact permit may be issued.	S90	No	Under the EP&A Act, the Project is exempt from this licence
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)	Protection of areas and objects	Report any discovery of Aboriginal remains to the Federal Minister for the Environment and Heritage.	S20	Yes	HMP
		Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	S22	Yes	HMP
Traffic					
Transport Administration Act 1988	Traffic management	Comply with the functions of Roads and Maritime relating to traffic management and safety	S52A	Yes	TTAMP
Road Rules 2014	Use of roads	Establish the road rules that are applicable to vehicles and road users on roads in NSW	-	Yes	TTAMP
		Provisions of Road Rules 2014 not applicable to a person at the site of, and engaged in, roadworks	310	Yes	TTAMP

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
Roads Act 1993		Obtain a Road Occupancy Licence prior to commencement of traffic related works that require access to roads	S138	Yes	TTAMP
Hazard and risk					
Environmentally Hazardous Chemicals Act, 1985	Hazards and risks	Obtain a licence to undertake prescribed activities involving environmentally hazardous chemicals or declared chemical wastes.	S28	Yes	Section 4.3 Incident Response and Emergency Plan
Dangerous Goods (Road and Rail Transport) Act 2008	Hazards and risks	Ensure that dangerous goods are transported in a safe manner.	S9	Yes	Section 4.3 Incident Response and Emergency Plan
Pesticides Act 1999	Hazards and risks	Use pesticides in an environmentally sensitive manner. Do not use an unregistered pesticide without a permit. Read the label or permit for the pesticide. Use registered pesticides in accordance with instructions on the label. Do not use any restricted pesticide unless authorised by a certificate of competency or a pesticide control order under the Act. Compliance with pesticide codes of practice is required.	S12 S13 S14 S15 S17	Yes	FFMP
Incident response					
Protection of the Environment	Notification of pollution incidents	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	S148	Yes	Section 3.8

Act	Activity / aspect	Requirement	Reference	Division 5.2 applicability	Relevant section of CEMP or supporting documentation
Operations Act 1997	Incident response	Requires the holder of an EPL to prepare a pollution incident response management plan (PIRMP)	S153A-F	Yes	Section 3.8
	Control equipment	Properly and efficiently maintain and operate any installed pollution control equipment (including monitoring devices)	S167	Yes	AQOMP
Local Government Act 1993	Fire related incident	In the event of a fire related incident, the Project will comply with the requirements of the Act	N/A	Yes	Section 4.5
Rural Fires Act 1997			N/A	Yes	

Environmental Management Plan Guideline for Infrastructure Projects (DPIE, 2020)

Requirement	Plan reference	Yes/No/Not applicable
Document preparation and endorsement		
Has the EMP been prepared in consultation with all relevant stakeholders as per the requirements of the conditions of consent? (Section 4.1)	Section 3.7	Yes
Have the views of the relevant stakeholders been taken into consideration? Have appropriate amendments been made to the EMP and does the EMP clearly identify the location of any changes? (Section 4.1)	Section 3.7	Yes
Has the EMP been internally approved by an authorised representative of the proponent or contractor? (Section 4.2)	Document control table	Yes
Version and content		
Does the EMP describe the proponent's Environmental Management System (EMS) (if any), and identify how the EMP relates to other documents required by the conditions of consent? (Section 3.5.1)	Section 1.5	Yes
Does the EMP include the required general content and version control information? (Section 3.1)	Document control table	Yes

Requirement	Plan reference	Yes/No/Not applicable
Does the EMP have an introduction that describes the project, scope of works, site location and any staging or timing considerations? (Section 3.2)	Section 1.4	Yes
Does the EMP reference the project description? (Section 3.3)	Section 1.4	Yes
Does the EMP reference a Community and Stakeholder Engagement Plan (or similar) or include community and stakeholder engagement actions (if required)? (Section 3.4)	Section 3.7	Yes
Have all other relevant approvals been identified? Has appropriate information been provided regarding how each approval is relevant? (Section 4)	Section 3.2.2	Yes
Has the environmental management structure and responsibilities been included? (Section 3.5.2)	Section 3.3	Yes
Does the EMP include processes for training of project personnel and identify how training and awareness needs will be identified? (Section 3.5.3)	Section 3.5	Yes
Does the EMP clearly identify the relevant legal and compliance requirements that relate to the EMP? (Section 3.5.3)	Annexure A1 Section 3.2.2	Yes
Does the EMP include all the conditions of consent to be addressed by the EMP and identify where in the EMP each requirement has been addressed? (Section 3.5.13)	Section 3.2.2	Yes
Have all relevant guidelines, policies and standards been identified, including details of how they are relevant? (Section 3.5)	Section 1.5	Yes
Is the process that will be adopted to identify and analyse the environmental risks included? (Section 3.5.5)	Section 3.2.1	Yes
Have all the environmental management measures in the EIA been directly reproduced into the EMP? (Section 3.5.7)	Sub-plans and procedures Appendix B-G	Yes
Have environmental management measures been written in committed language? (Section 3.5.7)	Sub-plans and procedures Appendix B-G	Yes
Have project environmental management measures, including hold points, been identified and included? (Section 3.5.6)	Sub-plans and procedures Appendix B-G	Yes
Are relevant details of environmental monitoring that will be carried out included? (Section 3.5.8)	Sub-plans and procedures Appendix B-G	Yes

Requirement	Plan reference	Yes/No/Not applicable
Have the components of any environmental monitoring programs been incorporated? (Section 3.5.8)	Section 3.9 Sub-plans and procedures Appendix B-G	Yes
Are environmental inspections included? (Section 3.5.9)	Section 3.9.1	Yes
Does the EMP document all relevant compliance monitoring and reporting requirements for the project? (Section 3.5.12 and 3.5.13)	Section 3.9	Yes
Does the EMP describe the types of plans or maps (such as environmental control maps) that will be used to assist with the management of environmental matters on site? (Section 3.5.10)	Section 3.2.4 Appendix A6	Yes
Does the EMP list environmental management documents? (Section 3.5.11)	Section 1.5	Yes
Is an auditing program referenced? (Section 3.5.13)	Section 3.9.3	Yes
Does the EMP include the incident notification and reporting protocols that comply with the relevant conditions of consent? (Section 3.5.15)	Section 3.8	Yes
Does the EMP identify the project role/position that is responsible for deciding whether an occurrence is an incident? (Section 3.5.15)	Section 3.3.1	Yes
Does the EMP describe a corrective and preventative action process that addresses the requirements? (Section 3.5.16)	Section 3.2	Yes
Does the EMP include details of a review and revision process that complies with the requirements? (Section 3.6)	Section 3.13	Yes

Appendix A2 Environmental aspects and impacts register

Appendix A2

Aspects and Impacts Register

Western Harbour Tunnel Stage 3A

June 2022

This Environmental Aspects and Impacts Register has been prepared to supplement the Environmental Risk Analysis conducted as part of the Environmental Impact Statement (EIS).

The identification of significant construction activities and associated impacts that could eventuate during construction of the Project is central to the selection of appropriate environmental safeguards.

The risk management process involved an assessment of all specific project activities/aspects in or near environmentally sensitive areas and resulted in the development of a list of environmental risks (effects and impacts) and a corresponding risk mitigation strategy and risk ranking. Each environmental risk was categorised, based on the following:

- The environmental aspect
- Relative scale of the potential impact
- Type of potential impact
- Likelihood of occurrence.

The identification of risks included a review of the proposed works, the CoA, REMM, and review of the environmental risks identified by the EIS and subsequent Submissions Report.

The following risk assessment process has been implemented, together with a review of proposed activities and known risks based on past project experience.

As outlined above, a risk workshop was held on 30th May 2022. A register of those in attendance at the workshop is as follows:

Name	Organisation
Annabelle Tungol	AQUAS
Gillian Lehn	AQUAS
Adam Noonan	Transport for NSW
Mark Russel	Transport for NSW
Adrian Broger	John Holland CPB JV
Charles Scarf	John Holland CPB JV
Chris Blyth	John Holland CPB JV
Isabel Wong	John Holland CPB JV
Kathy Lloyd	John Holland CPB JV

Risk Assessment Process

The following tables outline the risk assessment process using 3 steps to identify the appropriate management measures required.

Table 1 is used to determine the likelihood that the aspect will have an impact on the environment.

Table 2 is used to determine the potential consequence rating of the risk identified

From these two tables, a risk rating can then be assigned by using Table 3 to determine how severe the potential impact may be and what level of management each type of risk will require.

Table 1: Likelihood criteria

Score	Description		Percentage	Expected Frequency
5	**Almost Certain**	Common / Frequent Occurrence	Can be expected to occur 75% - 99%	More than 1 event per month
4	**Likely**	Is known to occur or “It has happened regularly”	Can quite commonly occur 50% - 75%	More than 1 event per year
3	**Possible**	Could occur or ”I’ve heard of it happening”	May occasionally occur 25% - 50%	1 event per 1 to 10 years
2	Unlikely	Not likely to occur very often	May infrequently occur 10% - 25%	1 event per 10 to 100 years
1	**Rare**	Conceivable but only in exceptional circumstances	May occur in exceptional circumstances 0% – 10%	Less than 1 event per 100 years

Table 2: Consequence criteria

Consequence Rating	1	2	3	4	5
	Negligible	Minor	Moderate	Major	Substantial
Safety and Health	First Aid Treatment (or No treatment)	Medical Treatment Injury	Lost Time Injury	Permanent Injury (Paraplegia, Amputation)	Fatality (Single or multiple)
Environment and Heritage	Small, contained localised impact / Low level repairable damage	Short lived, well contained environmental impact / Minor remedial action required	Medium term, contained impact / Significant remedial action required	Impacts extend off-site / external ecosystem. Considerable remediation required	Long Term irreversible damage / Long Term Remediation required
Plant Damage	Little or No Damage	Damage less than $15,000	Damage between $15,000 and $50,000	Damage between $50,000 and $100, 000	Damage greater than $100, 000
Reputation	Brief local negative media coverage.	Local negative media coverage. Site or project problem.	Regional/short negative media coverage. Loss of Client / project.	Sustained national negative media coverage. Loss of long term key client.	International negative media coverage. Loss of business from key sector.
Time	Delay / Business interruption <1% of program days	Delay / Business interruption between 1%-3% of program days	Delay / Business interruption between 4%-6% of program days	Delay / Business interruption between 7%-10% of program days	Delay / Business interruption >10% of program days
Cost	Additional cost to the business / project <1% revenue	Additional cost to the business / project between 1%-3% revenue	Additional cost to the business / project between 4%-6% of revenue	Additional cost to the business / project between 7%-10% of revenue	Additional cost to the business / project >10% of revenue

Table 3: Risk severity

	Consequence	Negligible	Minor	Moderate	Major	Substantial
Likelihood	**Rating**	**1**	**2**	**3**	**4**	**5**
Almost Certain	**5**	**5 (Low)**	**10 (Moderate)**	**18 (Very High)**	**23 (Extreme)**	**25 (Extreme)**
Likely	**4**	**4 (Low)**	**9 (Moderate)**	**17 (Very High)**	**20 (Very High)**	**24 (Extreme)**
Possible	**3**	**3 (Low)**	**8 (Moderate)**	**13 (High)**	**19 (Very High)**	**22 (Very High)**
Unlikely	**2**	**2 (Low)**	**7 (Low)**	**12 (High)**	**15 (High)**	**21 (Very High)**
Rare	**1**	**1 (Low)**	**6 (Low)**	**11 (Moderate)**	**14 (High)**	**16 (High)**

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Table 4: Aspect and impact register

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
Air quality	Construction works for this stage are to be undertaken predominantly underground with limited surface-based activities. Stage 3A involves tunnel excavation and support, both of which will occur from the WHT cut and cover structure or underground. Accordingly, predicted air quality impacts are low and can be mitigated through the measures outlined below.					
	• Spoil handling underground • Stockpiling underground • Material haulage • Vehicle emissions • Handling of chemicals, waste and hazardous goods underground.	Generation of dust as a nuisance to the community, including complaints made to the Project	Likelihood – 3 Consequence – 2 **Risk – 8 (Moderate)**	• REMM AQ1: Standard construction air quality mitigation and management measures will be detailed in construction management documentation and implemented during construction, such as: a) Reasonable and feasible dust suppression and/or management measures, including the use of water carts, dust sweepers, sprinklers, dust screens, site exit controls (eg wheel washing systems and rumble grids), stabilisation of exposed areas or stockpiles, and surface treatments b) Selection of construction equipment and/or materials handling techniques that minimise the potential for dust generation c) Management measures to minimise dust generation during the transfer, handling and on site storage of spoil and construction materials (such as sand, aggregates or fine materials) (eg the covering of vehicle loads) d) Adjustment or management of dust generating activities during unfavourable weather conditions, where possible e) Minimisation of exposed areas during construction f) Management measures for managing unexpected odour generation likely to result in odour impacts at sensitive receivers in the vicinity during the disturbance, handling and storage of potentially odorous materials, including any contingency measures g) Internal project communication protocols to ensure dust-generating activities in the same area are coordinated and mitigated to manage cumulative dust impacts of the project h) Site inspections will be carried out to monitor compliance with implemented measures. • REMM AQ2: Dust and air quality complaints will be managed in accordance with the overarching complaints handling process for the project. Appropriate corrective actions; if required, will be taken to reduce emissions in a timely manner. • CoA E1: Measures must be implemented to minimise and manage the emission of dust, odour and other air pollutants during construction and operation • Other specific measures as outlined in the Project Environmental Protection Licence (EPL)	Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	Construction Environmental Management Plan (CEMP) Air Quality Management Plan and Air Quality Monitoring Program (AQMP + AQMtgP) Activity Method Statement (AMS) Soil and Surface Water Management Sub Plan and Surface Water Monitoring Program (SSWMP+SWMP) Environmental Protection Licence (EPL)
		Impacts on ambient air quality and human health from dust and plant emissions.	Likelihood – 3 Consequence – 2 **Risk – 8 (Moderate)**		Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	
		Health risks to neighbours and members of the public from release of gases and/or smoke	Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	
		Odour from hydrocarbons/acid sulphates/unknown contaminates	Likelihood – 1 Consequence – 1 Risk – 1 (Low)		Likelihood – 1 Consequence – 1 **Risk – 1 (Low)**	
Biodiversity	Construction works for this stage are to be undertaken predominantly underground with limited surface-based activities. Stage 3A involves tunnel excavation and support, both of which will occur from the WHT cut and cover structure or underground. Accordingly, flora and fauna impacts are not likely to occur given vegetation clearing is not anticipated; treated water discharge into Rozelle Bay will be in accordance with the EPL and planning approval requirements; there are no predicted Groundwater Dependent Ecosystem impacts in the Project area; no biodiversity impacts from wastewater treatment plant discharges are predicted.					

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
	• Vehicular movements • Operation of tunnel support ancillary facility underground • Tunnel excavation • Unforeseen vegetation clearing	Impact on native vegetation and threatened ecological communities.	Likelihood – 1 Consequence – 1 **Risk – 1 (Low)**	Where unexpected impacts to flora or fauna are encountered, the following measures will be generally implemented: • Treated water will be discharged in accordance with the requirements from the Project EPL and planning approval • REMM B1: Vegetation removal including the clearing of native vegetation and fauna habitat will be further minimised, where feasible and reasonable. • REMM B2: Vegetation removal will be carried out in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011). • REMM B3: The unexpected species find procedure included in Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) will be followed if threatened ecological communities, flora or fauna species, not assessed in the biodiversity assessment, are identified in the construction footprint. • REMM B4: Vegetation will be re-established within the project footprint where feasible, in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011). Where replacement trees cannot be accommodated within the project footprint, locations outside the project footprint will be identified for compensatory plantings. The replacement trees will consist of local native provenance species from the vegetation community that once occurred in the locality (rather than plant exotic or non-local native trees) where available and subject to the urban design and landscape plan. • REMM B5: Pre-clearing surveys for threatened flora species will be carried out in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011). • REMM B10: Fauna will be managed in accordance with Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011). • REMM B11: Pre-clearing surveys will be undertaken in accordance with Guide 1: Preclearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011). • REMM B14: Weed species will be managed in accordance with Guide 6: Weed management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011). • REMM B15: Pathogens will be managed in accordance with Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011). • REMM B18: The velocity of wastewater treatment plant discharge will be minimised to avoid scour impacts on the marine environment.	Likelihood – 1 Consequence – 1 **Risk – 1 (Low)**	Flora and Fauna Management Procedure CEMP EPL
		Impacts to fauna habitat, including aquatic and marine habitats	Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low**	
		Impacts on threatened fauna species and endangered populations.	Likelihood – 2 Consequence – 1 **Risk – 6 (Low)**		Likelihood – 1 Consequence – 1 **Risk – 1 (Low)**	
Aboriginal heritage	There are no registered AHIMS sites within 50 metres of the construction footprint for this stage of the WHT.					

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
		Direct impacts to terrestrial Aboriginal heritage sites.	Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	• REMM AH5: If at any time during construction of the project, any items of potential Aboriginal archaeological or cultural heritage conservation significance or human remains are discovered they will be managed in accordance with the Standard Management Procedure: Unexpected Heritage Items (Roads and Maritime, 2015). • REMM AH6: Cultural and historic heritage awareness training will be carried out for personnel engaged in work that may impact heritage items before commencing works for the project. • CoA E63: An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (including maritime discoveries) in accordance with any guidelines and standards prepared by Heritage NSW and submitted to the Planning Secretary for information before the commencement of construction. • CoA E64: The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction.	Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	CEMP Noise and Vibration Management Sub Plan and Noise and Vibration Monitoring Program (NVMP + NVMtgP) Construction Noise and Vibration Impact Statements (CNVIS) Heritage Management Procedure – this procedure includes Aboriginal and non-Aboriginal heritage Unexpected Heritage Finds and Human Remains Procedure – this procedure is incorporated into the Heritage Management Procedure

	• Unregistered aboriginal heritage site is discovered above or in close proximity to the tunnel alignment	Indirect impacts to terrestrial Aboriginal heritage sites due to vibration and settlement.	Likelihood – 2
			Consequence – 2
			Risk – 7 (Low)
				In the event that an unregistered aboriginal heritage site is discovered in close proximity to the tunnel alignment the following mitigations will be implemented:
				• REMM AH2: The following process will be carried out to confirm where vibration monitoring at terrestrial AHIMS sites will be required:
				  • Terrestrial Aboriginal site condition surveys will be completed using photogrammetry and 3D-capture techniques to determine which AHIMS sites are considered to be structurally unsound construction footprint)
				  • Where this determination cannot be made, the AHIMS site will be considered to be structurally unsound
				  • A screening of vibration intensive activities within 50 metres of structurally unsound sites will be carried out to identify activities that have the potential to exceed vibration levels of 2.5 millimetres per second
				  Sites identified as being both structurally unsound and having potential for exceedance in vibration levels of 2.5 millimetres per second will be identified as requiring vibration monitoring.
				• REMM AH3: Vibration monitoring will be carried out at AHIMS sites that have been identified as requiring monitoring in accordance with the process outlined in mitigation measure AH2. Where possible, works will be conducted in a manner to minimise vibration levels, to less than 2.5 millimetres per second at all structurally unsound AHIMS sites.
				• REMM AH4: If vibration monitoring identifies that vibration levels exceed 2.5 millimetres per second at AHIMS sites that have been identified as requiring monitoring, a site visit will be organised with a representative from Metro LALC to record any changes to the integrity of the site that may have resulted from construction vibration, and updated site cards must be prepared accordingly.
					Likelihood – 1Consequence – 2
					Risk – 6 (Low)	

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				Condition surveys may include further photogrammetry and 3D-capture techniques.		
Non-Aboriginal heritage	This stage of the WHT involves no surface-based excavation within or nearby heritage areas or listed items. There are listed heritage items above sections of the tunnel alignment, however, due to the depth of tunnel excavation and implementation of the measures below impacts are not anticipated.					
	• Tunnelling works • Use of other vibratory equipment.	Direct impacts to terrestrial heritage items, archaeology or heritage conservation areas	Likelihood – 1 Consequence – 3 **Risk – 11 (Moderate)**	• REMM NAH5: Archival recording will be carried out in accordance with the *Photographic Recording of Heritage Items Using Film or Digital Capture* guideline for areas/items subject to change within the following terrestrial items, in accordance with Appendix J (Technical working Paper: Non-Aboriginal heritage): A) Item 2: The Valley Heritage Conservation Area, Rozelle and Balmain Archival recording will be completed prior to any works that have the potential to impact upon the items and deposited with appropriate stakeholders as determined during detailed design (eg local councils). • REMM NAH10: If at any time during construction of the project, historical heritage materials, features and/or deposits are encountered during construction, the Roads and Maritime Services *Standard Management Procedure: Unexpected Heritage Items* (Roads and Maritime, 2015) will be followed. • REMM NAH11: In the event that construction of the project reveals possible human skeletal material (remains), Standard Management Procedures – Unexpected Heritage Items (Roads and Maritime, 2015) will be implemented. • REMM NAH12: Non-Aboriginal historical heritage awareness training will be provided for contractors prior to commencement of construction works to ensure understanding of potential heritage items that may be impacted during the project, and the procedure required to be carried out in the event of discovery of historical heritage materials, features or deposits, or the discovery of human remains. • REMM SG4: Pre-construction building/structure condition surveys will be offered and prepared for properties (and heritage assets) within the zone of influence of tunnel settlement (for example within the 5 millimetre predicted surface settlement contour and within 50 metres of surface works) and within the minimum working distances for cosmetic and structural damage due to vibration. The surveys will be carried out by a suitably qualified person prior to the commencement of the tunnelling and vibration-intensive activities in the vicinity with the potential to affect the building/structure. Within three (3) months of the completion of construction activities that have the potential to impact on the subject surface/subsurface structure, all property owners of buildings for which a preconstruction building condition survey was carried out will be offered a second building condition survey. Where an offer is accepted, post- construction building condition surveys will be carried out by a suitably qualified person. The results of the surveys will be documented in a post-construction building condition survey report for each building surveyed. Copies of building condition survey reports will be provided to the owners of the buildings surveyed within one (1)	Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	Heritage Management Procedure NVMP + NVMtgP Unexpected Heritage Finds and Human Remains Procedure
		Potential direct impacts to terrestrial heritage items due to the proximity of construction vehicles and equipment.	Likelihood – 1 Consequence – 3 **Risk – 11 (Moderate)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	
		Impact to undiscovered or undocumented heritage sites.	Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	
		Indirect impacts to terrestrial heritage items due to temporary visual, aesthetic and social impacts, or permanent settlement and vibration impacts	Likelihood – 2 Consequence – 3 **Risk – 12 (High)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				month of the survey being completed. Any property damage caused by the project will be rectified. • CoA E63: An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (including maritime discoveries) in accordance with any guidelines and standards prepared by Heritage NSW and submitted to the Planning Secretary for information before the commencement of construction. • CoA E64: The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction. • CoA E65: A detailed land use survey must be undertaken to confirm sensitive land user(s) (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration, construction ground-borne noise and operational noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction or operational noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Noise and Vibration CEMP Sub-plan required by Condition C4. • CoA E79: The Proponent must conduct vibration testing during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. • CoA E80: Advice from a heritage specialist must be sought on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage-listed structures. • CoA E102: A geotechnical model of representative geological and groundwater conditions must be prepared prior to excavation (that may pose a settlement risk) and tunnelling to identify geological structures and groundwater features. The model must include details of proposed excavations and tunnels, construction staging, and identify surface and sub-surface structures, including any specific attributes, which may be impacted by the CSSI. The Proponent must use this model to assess the cumulative predicted settlement, ground movement, stress redistribution and horizontal strain profiles caused by excavation and tunnelling, including groundwater drawdown and associated impacts, on adjacent surface and sub-surface structures. • CoA E103: The Proponent must undertake a review of surface and sub-surface structures at risk from damage to determine appropriate criteria to prevent damage, prior to excavation and tunnelling works that may pose a settlement risk. Criteria for surface and sub-surface structures which are not included in Condition E104 (Table 9) must be determined in consultation with the owner(s) of the surface and sub-surface structures prior to commencement of any excavation or tunnelling works		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				potentially affecting the surface and sub-surface structures. • CoA E104: In the case of buildings, roads, parking areas and parks, the appropriate criteria which govern the greatest risk of damage are to be selected from Table 9 unless the Proponent has determined more stringent criteria as a result of Condition E103. • CoA E105: Should the geotechnical model in Condition E102 identify exceedances of the relevant criteria established by Conditions E103 and E104, the Proponent must implement an instrumentation and monitoring program to measure settlement, distortion or strain as required. The Proponent must also identify and implement appropriate mitigation measures in consultation with the owner(s) of the relevant surface and sub-surface structures prior to excavation and tunnelling works to ensure where possible that the surface and sub-surface structures will not experience exceedances of the relevant criteria. The adopted criteria do not remove any responsibility from the Proponent for the protection of existing surface and sub-surface structures or for rectifying any damage to surface and subsurface structures resulting from the CSSI. • CoA E106: Where monitoring indicates groundwater drawdown or settlement is substantially different to predictions or in excess of the limits specified in this approval, the requirements of Conditions E102 to E105 inclusive must be undertaken again within three months. Model input parameters must be adjusted to calibrate the model so that predictions are better aligned with actual observations • CoA C14: The Groundwater Monitoring Program must include: (a) results from existing monitoring bores and from additional monitoring bores required following a review of the monitoring bore network, with the review based on actual results of existing monitoring and groundwater modelling findings in relation to the final tunnel detailed design; (b) daily measurement of the amount of water discharged from the water treatment plants; (c) water quality testing of the water discharged from treatment plants; (d) monitoring of groundwater levels in aquifers adjacent to the tunnel alignment; (e) monitoring of groundwater levels, electrical conductivity and temperature in key locations between saline water bodies and the tunnel (including beneath high risk sites for contamination); (f) measures to record or otherwise estimate and report groundwater inflows into the tunnels during their construction; (g) methods for providing the data collected under (a) and (b) to Sydney Water where discharges are directed to their assets; and		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				• (h) a method for providing the groundwater monitoring data to DPIE Water every three months during construction of the tunnels and portals.		
Noise and vibration	• General construction activities • Operation of ancillary facilities • Spoil transport, deliveries, general plant operation on public roads • Tunnel excavation	Ground-borne noise impacts during tunnelling	Likelihood – 5 Consequence – 2 **Risk – 10 (Moderate)**	• REMM CNV2: Detailed Construction Noise and Vibration Impact Statements will be carried out for all construction support sites and major construction works required for the project prior to the commencement of construction. The Statements will consider the proposed site layouts and noise and vibration generating activities that will take place during all major stages of the construction support site, assess predicted noise and vibration levels against the relevant management levels, and incorporate feasible and reasonable mitigation and management measures in accordance with the requirements of the Interim Construction Noise Guideline (DECC, 2009) and the Construction Noise and Vibration Guideline (Roads and Maritime, 2016a). • REMM CNV3: An out of hours works protocol will be developed for the construction of the Project. The protocol will include: a) Details of works required outside standard construction hours, including acceptable justifications for works outside of standard construction hours, what types of works are allowed to take place outside of construction hours, and justifications of why the activities are required outside standard construction hours b) Details of the assessment and approval process (internal and external) for works proposed outside standard construction hours c) Noise and vibration mitigation and management measures that are to be considered and implemented where appropriate to manage potential impacts associated with works outside standard construction hours d) The noise and vibration impact assessment processes that will be followed to identify potentially affected	Likelihood – 4 Consequence – 1 **Risk – 4 (Low)**	NVMP + NVMtgP CNVIS AMS Out of hours works (OOHW) protocol Negotiated agreements EPL Community Communications Strategy (CCS)
		Noise impacts on sensitive receivers during construction activities and operation of the ancillary facility	Likelihood – 5 Consequence – 2 **Risk – 10 (Moderate)**		Likelihood – 4 Consequence – 1 **Risk – 4 (Low)**	
		Construction road traffic noise impacts	Likelihood – 4 Consequence – 2 **Risk – 9 (Moderate)**		Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				receivers, clarify potential impacts and determine appropriate mitigation and management measures. The protocol will be prepared in consultation with the Department of Planning, Industry and Environment and the NSW Environment Protection Authority, and independently endorsed. The project protocol will be implemented during the duration of the construction of the project. • REMM CNV4: Construction noise and vibration impacts will be monitored periodically throughout all stages of the construction support sites to ensure that: a) Impacts are consistent with the noise and vibration levels detailed in the relevant Construction Noise and Vibration Impact Statements b) Noise and vibration impacts are being appropriately managed c) Mitigation measures are effective. • REMM CNV5: Where feasible and reasonable, unless compliance with the relevant traffic noise criteria can be achieved, or alternative arrangements have been agreed with affected receivers, construction vehicle movements will not occur on local roads beyond those required for direct access to construction sites. • REMM CNV6: Vibration generating activities will be managed through the establishment of minimum buffer distances to achieve screening levels. Where vibration levels are predicted to exceed the screening levels, a more detailed assessment of the impacted structure and attended vibration monitoring will be carried out to ensure vibration levels remain below appropriate limits for that structure. For heritage items, the more detailed assessment will specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed. Any damage caused by the project will be rectified. • REMM CNV7: Feasible and reasonable measures will be implemented to minimise ground-borne noise where exceedances are predicted. • REMM CNV10: Construction noise from concurrent and consecutive construction works will be managed to minimise cumulative construction noise impacts. Where feasible and reasonable the approaches that will be used include: a) Coordinating work between project construction sites and construction works to avoid cumulative noise impacts b) Consideration of additional at source or near source mitigation where construction noise levels may result in cumulative construction noise impacts, where programming is not practical to avoid cumulative noise impacts c) Community consultation throughout the project to gauge construction key noise impacts and issues and any unknown impacts from concurrent or consecutive sets of constructions works d) Incorporating additional noise mitigation and management measures with consideration of cumulative		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				and consecutive construction noise impacts based upon coordination between projects. • CoA E65: A detailed land use survey must be undertaken to confirm sensitive land user(s) (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration, construction ground-borne noise and operational noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction or operational noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Noise and Vibration CEMP Sub-plan required by Condition C4. • Construction hours as outlined in CoA E66, CoA E67 and CoA E68. • CoA E69: An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of work which is outside the hours defined in Conditions E66, and that are not subject to an EPL. The Protocol must be approved by the Planning Secretary before commencement of the Out-of-Hours Work. The Protocol must be prepared in consultation with the ER, AA and EPA. • CoA E70: Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration objectives: (a) construction 'Noise affected' NML established using the Interim Construction Noise Guideline (DECC, 2009); (b) vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure); (c) Australian Standard AS 2187.2 - 2006 "Explosives - Storage and Use - Use of Explosives"; (d) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and (e) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage). Any work identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the Noise and Vibration CEMP Sub-plan. • CoA E71: Mitigation measures must be applied when the following residential ground-borne noise levels are exceeded: (a) evening (6:00 pm to 10:00 pm) — internal LAeq(15 minute): 40 dB(A); and (b) night (10:00 pm to 7:00 am) — internal LAeq(15 minute): 35 dB(A). The mitigation measures must be outlined in the Noise and Vibration CEMP Sub-plan, including in any Out-of-Hours Work Protocol, required by Condition E69. • CoA E72: Noise generating work in the vicinity of potentially-affected community, religious, educational institutions, noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution. • CoA E73: At no time can noise generated by construction exceed the National Standard for exposure to noise in the occupational environment of an eight-hour (8hr) equivalent continuous A-weighted sound pressure level of LAeq,8h of 85 dB(A) for any employee working at a location near the CSSI. • CoA E74: Industry best practice construction methods must be implemented where reasonably practicable to ensure that noise levels are minimised. Practices must include, but are not limited to: (a) use of regularly serviced low sound power equipment; (b) early occupation and later release of road carriageways and construction sites; (c) scheduling of noisiest works before 11.00 pm Sunday to Thursday and before 12 midnight Friday and Saturday; (d) temporary noise barriers (including the arrangement of plant and equipment) around noisy equipment and activities such as rockhammering and concrete cutting; and (e) use of alternative construction and demolition techniques. • CoA E75: Construction Noise and Vibration Impact Statements (CNVIS) must be prepared for any work that may exceed the noise management levels, vibration criteria and/or ground-borne noise levels specified in Condition E70 and Condition E71 at any residence outside construction hours identified in Condition E66, or where receivers will be highly noise affected. The CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the works. A copy of the CNVIS must be provided to the AA and ER prior to the commencement of the associated works. The Planning Secretary may request a copy/ies of CNVIS. • CoA E76: Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before work that generates vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers are to be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the Noise and Vibration CEMP Sub-plan required by Condition C4 and the Community Communication Strategy required by Condition B1. • CoA E77: All surface-based tunnelling support activities that generate noise levels above the noise management levels in Condition E70 must occur within an acoustic shed. • CoA E78: All acoustic sheds must be designed and used so that activities carried out within them do not result in the exceedance of the NMLs.		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				• CoA E79: The Proponent must conduct vibration testing during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. • CoA E83: In order to undertake out-of-hours work outside the hours specified under Condition E66, the Proponent must identify appropriate respite periods for the out-of-hours work in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with: (a) a progressive schedule for periods no less than three months, of likely out-of-hours work; (b) a description of the potential work, location and duration of the out-of-hours work; (c) the noise characteristics and likely noise levels of the work; and (d) likely mitigation and management measures which aim to achieve the relevant noise management levels under Condition E70 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers). The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour work must be provided to the AA, ER, EPA and the Planning Secretary. • Other specific measures as outlined in the Project Environmental Protection Licence (EPL)		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
Hydrodynamics and water quality	• Storage of fuels and chemicals • Maintenance of plant and equipment, including servicing and refuelling • Ancillary facility operation (spoil haulage, WTP discharge)	Surface water quality impacts due to discharge of treated tunnel water.	Likelihood – 3 Consequence – 3 **Risk – 13 (High)**	• REMM WQ1: Erosion and sediment measures will be implemented at all work sites and surface road upgrades in accordance with the principles and requirements in Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004), Managing Urban Stormwater: Volume 2D Main Road Construction (NSW Department of Environment, Climate Change and Water, 2008) and relevant guidelines, procedures and specifications of Transport for NSW. A soil conservation specialist will be engaged by both Transport for NSW and the Contractor for the duration of construction of the project to provide advice regarding erosion and sediment control including review of Erosion and Sediment Control Plans (ESCPs). • REMM WQ2: Emergency spill procedures will be developed to avoid and manage accidental spillages of fuels, chemicals or fluids during construction. • REMM WQ3: Discharges from wastewater treatment plants during the construction phase will be required to meet the following discharge criteria: • The relevant physical and chemical stressors set out in of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000), and • The ANZG (2018) 90 per cent species protection levels for toxicants generally, with the exception of those toxicants known to bioaccumulate, which will be treated to meet the ANZG (2018) 95 per cent species protection levels, and • The draft ANZG default guideline values for iron (in fresh and marine water) and zinc (in marine water) which are likely to be finalised in October 2020. [Or an EPL is in place as permitted by CoA E208]. • REMM WQ7: The potential for scour and erosion of watercourse bed and banks will be considered during the design of new and augmented discharge outlets. Construction work activities within or next to the watercourses and drainage lines will be minimised as much as reasonably practicable to minimise disturbance of sediments in or near the waterway. • CoA E206: The CSSI must be designed, 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. • CoA E207: The Proponent must consider the Guidelines for controlled activities on waterfront land Riparian corridors (Department of Industry 2018) when carrying out work within 40 metres of a watercourse, including its bed. • CoA E208: Unless an EPL is in force in respect to the CSSI and that licence specifies alternative criteria, discharges from construction water treatment plants to surface waters must not exceed: (a) the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 (ANZG 2018) default	Likelihood – 2 Consequence – 2 **Risk – 7(Low)**	SSWMP + SWMP EPL
		Impacts on geomorphology, water availability and flows.	Likelihood – 1 Consequence – 3 **Risk – 11 (Moderate)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				guideline values for toxicants at the 90 per cent species protection level; (b) for physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000; and (c) for bioaccumulative and persistent toxicants, the ANZG 2018 values at a minimum of 95 per cent species protection level. Where the ANZG 2018 does not provide a default guideline value for a particular pollutant, the approaches set out in the ANZG 2018 for deriving guideline values, using interim guideline values and/or using other lines of evidence such as international scientific literature or water quality guidelines from other countries, must be used • CoA E210: If construction stage stormwater discharges are proposed, a water pollution impact assessment will be required to inform licensing consistent with section 45 of the POEO Act. Any such assessment must be prepared in consultation with the EPA and be consistent with the National Water Quality Guidelines, with a level of detail commensurate with the potential water pollution risk.		
Geology, soils and groundwater	• Tunnel excavation • General construction activities	Soil erosion and offsite sedimentation during construction	Likelihood – 1 Consequence – 3 **Risk – 11 (Moderate)**	• REMM SG1: Detailed predictive settlement models will be developed for areas of concern to guide tunnel design and construction methodology, including the selection of options to minimise settlement where required. • REMM SG3: An Independent Property Impact Assessment Panel, comprising geotechnical and engineering experts, will be established prior to the commencement of works to independently verify building condition survey reports, resolve any property damage disputes and establish ongoing settlement and vibration monitoring requirements. • REMM SG4: Pre-construction building/structure condition surveys will be offered and prepared for properties (and heritage assets) within the zone of influence of tunnel settlement (for example within the 5 millimetre predicted surface settlement contour and within 50 metres of surface works) and within the minimum working distances for cosmetic and structural damage due to vibration. The surveys will be carried out by a suitably qualified person prior to the commencement of the tunnelling and vibration-intensive activities in the vicinity with the potential to affect the building/structure. Within three (3) months of the completion of construction activities that have the potential to impact on the subject surface/subsurface structure, all property owners of buildings for which a preconstruction building condition survey was carried out will be offered a second building condition survey. Where an offer is accepted, post- construction building condition surveys will be carried out by a suitably qualified person. The results of the surveys will be documented in a post-construction building condition survey report for each building surveyed. Copies of building condition survey reports will be provided to the owners of the buildings surveyed within one (1) month of the survey being completed. Any property damage caused by the project will be rectified.	Likelihood – 1 Consequence – 2 **Risk – 7 (Low)**	SSWMP + SWMP Groundwater Management Plan and Groundwater Monitoring Program (GMP + GWMP) EPL
		Exposure of acid sulfate solid or soil salinity during construction	Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**		Likelihood – 1 Consequence – 1 **Risk – 2 (Low)**	
		Disturbance of contaminated land or groundwater contamination during construction works	Likelihood – 2 Consequence – 3 **Risk – 11 (Moderate)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	
		Groundwater drawdown impacts and tunnel inflows during construction	Likelihood – 4 Consequence – 3 **Risk – 17 (Very High)**		Likelihood – 3 Consequence – 2 **Risk – 8 (Moderate)**	
		Impacts to groundwater quality due to saltwater intrusion, mobilisation of contaminants or acidification during construction.	Likelihood – 2 Consequence – 3 **Risk – 12 (High)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				• REMM SG5: Erosion and Sediment measures will be implemented at all work sites in accordance with the principles and requirements in 'Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004) and Volume 2D (NSW Department of Environment, Climate Change, 2008), commonly referred to as the 'Blue Book'. • REMM SG6: Potentially contaminated areas directly affected by the project will be investigated and managed in accordance with the requirements of guidance endorsed under section 105 of the Contaminated Land Management Act 2008. • REMM SG7: Any soil/fill materials surplus to construction will be classified in accordance with the NSW EPA (2014a) Waste Classification Guidelines. • REMM SG8: Asbestos handling and management will be carried out in accordance with relevant legislation, codes of practice and Australian standards. • REMM SG11: The discovery of previously unidentified contaminated material will be managed in accordance with an unexpected contaminated lands discovery procedure, as outlined in the Guideline for the Management of Contamination (Roads and Maritime, 2013). • REMM SG14: Where groundwater inflows exceed 1L/sec/km during construction, feasible and reasonable measures to manage inflow will be applied. • REMM SG17: Outcomes of updated groundwater modelling will identify any requirements for further groundwater monitoring, and management of groundwater drawdown and associated impacts. • REMM SG18: As more information becomes available through ongoing groundwater monitoring, groundwater modelling will be updated. Construction and operational inflow predictions will be updated prior to construction, and operational inflow and impact predictions will be updated at the end of the construction period. • REMM SG19: Additional groundwater baseline monitoring will be carried out during the pre-construction period and will be considered in the development of the groundwater quality monitoring program described in management measure SG20 • REMM SG20: A groundwater quality monitoring program will be developed and implemented, taking into consideration the location of areas subject to medium and high risk of groundwater contamination during construction (and operation). Where relevant, modelling/mass balance analysis will be carried out to assess potential impacts on beneficial aquifer use and the likely quality of groundwater inflows. The groundwater monitoring program will be developed in consultation with the Department of Planning, Industry and Environment (Water). • REMM SG21: If the groundwater quality monitoring and associated analysis identifies potential impacts to beneficial aquifer use from the migration of contaminated groundwater, or the quality of groundwater tunnel inflows, feasible and reasonable management measures will be identified and implemented.		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				• REMM SG22: As more information becomes available through ongoing groundwater monitoring, groundwater modelling will be updated to refine the predictions documented in Appendix N (Technical working paper: Groundwater). Inflow predictions will be updated during further design development and operational inflow and impacts predictions will be updated at the end of the construction period. If refined predictions indicate that groundwater inflows and water table drawdown will be greater than the impacts documented in Appendix N (Technical working paper: Groundwater) feasible and reasonable measures will be implemented. • REMM SG23: Emergency Spill measures procedures will be developed to avoid and manage accidental spillages of fuels, chemicals, and fluids to minimise the risk of human health impacts and contamination of groundwater. • CoA E102: A geotechnical model of representative geological and groundwater conditions must be prepared prior to excavation (that may pose a settlement risk) and tunnelling to identify geological structures and groundwater features. The model must include details of proposed excavations and tunnels, construction staging, and identify surface and sub-surface structures, including any specific attributes, which may be impacted by the CSSI. The Proponent must use this model to assess the cumulative predicted settlement, ground movement, stress redistribution and horizontal strain profiles caused by excavation and tunnelling, including groundwater drawdown and associated impacts, on adjacent surface and sub-surface structures. • CoA E103: The Proponent must undertake a review of surface and sub-surface structures at risk from damage to determine appropriate criteria to prevent damage, prior to excavation and tunnelling works that may pose a settlement risk. Criteria for surface and sub-surface structures which are not included in Condition E104 (Table 9) must be determined in consultation with the owner(s) of the surface and sub-surface structures prior to commencement of any excavation or tunnelling works potentially affecting the surface and sub-surface structures. • CoA E105: Should the geotechnical model in Condition E102 identify exceedances of the relevant criteria established by Conditions E103 and E104, the Proponent must implement an instrumentation and monitoring program to measure settlement, distortion or strain as required. The Proponent must also identify and implement appropriate mitigation measures in consultation with the owner(s) of the relevant surface and sub-surface structures prior to excavation and tunnelling works to ensure where possible that the surface and sub-surface structures will not experience exceedances of the relevant criteria. The adopted criteria do not remove any responsibility from the Proponent for the protection of existing surface and sub-surface structures or for rectifying any damage to surface and subsurface structures resulting from the CSSI. • CoA E106: Where monitoring indicates groundwater drawdown or settlement is substantially different to predictions or in excess of the limits specified in this approval, the requirements of Conditions E102 to E105		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				inclusive must be undertaken again within three months. Model input parameters must be adjusted to calibrate the model so that predictions are better aligned with actual observations • CoA E107: The Proponent must offer pre-construction surveys and must undertake and prepare Preconstruction Condition Survey Reports where the offer is accepted, on the current condition of surface and sub-surface structures identified as at risk from settlement or vibration by the geotechnical model described in Condition E102 and the CNVIS required by Condition E75 or as directed by the Independent Property Impact Assessment Panel (IPIAP) established under Condition E111. The Pre-construction Condition Survey Reports must be prepared by a suitably qualified and experienced person(s) and must be provided to the owners of the surface and sub-surface structures for review prior to the commencement of potentially impacting works. • CoA E110: Where damage has been determined to occur as a result of the project, the Proponent must carry out rectification at its expense and to the reasonable requirements of the surface and sub-surface structure owner(s) within 12 months of completion of construction unless another timeframe is agreed with the owner of the affected surface or sub-surface structure. • CoA E114: Prior to the commencement of any work, erosion and sediment controls must be installed and maintained, as a minimum, in accordance with the publication Managing Urban Stormwater: Soils & Construction (4th edition, Landcom 2004) commonly referred to as the 'Blue Book'. • CoA E115: Prior to the commencement of any work that would result in the disturbance of moderate to high risk contaminated sites as identified in the documented listed in Condition A1, a Detailed Site Investigations must be undertaken by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand's "Certified Environmental Practitioner" (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia "Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. • CoA E123: An Unexpected Finds Procedure for Contamination must be prepared before the commencement of work and must be followed should unexpected contamination or asbestos (or suspected contamination) be excavated or otherwise discovered. The procedure must include details of who will be responsible for implementing the unexpected finds procedure and the roles and responsibilities of all parties involved. The procedure must be submitted to the Planning Secretary for information. • CoA E216: The Proponent must take measures to limit operational groundwater inflows into each tunnel to no greater than one litre per second across any given kilometre (1L/s/km). Compliance with this condition cannot be determined by averaging groundwater inflows across the length of the tunnel(s). • CoA E217: Make good provisions for groundwater users must be provided in the event of a material decline in water supply levels, quality or quantity from registered		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				existing bores associated with groundwater changes from either construction and/or ongoing operational dewatering caused by the CSSI. • CoA E218: Further modelling must be undertaken of groundwater drawdown, tunnel inflows and saline water migration (using particle tracking) prior to finalising the detailed design of the tunnels and undertaking any works that would impact on groundwater flows or levels. The modelling must be undertaken in consultation with DPIE Water and include the results and hydrogeological analyses of at least 12 continuous months of current baseline groundwater monitoring data. • CoA E219: The results of the modelling required by Condition E218 must be documented in a Groundwater Modelling Report. • CoA E220: The groundwater model must be updated once 24 months of groundwater monitoring data are available and the results of the updated modelling (assessed against all predicted outcomes of the Groundwater Modelling Report that accompanied the final detailed design of the tunnels) be provided to the Planning Secretary and DPIE Water in an updated Groundwater Modelling Report.		
Flooding	Flooding impacts are not anticipated due to the site configuration and upgrade works completed as part of the M4-M5 Link Rozelle Interchange project. Construction works and operation of ancillary sites predominantly occurs underground.					
	• Tunnel excavation	Impacts on construction activities due to flooding.	Likelihood – 1 Consequence – 3 **Risk – 11 (Moderate)**	• REMM F3: Entries to tunnel excavations, including cut and cover sections of tunnel, will be protected against frequent flooding by locating openings outside flood prone areas, and/or the provision of local bunding and flood protection barriers. • REMM F4: The flood standard adopted at each tunnel entry during construction will be WHT developed taking into consideration the duration of construction, the magnitude of inflows and the potential risks to personal safety and the project works. • REMM F5: Spoil stockpiles will be located in areas which are not subject to frequent inundation by floodwater, ideally outside the 10% AEP flood extent. The exact level of flood risk accepted at stockpile sites will depend on the duration of stockpiling operations, the type of material stored, the nature of the receiving drainage lines and also the extent to which that would impact flooding conditions in adjacent development. • REMM F7: Flood emergency management measures for construction and operation of the project will be incorporated into relevant environmental and/or safety management documentation. • REMM F8: Detailed construction planning will consider flood risk at construction sites and construction support sites. This will include: • A review of site layout and staging of construction activities to avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required • Identification of measures to not worsen flood impacts on the community and on other property and infrastructure during construction up to and including the 1% AEP flood event where reasonable and feasible	Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	SSWMP + SWMP
		Impacts on flood-prone areas and properties.	Likelihood – 1 Consequence – 4 **Risk – 14 (High)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				• Measures to mitigate alterations to local runoff conditions due to construction activities. • CoA E49: The CSSI must be designed and implemented to limit flooding characteristics to the following levels: (a) a maximum increase in inundation time of one hour in a 1 % AEP flood event; (b) a maximum increase of 10 mm in inundation at properties where floor levels are currently exceeded in a 1 % AEP flood event; (c) a maximum increase of 50 mm in inundation at properties where floor levels would not be exceeded in a 1 % AEP flood event; and (d) no inundation of floor levels which are currently not inundated in a 1% AEP flood event. Measures identified in the documents listed in Condition A1 to not worsen flood characteristics or other measures that achieve the same outcomes, must be incorporated into the detailed design of the CSSI. The incorporation of these measures must be reviewed and endorsed by a suitably qualified and experienced person in consultation with directly affected landowners, EESG, NSW State Emergency Service (SES) and relevant councils.		
Resource use and waste management	• Generation of waste during construction activities • General construction activities • Ancillary site operation • Haulage of waste and spoil	Impacts associated with unexpected waste volume or types.	Likelihood – 2 Consequence – 3 **Risk – 12 (High)**	• REMM WM1: Construction materials will be sourced in accordance with the project's Sustainability Framework and with a preference for Australian materials and prefabricated products with low embodied energy, where feasible and reasonable. • REMM WM2: The resource management hierarchy principles established under the Waste Avoidance and Recovery Act 2001 of avoid/reduce/reuse/ recycle/dispose will be applied. • REMM WM3: Wastes for land disposal will be classified in accordance with the NSW Environment Protection Authority Waste Classification Guidelines: Part 1 Classifying Waste. • REMM WM4: Wastes will be appropriately transported, stored and handled according to their waste classification and in a manner than prevents pollution of the surrounding environment. • REMM WM5: Opportunities for wastewater reuse and recycling, including recirculating water during tunnel excavation to use for dust suppression and offsite reuse, will be investigated and implemented where feasible and reasonable. • CoA E201: Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of. • CoA E202: The importation of waste and the storage, treatment, processing, reprocessing or disposal of such	Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	EPL Water Reuse Strategy

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be. • CoA E203: Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste. • CoA E205: All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes		
		Increased demand on electricity and water supply	Likelihood – 4 Consequence – 1 **Risk – 4 (Low)**	• Utilities connections for electricity and water that have been installed in the area for previous projects	Likelihood – 2 Consequence – 1 **Risk – 2 (Low)**	
		Impacts associated with poor waste management during construction	Likelihood – 3 Consequence – 3 **Risk – 13 (High)**	• REMM WM2: The resource management hierarchy principles established under the *Waste Avoidance and Recovery Act 2001* of avoid/reduce/reuse/recycle/dispose will be applied • REMM WM3: Wastes for land disposal will be classified in accordance with the NSW Environmental Protection Authority *Waste Classification Guidelines: part 1 Classifying Waste* • REMM WM4: Wastes will be appropriately transported, stored and handled according to their waste classification and in a manner that prevents pollution of the surrounding environment. • CoA E123: An Unexpected Finds Procedure for Contamination must be prepared before the commencement of work and must be followed should unexpected contamination or asbestos (or suspected contamination) be excavated or otherwise discovered. The procedure must include details of who will be responsible for implementing the unexpected finds procedure and the roles and responsibilities of all parties involved. The procedure must be submitted to the Planning Secretary for information. • CoA E124: The Unexpected Finds Procedure for Contamination must be implemented throughout construction. • CoA E201: Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and	Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	Unexpected Finds Procedure for Contamination CEMP AMS EPL

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				(c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of. • CoA E202: The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be. • CoA E203: Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste. • CoA E206: All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.		
Traffic and transport	• Haulage of material. • Import of material / plant / equipment. • Travel to / from site.	Local road, pedestrian and cyclist, and parking impacts	Likelihood – 3 Consequence – 3 **Risk – 13 (High)**	• REMM CTT1: A road dilapidation report will be prepared, in consultation with relevant councils and road owners, identifying existing conditions of local roads and mechanisms to repair damage to the road network caused by heavy vehicle movements associated with the project. • REMM CTT4: Ongoing consultation will be carried out with (as relevant to the location) Transport Coordination within Transport for NSW, the Port Authority of NSW, local councils, emergency services and bus operators to minimise traffic and transport impacts during construction. • REMM CTT5: The community will be notified in advance of proposed transport network changes, and maritime restrictions through appropriate media and other appropriate forms of community liaison. • REMM CTT9: Where provision of construction on-site parking cannot accommodate the full construction workforce, feasible and reasonable management measures that minimise impacts on parking on local roads will be identified and implemented. Depending on the location, management measures may include workforce shuttle buses and the use of public transport. E128: Access to all utilities and properties must be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier. • CoA E129: Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. • CoA E130: Access to the ancillary facility WHT3 construction support site at White Bay by construction vehicles (including light vehicles) must only be via The Crescent/City West Link and James Craig Road. No vehicle associated with the CSSI is permitted to access the site via Robert Street, Rozelle, unless required in the event of an emergency. • CoA E132: Local roads proposed to be used by heavy vehicles to directly access the construction boundary and ancillary facilities that are not shown in Figure 5-7 to 5-22	Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	Traffic, Transport and Access Management Plan (TTAMP) Construction Parking and Access Strategy (CPAS) Traffic Management Plan (TMP)

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				inclusive of Appendix F of the EIS must be approved by the Planning Secretary and included in the Traffic, Transport and Access Management CEMP Sub-plan. • CoA E135: The locations of all heavy vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one year following the completion of construction. • CoA E136: Before any local road is used by a heavy vehicle for the purposes of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the relevant council within three weeks of completion of the survey and no later than one month prior to the road being used by heavy vehicles associated with the CSSI. • CoA E138: Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternative route which complies with relevant standards, unless otherwise endorsed by an independent, appropriately qualified and experienced person, must be provided (including signposting) prior to the restriction or removal of the impacted access. • CoA E139: Vehicles (including light and heavy vehicles) associated with the CSSI must be managed to: (a) minimise parking on public roads; (b) minimise idling and queueing on state and regional roads; (c) not carry out marshalling of construction vehicles near sensitive land user(s); (d) not block or disrupt access across pedestrian or shared user paths at any time; and (e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the Traffic, Transport and Access Management CEMP Sub-plan. • CoA E140 A Construction Parking and Access Strategy must be prepared to identify and mitigate impacts resulting from on- and off-street parking changes during construction of the CSSI. The Strategy must include, but not necessarily be limited to: (a) achieving the requirements of Condition E139; (b) confirmation and timing of the removal of on- and off-street parking associated with construction of the CSSI; (c) parking surveys of all parking spaces to be removed or occupied by the CSSI workforce to determine current demand during peak, off-peak, school drop off and pickup, weekend periods and during special events; (d) consultation with affected stakeholders utilising existing on- and off-street parking stock which will be impacted as a result of construction; (e) assessment of the impacts to on- and off-street parking stock taking into consideration, occupation by the CSSI workforce, outcomes of consultation with affected stakeholders and considering the impacts of special events; (f) identification of mitigation measures to manage impacts to stakeholders as a result of on and off-street parking changes including, but not necessarily limited to, staged removal and replacement of parking, provision of alternative parking arrangements, managed staff		

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds or appropriate residential parking schemes; (g) where residential parking schemes already exist, off-road parking facilities must be provided for the CSSI workforce; (h) mechanisms for monitoring, over appropriate intervals, to determine the effectiveness of implemented mitigation measures; (i) details of shuttle bus service(s) to transport the CSSI workforce to construction sites from public transport hubs and off-site car parking facilities (where these are provided) and between construction sites; (j) provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective; and (k) provision of reporting of monitoring results to the Planning Secretary and relevant council(s) at three monthly intervals.		
	• Operation of ancillary facilities • Spoil transport, deliveries, general plant operation on public roads	Construction traffic impacts on road network	Likelihood – 4 Consequence – 3 **Risk – 17 (Very High)**	• REMM CTT1: A road dilapidation report will be prepared, in consultation with relevant councils and road owners, identifying existing conditions of local roads and mechanisms to repair damage to the road network caused by heavy vehicle movements associated with the project. • REMM CTT4: Ongoing consultation will be carried out with (as relevant to the location) Transport Coordination within Transport for NSW, the Port Authority of NSW, local councils, emergency services and bus operators to minimise traffic and transport impacts during construction. • REMM CTT5: The community will be notified in advance of proposed transport network changes, and maritime restrictions through appropriate media and other appropriate forms of community liaison. • REMM CTT6: Construction road traffic will be managed to minimise movements during peak periods. • CoA E130: Access to the ancillary facility WHT3 construction support site at White Bay by construction vehicles (including light vehicles) must only be via The Crescent/City West Link and James Craig Road. No vehicle associated with the CSSI is permitted to access the site via Robert Street, Rozelle, unless required in the event of an emergency. • CoA E132: Local roads proposed to be used by heavy vehicles to directly access the construction boundary and ancillary facilities that are not shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS must be approved by the Planning Secretary and included in the Traffic, Transport and Access Management CEMP Sub-plan. • CoA E135: The locations of all heavy vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one year following the completion of construction. • CoA E136: Before any local road is used by a heavy vehicle for the purposes of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the relevant council within three weeks of completion of the survey and	Likelihood – 3 Consequence – 2 **Risk – 8 (Moderate)**	

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				no later than one month prior to the road being used by heavy vehicles associated with the CSSI. CoA E139: Vehicles (including light and heavy vehicles) associated with the CSSI must be managed to: (a) minimise parking on public roads; (b) minimise idling and queueing on state and regional roads; (c) not carry out marshalling of construction vehicles near sensitive land user(s); (d) not block or disrupt access across pedestrian or shared user paths at any time; and (e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the Traffic, Transport and Access Management CEMP Sub-plan.		
Visual Amenity	• Operation of ancillary facilities	Landscape character and visual impacts from construction activities and construction support sites.	Likelihood – 3 Consequence – 1 **Risk – 3 (Low)**	• REMM V1: Construction support sites will be developed to minimise visual impacts for adjacent receivers where feasible and reasonable. • REMM V3: Site hoardings will be in neutral colours and designs, in proximity to open space, to help blend them into the surrounding environment. • REMM V4: Site hoarding and perimeter site areas will be maintained regularly to include the prompt removal of graffiti. • REMM V5: Site lighting will be designed to minimise glare issues and light spillage into adjoining properties and be generally consistent with the requirements of Australian Standards and Guidelines 4282 – 1997 2019 Control of the obtrusive effects of outdoor lighting. • REMM V6: Hoardings and temporary noise walls will be erected as early as possible within the site establishment phase to provide visual screening. • CoA E155: The CSSI must be constructed in a manner that minimises visual impacts of construction sites, including providing temporary landscaping and vegetative screening 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. • CoA E163: The Proponent must construct and operate the CSSI with the objective of minimising light spillage to surrounding properties. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces. Additionally, the Proponent must provide mitigation measures to manage any residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.	Likelihood – 2 Consequence – 1 **Risk – 2 (Low)**	CEMP
Hazards and Risks	• Operation of ancillary facilities • General Construction activities • Haulage of spoil	Transport and storage of hazardous substances and dangerous goods during construction.	Likelihood – 2 Consequence – 4 **Risk – 15 (High)**	• REMM HR1: Dangerous goods and hazardous materials will be stored in accordance with supplier's instructions and relevant legislation, Australian Standards, and applicable guidelines and may include bulk storage tanks, chemical storage cabinets/containers or impervious bunds. • REMM HR2: Dangerous goods and hazardous substances will be transported in accordance with relevant legislation and codes, including the Dangerous Goods (Road and Rail Transport) Act 2008, Road and Rail Transport (Dangerous Goods)(road) Regulation 1998 and the Australian Code for	Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	SSWMP + SWMP

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				the Transport of Dangerous Goods by Road and Rail (national Transport Commission, 2008).		
Human Health	• Operation of ancillary facilities • General construction activities	Human health impacts associated with air quality.	Likelihood – 3 Consequence – 2 **Risk – 8 (Moderate)**	• Air quality mitigation measures as identified above • Noise and vibration measures to manage construction impacts outlined above • Social impact mitigation measures as outlined under the 'socioeconomic' section below.	Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	CEMP Procedures (in CEMP and sub-plans)
		Human health impacts associated with noise and vibration from construction activities.	Likelihood – 3 Consequence – 2 **Risk – 8 (Moderate)**		Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	
		Human health impacts associated with social impacts.	Likelihood – 3 Consequence – 2 **Risk – 8 (Moderate)**		Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	
Land use and property	• Operation of ancillary facilities • Tunnel excavation	Discontent with substratum acquisition	Likelihood – 5 Consequence – 2 **Risk – 10 (Moderate)**	• REMM LP1: Land acquisition for the project will be carried out in accordance with the Land Acquisition (Just Terms Compensation) Act 1991 (NSW), the Roads and Maritime Services Land Acquisition Information Guide (Roads and Maritime, 2014) and Fact sheet: Property acquisition of subsurface lands (Roads and Maritime, 2015) and in accordance with the land acquisition reforms announced by the NSW Government in 2016. Transport for NSW will appoint a Personal Manager - Acquisition to help land owners and residents who may be affected by acquisition for the project. The Personal Manager -Acquisition will be in regular contact with these individuals to provide updates on the project and respond to questions and queries. Should acquisition for the project be confirmed for a particular property, the Personal Manager - Acquisition will work with the affected land owners and residents to offer assistance and support throughout the acquisition and relocation process. • REMM LP3: Where impacts to private property access is unavoidable during construction, property owners will be consulted in advance to develop appropriate alternative access arrangements.	Likelihood – 4 Consequence – 2 **Risk – 6 (Low)**	CEMP CCS
Socioeconomics	• Operation of ancillary facilities • General construction activities	Temporary impacts on social infrastructure and community values during construction	Likelihood – 3 Consequence – 2 **Risk – 8 (Moderate)**	• REMM SE3: Ongoing engagement will be carried out with managers of social infrastructure located near to surface construction works/construction support sites and sensitive social infrastructure above the tunnel alignment (for example, schools, places of worship, aged care, child care, health and medical facilities) about the timing and duration of construction works and management of potential impacts. • REMM SE4: Consultation for the project will be carried out in accordance with the Community Consultation	Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**	CEMP Procedures (in CEMP and sub-plans)
		Impacts to businesses during construction (passing trade, access, parking etc)	Likelihood – 2 Consequence – 2 **Risk – 7 (Low)**		Likelihood – 1 Consequence – 2 **Risk – 6 (Low)**	
		Access and connectivity impacts during construction.	Likelihood – 2 Consequence – 2		Likelihood – 1 Consequence – 2	

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
			Risk – 7 (Low)	Framework provided as Appendix E of the environmental impact statement. • REMM BU2: Specific consultation will be carried out with businesses potentially impacted during construction. Consultation will aim to identify specific potential construction impacts for individual businesses. • REMM BU3: Based on consultation with businesses, specific feasible and reasonable measures to maintain business access, visibility and parking and address other potential impacts as they arise through the construction process will be identified and implemented. A phone hotline that enables businesses to find out about the project or register any issues will be maintained. • CoA E100: The Proponent must identify the utilities and services (hereafter "services") potentially affected by construction to determine requirements for diversion, protection and/or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. The Proponent in consultation with service providers must ensure that disruption to services resulting from the Activity are avoided where practical and advised to customers.	**Risk – 6 (Low)**	
Cumulative impacts	• Operation of ancillary facilities • General construction activities	Construction noise and traffic associated with developments in proximity to construction sites including the Beaches Link and Gore Hill Freeway Connection project (if approved), theWestern Sydney Metro project, the M4-M5 Link project and other developments.	Likelihood – 5 Consequence – 2 **Risk – 21 (Very High)**	• REMM CI1: Considered and tailored multi-party engagement and cooperation will be established prior to construction to ensure all contributors to impacts are working together to minimise adverse impacts or enhance benefits of multiple projects occurring concurrently or consecutively. Haulage routes and road occupancy will be coordinated with other major transport projects via Transport Coordination within Transport for NSW. • REMM CI2: Multi-party engagement and cooperation will be established prior to construction to coordinate with the following projects to manage fatigue impacts where possible: a) M4-M5 Link b) Beaches Link and Gore Hill Freeway Connection c) Sydney Metro City & Southwest. • REMM CI3: Communication strategies for the project will be managed consistently across the NSW Government transport portfolio and in accordance with the Community Consultation Framework for the project, particularly with the Beaches Link and Gore Hill Freeway Connection project. • REMM CI4: Cumulative complaints fatigue will be managed as outlined in Chapter 7 (Stakeholder and community engagement). Complaint management tools for the project are outlined in Appendix E (Community consultation framework). • CoA E82: All work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must: (a) reschedule any work to provide respite to impacted noise sensitive land user(s) so that the respite is achieved in accordance with Condition E83; or	Likelihood – 3 Consequence – 1 **Risk – 11 (Moderate)**	CEMP Procedures (in CEMP and sub-plans) EPL

Issue	Construction activity/aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level following mitigation	Management Documents / Training Required
				(b) consider the provision of alternative respite or mitigation to impacted noise sensitive land user(s); and (c) provide documentary evidence to the AA in support of any decision made by the Proponent in relation to respite or mitigation. The consideration of respite must also include all other CSSI, SSI and SSD projects which may cause cumulative and/or consecutive impacts at receivers affected by the delivery of the CSSI.		

Appendix A3 JHCPB Environmental policy

Environment & Heritage Policy

Our commitment

JHCPB values the natural environment and cultural heritage and is committed to minimising adverse impacts and enhancing outcomes.

Our approach

JHCPB addresses its commitment to environmental protection and heritage conservation through the consistent implementation of an effective Environmental Management System.

Environment & Heritage Policy in practice

- Comply with relevant legal obligations, standards, customer requirements, and any obligations that JHCPB has adopted voluntarily
- Integrate environment and heritage considerations into business planning, strategy development and operational delivery
- Continually improve the Environmental Management System to enhance performance.
- Maintain third party certification of the Environmental Management System to ISO 14001 as independent verification of implementation and effectiveness
- Establish environment and heritage objectives and targets, and communicate performance regularly to engage our employees and other stakeholders
- Continually improve operational resource use efficiency and take all reasonable and practicable steps to prevent adverse environmental impacts, including pollution
- Promote a culture of shared responsibility for environment and heritage outcomes.
- Enhance the awareness, knowledge and skills of employees, contractors, and suppliers in relation to environment and heritage requirements and practices
- Drive organisational learning by investigating significant environment and heritage incidents, and communicating action taken or required to prevent recurrence
- Work with business partners, the local community, regulators, and other stakeholders to understand their perspective and achieve improved environment and heritage outcomes

Steven Keyser

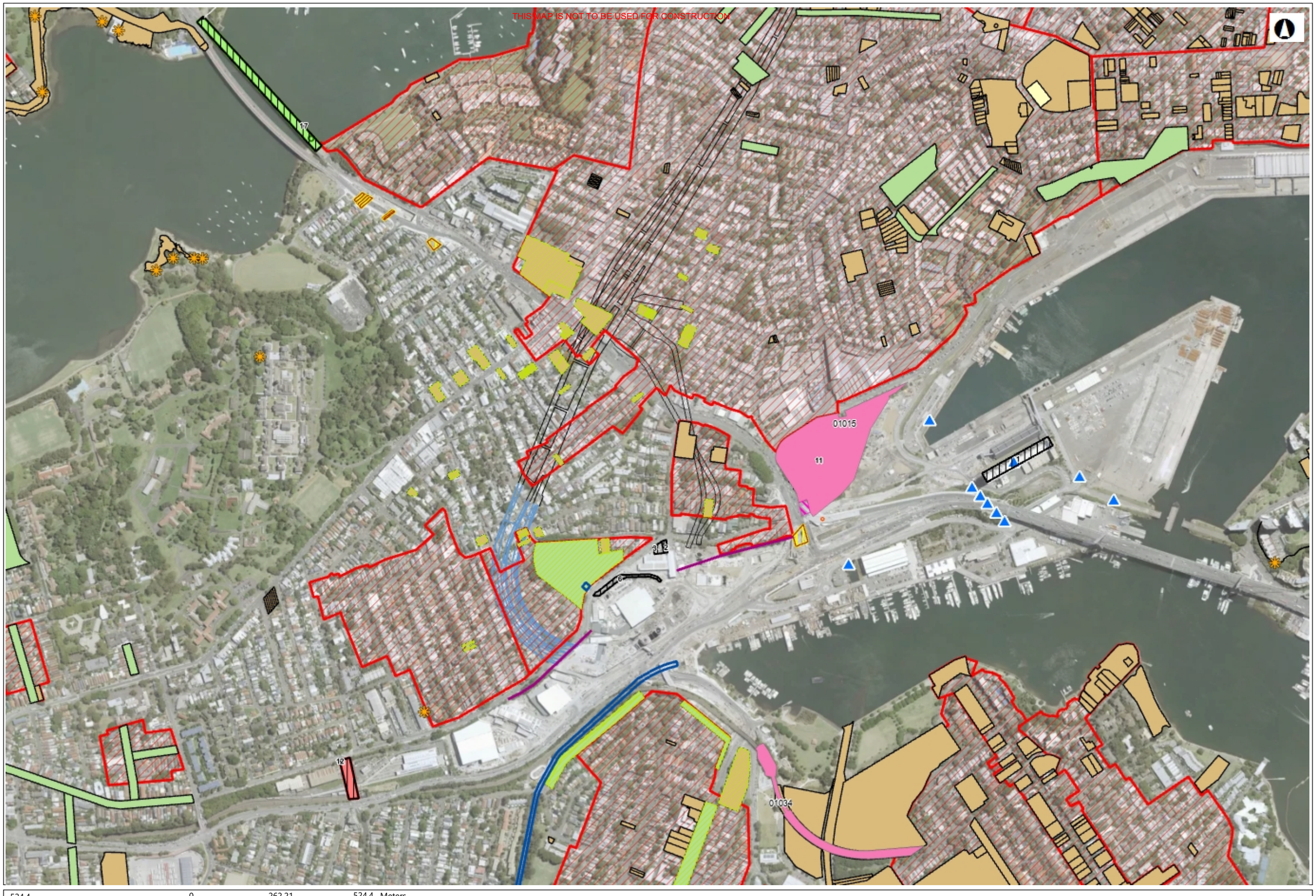
Project Director
Western Harbour Tunnel –
Southern Tunnelling Package

Appendix A4 Document register

Environmental management document	Document no.
JHCPB Environmental Policy	Forms part of the CEMP
John Holland's Environmental Management System (EMS)	N/A
WHT 3A Construction Environmental Management Plan (CEMP) (this Plan)	STW-JHC-PLN-00-EN-002-000001
Traffic and Transport and Access Management Plan (TTAMP)	STW-JHC-PLN-00-EN-002-000002
Noise and Vibration Management Plan (NVMP)	STW-JHC-PLN-00-EN-002-000004
Flora and Fauna Management Procedure (FFMP)	STW-JHC-PLN-00-EN-002-000003
Air Quality Management Plan (AQMP)	STW-JHC-PLN-00-EN-002-000008
Soil and Surface Water Management Plan (SSWMP)	STW-JHC-PLN-00-EN-002-000005
Groundwater Management Plan (GWMP)	STW-JHC-PLN-00-EN-002-000006
Heritage Management Procedure (HMP)	STW-JHC-PLN-00-EN-002-000007
Community Communication Strategy	WHTWFU CCS
Construction Parking and Access Strategy	Forms part of the TTAMP
Air Quality Monitoring Program	STW-JHC-PRG-00-AH-002-000001
Groundwater Monitoring Program	STW-JHC-PRG-00-WA-002-000002
Noise and Vibration Monitoring Program	STW-JHC-PRG-00-NV-002-000001
Out-of-Hours Work Protocol	Forms part of the NVMP
Surface Water Quality Monitoring Program	STW-JHC-PRG-00-WA-002-000001
Sustainability Strategy	To be provided
Unexpected Contamination Finds Procedure	Forms part of the SSWMP
Unexpected Heritage Finds Procedure	Forms part of the HMP
Water Reuse Strategy	To be provided

Appendix A5 Sensitive area plans

THIS MAP IS NOT TO BE USED FOR CONSTRUCTION



Legend

- Registered AHIMS site
- Potential Heritage Item
  - Item
  - Sandstone cutting
  - Southern Penstock
  - Former White Bay Hotel Archaeolog
- State Heritage Register - Point
- State Heritage Register - Item
- SREP 26 Heritage Register - It
- S170 Port Authority Item
- S170 RTA Item (point)
- S170 RTA Item (poly)
- S170 RailCorp item
- S170 Sydney Water
- Local Environmental Plan
  - Heritage Conservation Area
  - Heritage Conservation Area
  - Heritage Conservation Area
  - Heritage Conservation Area
- Heritage Local Environmental I
  - Heritage item
  - Landscape heritage item
- Heritage (LEP)
  - Conservation Area - General
  - Conservation Area - Aborigina
  - Conservation Area - Landscap
  - Item - General
  - Item - Aboriginal
  - Item - Archaeological
  - Item - Landscape

524.4 0 262.21 524.4 Meters

1: 10,323 @A3

THIS MAP IS NOT TO BE USED FOR CONSTRUCTION

65

01015

11

Legend

- Registered AHIMS site
- Potential Heritage Item
  - Item
  - Sandstone cutting
  - Southern Penstock
  - Former White Bay Hotel Archaeolog
- State Heritage Register - Point
- State Heritage Register - Item
- SREP 26 Heritage Register - It
- S170 Port Authority Item
- S170 RTA Item (point)
- S170 RTA Item (poly)
- S170 RailCorp item
- S170 Sydney Water
- Local Environmental Plan
  - Heritage Conservation Area
  - Heritage Conservation Area
  - Heritage Conservation Area
  - Heritage Conservation Area
- Heritage Local Environmental I
  - Heritage item
  - Landscape heritage item
- Heritage (LEP)
  - Conservation Area - General
  - Conservation Area - Aborigina
  - Conservation Area - Landscap
  - Item - General
  - Item - Aboriginal
  - Item - Archaeological
  - Item - Landscape
- GW Bore 109209

458.6 0 229.31 458.6 Meters

1: 9,028 @A3

Appendix A6 Environmental incident classification and reporting

Transport
Roads & Maritime
Services

Environmental Incident Classification and Reporting Procedure

September 2017

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About this release

Title	Environmental Incident Classification and Reporting Procedure

Approval		
Prepared by	Environment Manager Performance Improvement	Scott Machar
Reviewed by	Director Environment Operations	Sally Durham
Approved by	Director Environment	Michael Crowley

Document Control			
Version	5.0	**Release date**	September 2017
Publication Number	RMS 17.374	**ISBN**	978-1-925659-57-3

Contents

Acronyms and definitions	
Acronym	**Definition**
DE	(Roads and Maritime Services) Director Environment
DEO	(Roads and Maritime Services) Director Environment Operations
DPE	Department of Planning and Environment
Environmental harm	Any act that degrades or pollutes the environment
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1997*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
POEO Act	*Protection of the Environment Operations Act 1997*
REF	Review of Environmental Factors
Roads and Maritime	NSW Roads and Maritime Services
SEQC	(Roads and Maritime Services) Safety Environment and Quality Co-ordinator
SEQO	(Roads and Maritime Services) Safety Environment and Quality Officer

1. Introduction

1.1 Aim

The Environmental Incident Classification and Reporting Procedure (the Procedure) aims to ensure Roads and Maritime Services workers and contractors understand how to classify, respond to and report environmental incidents that occur as a result of Roads and Maritime managed activities.

1.2 Objectives

The objectives of the Procedure are to:

- Ensure all relevant Roads and Maritime workers, managers and contractors are made aware of environmental incidents promptly and can respond accordingly
- Ensure site workers understand the immediate environmental incident reporting requirements
- Ensure all workers understand reporting timeframes, including statutory requirements
- Ensure incidents are reported to enable monitoring, sharing of lessons learnt and response to emerging environmental incident trends
- Comply with statutory obligations to report certain environmental incidents to regulators and other relevant government agencies (see section 5.1).

1.3 Scope and coverage

This Procedure is applicable to all Roads and Maritime activities where environmental incidents may occur. This includes (but is not limited to):

- Temporary activities, such as preliminary investigations (e.g. geotechnical and environmental surveys) and the construction and maintenance of Roads and Maritime assets
- Activities at Roads and Maritime properties and facilities
- Vessels operated by Maritime division
- Activities undertaken by contractors on behalf of Roads and Maritime.

The requirements of this Procedure must be communicated to all Roads and Maritime workers and contractors (e.g. during inductions) who are undertaking activities where incidents may occur.

The Procedure is for internal reporting processes, except where incidents are identified that need to be notified to regulators, and other relevant authorities (see section 5.1).

The procedure does NOT cover environmental incidents caused by:

- Operational road and traffic activities of the general public (e.g. vehicle accidents, fires caused by discarded cigarette butts)
- Boating accidents (except those involving Roads and Maritime vessels)
- Dumping of materials by members of the public on Roads and Maritime roadsides or land (except where hazardous materials are unexpectedly found during road construction or maintenance activities). Illegal dumping should be reported to the NSW Environment Protection Authority (EPA)
- Marine oil and chemical spills covered by the National Plan for Maritime Environmental Emergencies (Australian Maritime Safety Authority, 2014).

2. Environmental incident classification

There are three categories of environmental incidents, as detailed in Table 2.

Table 2: Environmental incident classification

Category	Description	Examples	
Category 1	Potential breaches of legislation or failures of process that result in actual off-site environmental harm, or residual on-site environmental harm or Works undertaken outside approved areas, without required approval or without environmental assessment or Any Material Harm pollution incident as defined by Part 5.7 of the *Protection of the Environment Operations Act 1997* (POEO Act).	Pollution Incidents	Discharge of waters from site not in accordance with any approval requirements (e.g. discharge criteria in an Review of Environmental Factors (REF) safeguard or Environment Protection Licence (EPL) condition)
			Pollution, or potential pollution, of waters
			Unmanaged vehicle tracking of materials or emissions of dust, offensive odours or noise beyond the site boundary that are not managed in accordance with approval requirements and/or might impact on nearby land users
			Pollution incidents that threaten harm to the health or safety of people (e.g. odours)
			Unauthorised or illegal disposal or transport of waste
			A spill or other incident that causes pollution to land
		Conservation Breaches	Unauthorised harm or damage to native flora and fauna (terrestrial or aquatic/marine)
			Unauthorised dredging or reclamation works within a watercourse
			A fire caused by Roads and Maritime activities that travels beyond the boundary causing or potentially causing harm to the environment or community
		Heritage Breaches	Unauthorised harm to Aboriginal objects and Aboriginal places
			Unauthorised damage to any State or locally significant relic or Heritage item, or item listed on the Roads and Maritime Section 170 register

Table 2: Environmental incident classification			
Category	**Description**	**Examples**	
		Planning and compliance breaches	Failure to comply with the requirements of: • The *Environmental Planning and Assessment Act 1997* (EP&A Act), including exempt activities, Part 5 determinations and Part 5.1 approvals • An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval • An EPL • A CEMP or environmental work method statement • A permit from a regulator (e.g. under the *Fisheries Management Act 1994*)
Category 2	Failures of process or events that do not result in off-site environmental harm, or residual on-site environmental harm. These incidents may result in temporary on-site environmental harm that can be rectified to pre-existing conditions.	A procedural, administrative or technical breach of environmental requirements, including: • Failure to prepare or submit required documents, reports or other correspondence • Failure to comply with the requirements of: ○ The *Environmental Planning and Assessment Act 1997* (EP&A Act), including exempt activities, Part 5 determinations and Part 5.1 approvals ○ An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval ○ An EPL ○ A CEMP or environmental work method statement ○ A permit from a regulator (e.g. under the *Fisheries Management Act 1994*).	
		Spills and discharges that do not leave a site boundary and are cleaned up without residual on-site environmental harm, and the area of temporary impact can be restored to pre-existing conditions	
		A fire that is contained on site and does not cause or potentially cause adverse impact to the environment or community	
Reportable Event	An event or unexpected find that occurs outside the scope of reasonable environmental controls and mitigation measures	Sediment or site water travelling beyond a site boundary, and where it can be demonstrated that: • Erosion and sediment controls were installed and maintained in accordance with an erosion and sediment control plan, and • The cause of the incident was reasonably unforeseen or the weather (rain, wind etc) event exceeded the design capacity of controls. Note these events are considered to have occurred (and the response should commence in accordance with Section 3) when sediment or site water first travels beyond the site boundary (e.g. when an appropriately sized and maintained sediment basin commences overtopping)	
		An unexpected archaeological find that is being managed in accordance with the "Roads and Maritime	

Table 2: Environmental incident classification		
Category	**Description**	**Examples**
		Standard Management Procedure - Unexpected Archaeological Finds"
		An unexpected threatened species find that is being managed in accordance with the "Roads and Maritime Biodiversity Guidelines – unexpected threatened species finds procedure"
		An unexpected find of contaminated soils, asbestos or other potentially hazardous substances during construction or maintenance works. Note that once a particular contaminant is identified or found for the first time (either during project planning or construction phases) it is then reasonably expected to be found, so additional finds need not be reported in this category.
Regulatory Action	Formal regulatory action from an environmental regulator (that has not already been reported in conjunction with another incident)	Formal regulatory action from an environmental regulator includes, but is not limited to: • Penalty infringement notices (PINs) • Clean up notices • Prevention notices • Official cautions / warnings • EPA show cause notifications.

Note: For any incident where there is associated formal regulatory action from an environmental regulator, copies of this correspondence must be forwarded to envops@rms.nsw.gov.au in addition to the Environmental Incident Report (see section 4).

3. Environmental incident response

3.1 Considerations and steps for environmental incident response

The step-by-step response for Category 1 incidents, Category 2 incidents and Reportable Events is detailed in Table 3.1a (activities undertaken by contractors) and Table 3.1b (activities undertaken by Roads and Maritime Regional Maintenance). However, some key points apply throughout all stages of the response to any environmental incident:

- If in doubt, treat all incidents as Category 1 to ensure reporting timeframes can be met
- Strong consideration should be given to notifying:
    - Roads and Maritime Corporate Communications for any incidents that have potential for community or media attention (see section 4.4)
    - Roads and Maritime Work Health and Safety Branch for any incidents that involve actual or potential risks to worker health and safety (see section 4.4).
- The person responsible for operational management of the site/activity shall assume responsibility for the response to the incident and direct actions as necessary and in accordance with this Procedure
- A Roads and Maritime Environment Manager can consult with the Director Environment Operations (DEO) to reclassify the category of an incident where appropriate.

Any Regulatory Action received (that has not already been reported in conjunction with another incident) should be immediately forwarded to the envops@rms.nsw.gov.au mailbox, and followed by an immediate phone call to the relevant Roads and Maritime Environment Manager, who will immediately advise the DEO. Consideration should then be given as to whether an environmental incident has occurred (see section 2) that should be reported in accordance with this section.

Table 3.1a: Environmental incident response activities undertaken by contractors				
Step	**Action**	**Responsibility for completing action**	**Timeframe**	
			Category 1 Incidents	Category 2 Incidents / Reportable Events
1	Stop work in relevant area (if necessary) and take actions to prevent adverse impact to human health or the environment. Note human health and safety is the primary concern, and no action should be taken if it is not safe to do so.	Person who identifies incident	Immediate	Immediate
2	Advise the contractor site management team.	Person who identifies incident	Immediate	Immediate
3	Advise the Roads and Maritime project management team and the relevant Roads and Maritime Environment Manager.	Contractor	Immediate	Day of the incident
4	Consider if the incident is a pollution incident that constitutes Material Harm in accordance with Part 5.7 of the POEO Act. For Material Harm pollution incidents, notify relevant agencies (see section 5.2). Sites with an EPL should implement their Pollution Incident Response Management Plan.	Contractor	Immediate	Immediate
5	Advise DEO by phone. The DEO may request photographs and a brief summary of known information via email. The following Roads and Maritime managers should also be notified by phone as relevant: • Director Environment (Major Projects) • Director Environment (Motorways).	Roads and Maritime Environment Manager	Immediately following advice of the incident	N/A
6	Where relevant, notify incident to appropriate regulatory agency (see section 5.1). Note this does not refer to the requirement to notify Material Harm pollutions incidents (see Step 4).	Contractor	As required by legislation	As required by legislation
7	Complete the incident report form (see section 4.2), including sign-off from Roads and Maritime Project Manager, and submit to Roads and Maritime Environment Manager* (see sections 4.3 and 4.4).	Contractor	Within 3 business days of the incident	Within 3 business days of the incident
8	Sign and submit incident report form to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	On the day of receipt of the form	On the day of receipt of the form
9	For Material Harm pollution incidents, provide a written report to each relevant authority (see section 5.2).	Contractor	Within 7 days of the incident	N/A
10	Undertake incident investigation (level of investigation to be appropriate to the severity of the incident) to determine root cause and any necessary corrective actions. Summarise findings in 'Incident Lessons Learnt' template and submit to Environment Manager for review.	Contractor	Within 1 month of incident	N/A
11	Submit final Incident Lessons Learnt to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	Within 1 week of receipt	N/A
12	Consider the need for any required corrective actions to be addressed through a management system (e.g. corrective action request).	Roads and Maritime Environment Manager and project team	As appropriate	As appropriate

*Alternate workflow / signatory arrangements may be required for projects where a third party is involved (e.g. a delivery authority). These arrangements can be confirmed with the relevant Roads and Maritime Environment Manager.

Table 3.1b: Environmental incident response activities undertaken by Regional Maintenance (including contractors or RMCC on behalf of Regional Maintenance)

Step	Action	Responsibility for completing action	Timeframe	
			Category 1 Incidents	Category 2 Incidents / Reportable Events
1	Stop work in relevant area (if necessary) and take actions to prevent adverse impact to human health or the environment. Note human health and safety is the primary concern, and no action should be taken if it is not safe to do so.	Person who identifies incident	Immediate	Immediate
2	Advise the Roads and Maritime site management team and the relevant Roads and Maritime Environment Manager and Safety Environment Quality Officer (SEQO) / Safety Environment Quality Co-ordinator (SEQC).	Person who identifies incident	Immediate	Immediate
3	Advise DEO by phone. The DEO may request photographs and a brief summary of known information via email. The relevant Regional Maintenance Manager must also be notified.	Environment Manager	Immediate	N/A
4	Consider if the incident is a pollution incident that constitutes Material Harm in accordance with Part 5.7 of the POEO Act. For Material Harm pollution incidents, notify relevant agencies (see section 5.2). Sites with an EPL should implement their Pollution Incident Response Management Plan.	DEO	Immediately following advice of the incident	N/A
5	Where relevant, notify incident to appropriate regulatory agency (see section 5.1). Note this does not refer to the requirement to notify Material Harm pollutions incidents (see Step 4).	Environment Manager	As required by legislation	As required by legislation
6	Complete the incident report form (see section 4.2), including sign-off from Roads and Maritime Project Manager, and submit to SEQC (see section 4.3).	Relevant Roads and Maritime site representative	Within 3 business days of the incident	Within 3 business days of the incident
7	SEQC to sign and submit incident report form to relevant Environment Manager (see section 4.4).	SEQC	On the day of receipt of the form	On the day of receipt of the form
8	Sign and submit incident report form to envops@rms.nsw.gov.au.	Environment Manager	On the day of receipt of the form	On the day of receipt of the form
9	For Material Harm pollution incidents, provide a written report to each relevant authority (see section 5.2).	DEO	Within 7 days of the incident	N/A
10	Undertake incident investigation (level of investigation to be appropriate to the severity of the incident) to determine root cause and any necessary corrective actions. Summarise findings in 'Incident Lessons Learnt' template and submit both to Environment Manager for review. Consider the need for any required corrective actions to be addressed through a management system (e.g. corrective action request).	SEQC	Within 1 month of incident	N/A
11	Submit final Incident Lessons Learnt to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	Within 1 week of receipt	N/A

Copies of formal regulatory action from an environmental regulator (that has not already been reported in conjunction with another incident) must be forwarded to the relevant Roads and Maritime Environment Manager (and SEQC/SEQO for Regional Maintenance projects) and envops@rms.nsw.gov.au immediately upon receipt.

3.2 Critical incidents

Some Category 1 incidents require escalation so relevant members of the Roads and Maritime Executive are aware of the incident and ready to respond as necessary. Category 1 incidents will be deemed 'Critical Incidents' for escalation to the Executive when they have the potential for:

- Regulatory action (e.g. EPA Penalty Infringement Notice) and/or
- Reputational damage (e.g. media coverage) and/or
- Significant environmental harm.

Guiding factors that will be considered when determining whether there has been 'significant' environmental harm include:

- When there has been actual or potential harm to the health or safety of people or to the environment that is not trivial
- Actions required to prevent, mitigate or make good the actual or potential environmental harm are likely to exceed $10,000

When a potential 'Critical Incident' is reported, the DEO will immediately brief the Director Environment (DE) who will make a determination on whether it will be considered a 'Critical Incident'. The DE will then brief the Roads and Maritime Chief Executive and relevant Executive Director, as well as any other members of the Executive as appropriate. When the DE cannot be contacted, the DEO will make the determination and make the relevant Executive briefings.

4. Environmental incident reporting

4.1 Environmental incident report form

The Environmental Incident Report Form should be completed for Category 1 incidents, Category 2 incidents and Reportable Events, and is available on the Roads and Maritime website.

4.2 Completing the incident report form

All parts of the Incident Report Form must be completed in accordance with this procedure and following the instructions within the form. The Form (and any subsequent reports) must only include factual information. Speculation about the causes and outcomes of incidents are not to be included.

The Form must be signed by the following:

Signatory	Reason
The person making the report	The person witnessed the incident or has the most knowledge of the incident, and can provide sufficient factual information.
The Roads and Maritime Project Manager	To ensure all relevant Roads and Maritime parties can be made aware of the incident, and appropriate resources can be allocated and/or approved to respond to the incident. This also ensures the project management team are aware of any environmental performance trends if multiple incidents occur.
Safety Environment and Quality Co-ordinator (Roads and Maritime Regional Maintenance only)	To ensure Regional Maintenance management system staff are aware of the incident, and any necessary management system changes can be made once corrective actions and lessons learnt are finalised.
The relevant Roads and Maritime Environment Manager	Concurrence that the incident is adequately described, and the immediate actions and corrective actions are appropriate.

As noted in Table 3.1a, alternate signatory arrangements may be required for projects where a third party is involved (e.g. a delivery authority). These arrangements can be confirmed with the relevant Roads and Maritime Environment Manager.

4.3 Submitting the incident report form

All Incident Report Forms must be populated, signed and submitted electronically (never printed / signed / scanned etc.) to enable Roads and Maritime to electronically capture the information entered in the form.

Completed Incident Report Forms should be submitted by the Roads and Maritime Environment Manager to the Environment Operations mailbox:

- envops@rms.nsw.gov.au

It is essential that a clear and consistent subject line convention is used to allow tracking of correspondence about each incident. All emails about an incident between all parties should structure the subject line as follows:

- Category X - project name / incident location - date
- For example, Category 1 – Main Road Upgrade – dd/mm/yy.

Where information cannot be gathered within the timeframes set out in this Procedure, the incident form should be submitted to the mailbox as a ‘draft’, whether or not the information contained is fully completed.

- For example, Category 1 – Main Road Upgrade – dd/mm/yy (DRAFT).

The Environment Manager should then request further information from the person making the report, and the final report should be submitted within the next 24 hours.

4.4 Roads and Maritime contacts

The relevant Environment Manager for each region and Project Office is the first point of contact for enquiries relating to environmental incidents. Current contacts for all Roads and Maritime Environment Managers can be found on the Roads and Maritime website.

Environment Managers can also provide contact details for other relevant contacts during an incident, such as Communications or Work, Health and Safety.

The DEO oversees the application of this Procedure, and can be contacted in the absence of the relevant Environment Manager for Category 1 incidents:

- Phone - (02) 8843 3048

5. Regulatory agency notification

5.1 Notification of Material Harm pollution incidents

5.1.1 Definition of Material Harm pollution incidents

Under Part 5.7 of the POEO Act, there is a duty to immediately notify (i.e. promptly and without delay) each relevant authority (see section 5.1.3) of a pollution incident where material harm to the environment is caused or threatened.

The POEO Act states that a pollution incident should be considered Material Harm if:

> *"(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
>
> *(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000"*

Material Harm only relates to pollution incidents. Other environmental incidents, such as conservation, heritage and planning breaches, are not included in the definition of a pollution incident.

5.1.2 Determining if an incident should be considered Material Harm

As soon as a person becomes aware of a pollution incident that has the potential to cause Material Harm, the Category 1 incident response should be followed (see Table 3.1a and Table 3.1b above). The determination on whether a pollution incident should be considered Material Harm should be made in accordance with Table 5.1.2.

Table 5.1.2: Determination of Material Harm pollution incidents

Project delivery	Material Harm determination
Activities undertaken by Regional Maintenance	The DEO should make the determination (and any associated notifications) on whether a pollution incident should be considered Material Harm. If the DEO is not available, the relevant Environment Manager should seek advice from other Roads and Maritime Environment Branch Directors, or make the material harm determination themselves. If no assistance can be obtained and it is suspected that a pollution incident should be considered Material Harm, the project should notify the relevant authorities in accordance with Table 5.1.3a or Table 5.1.3b (as relevant).
Activities undertaken by contractors	The contractor project team should make the determination (and any associated notifications) on whether a pollution incident should be considered Material Harm. The relevant Roads and Maritime Environment Manager or Environment Branch Director may contact the DEO to assist in making an assessment of the incident, to aid the contractor in determining if the pollution incident should be considered Material Harm. Where Roads and Maritime believes a pollution incident should be considered Material Harm but the contractor disagrees, Roads and Maritime is required by law to notify EPA and other relevant authorities. In this instance the DEO or DE would make a determination on whether the incident should be notified by Roads and Maritime as Material Harm. Roads and Maritime would provide details of any notifications made to the contractor.

Even if only limited information is available for a pollution incident being considered Material Harm, each relevant authority must be immediately notified with the information available and updates provided as soon as further relevant information becomes available.

In circumstances where there is doubt about the need to notify a pollution incident as Material Harm, Roads and Maritime and its contractors should always err on the side of notification.

When in doubt, communicate!

Note: Roads and Maritime is not responsible for notifying a Material Harm pollution incident caused by a traffic or vehicle accident where notification has already occurred by someone at the scene. However, if it is believed notification has not been undertaken, Roads and Maritime should undertake notification in accordance with section 5.1.3. Environment Branch can provide advice in this instance (see section 4.4).

5.1.3 Relevant authorities to notify

The relevant authorities that must be notified for a Material Harm pollution incident are listed in tables 5.1.3a and 5.1.3b below. It is important to note the order of notification and phone numbers to use can vary depending on the nature of the pollution incident, as detailed in the two tables.

All of the authorities listed (whether considered relevant or not) must be contacted for each Material Harm pollution incident to satisfy POEO Act requirements. Serious penalties apply to both individuals and corporations for failing to notify Material Harm pollution incidents:

- Maximum penalty for individuals - $500,000
- Maximum penalty for corporations - $2,000,000.

Table 5.1.3a: Authorities to notify for Material Harm pollution incidents that present an immediate threat to human health or property

Order	Authority	Contact Number
1	Fire and Rescue NSW	000
2	NSW EPA environment line	131 555
3	Ministry of Health (via the local Public Health Unit)*	Contact 1300 066 055 to be directed to the local Public Health Unit, or visit the NSW Health Website
4	SafeWork NSW	131 050
5	The Appropriate Regulatory Authority*, being either: • Local council • Western Lands Commissioner for the Western Division (except any part of the Western Division within the area of a local council).	Local council - contact Office of Local Government on 4428 4100, or visit the Office of Local Government website Western Lands Commissioner – phone 6883 5400

Table 5.1.3b: Authorities to notify for Material Harm pollution incidents that do NOT present an immediate threat to human health or property

Order	Authority	Contact Number
1	NSW EPA environment line	131 555
2	The Appropriate Regulatory Authority*, being either: • Local council • Western Lands Commissioner for the Western Division (except any part of the Western Division within the area of a local council).	Local council - contact Office of Local Government on 4428 4100, or visit the Office of Local Government website Western Lands Commissioner – phone 6883 5400
3	Ministry of Health (via the local Public Health Unit)*	Contact 1300 066 055 to be directed to the local Public Health Unit, or visit the NSW Health Website

4	SafeWork NSW	131 050
5	Fire and Rescue NSW	1300 729 579

* The appropriate contact for the Appropriate Regulatory Authority and Public Health Unit will vary according to the geographic location of the activity. These contact numbers should be found in advance and stored for immediate access (e.g. in a project's Construction Environmental Management Plan and/or on site notice boards) should a pollution incident need to be notified.

5.1.4 The relevant information to provide

It is important to avoid speculation on origin, causes or outcomes of a pollution incident in discussions with the authorities. Section 150 of the POEO Act provides the information that needs to be notified, being:

a) The time, date, nature, duration and location of the incident

b) The location of the place where pollution is occurring or is likely to occur, the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known

c) The circumstances in which the incident occurred (including the cause of the incident, if known)

d) The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known

e) Other information prescribed by the regulations.

Only known information should be provided when notifying of a Material Harm pollution incident. If further information becomes known after the initial notification, that information must immediately be notified to all authorities in accordance with Section 150 (see above). The immediate verbal notification is to be followed by written notification to each relevant authority within seven days of the date on which the incident occurred.

Complying with these notification requirements does not remove the need to comply with any other legislative requirements for incident notification (e.g. requirements under EPL conditions or the Work Health and Safety Act 2011).

5.2 Summary of other regulatory agency notification requirements

Specific statutory requirements relating to the notification of environmental incidents to relevant regulatory agencies are summarised in Table 5.2. Additional requirements adopted by Roads and Maritime are indicated in *italics*. Any notification to regulatory agencies should be indicated in the Environmental Incident Report Form to confirm that any required notifications have been initiated.

Table 5.2: Regulatory agency notification requirements

Legislation / issue	Regulating authority	Section / requirement
Commonwealth Aboriginal and Torres Strait Islanders Heritage Protection Act 1984	Department of the Environment and Energy	Section 20 – requirement to notify the Minister of the discovery of Aboriginal remains.
Contaminated Land Management Act 1997	EPA	Section 60 – requirement to notify if Roads and Maritime activities have contaminated land or if Roads and Maritime owns land that has been contaminated.
Heritage Act 1977	Office of Environment and Heritage	Section 146 – requirement to notify the Heritage Council of the location of the relic once a relic has been discovered or located.
National Parks and Wildlife Act 1974	Office of Environment and Heritage	Section 89A – requirement to notify the location of an Aboriginal object that is the property of the Crown.
Protection of the Environment Operations Act 1997	EPA and other relevant authorities	Section 148 – requirement to immediately notify pollution incidents that cause or threaten Material Harm to the environment (see Section 5.1)

	EPA	*Pro-active reporting to the local EPA officer of offsite pollution incidents that occur as a result of Roads and Maritime activities is encouraged as soon as practicable after the pollution incident occurs.*
Rural Fires Act 1997	NSW Rural Fire Service	Section 64 – requirement to notify an appropriate fire officer of the inability to extinguish any fire burning during a bush fire danger period applicable to the land.
Breach of Conditions of Approval (projects approved under Part 5.1 of the EP&A Act)	Department of Planning and Environment (DPE)	DPE should be notified by the project proponent when there has been a breach of a Condition of Approval (CoA). There may also be other notification requirements included in the CoA.
Water supply catchment areas	*Local water supply authority*	*If an environmental incident has the potential for unapproved impacts on a drinking water supply, the relevant water supply authority must be advised.*

5.3 Requests for written reports from regulatory authorities (activities delivered internally by Roads and Maritime)

Should Roads and Maritime directly receive a request from a regulatory authority for a written report regarding an environmental incident, Environment Branch and Legal Branch must be immediately contacted for advice. No further correspondence (including email) about the incident should be distributed either internally or externally until advice is received. Environment Branch will coordinate with Legal Branch to:

- Assist in the investigation of the incident
- Provide legal advice to the project
- Co-ordinate the preparation of the written response to the regulatory authority.

Appendix B Traffic, Transport and Access Management Sub-plan

Appendix C Noise and Vibration Management Plan

Appendix D Flora and Fauna Management Procedure

Appendix D

Fauna and Flora Management Procedure

STW-JHC-PLN-00-EN-002-000003

Western Harbour Tunnel – Stage 3A

Document status

Revision	Date	Prepared by	Reviewed by	Remarks
A	01/05/2022	Alejandro Duque	Kathy Lloyd	Internal revision
B	22/06/2022	Alejandro Duque	Kathy Lloyd	External revision for ER and TfNSW
C	21/07/2022	Alejandro Duque	Kathy Lloyd	Internal revision
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00	21/10/2022	Adrian Broger	Adrian Broger	External revision updated to address DPE comments
01	07/11/2022	Adrian Broger	Adrian Broger	External revision updated to address DPE comments

1. Introduction

1.1 Project Background

The Western Harbour Tunnel (WHT) will connect the approved M4-M5 Link in Rozelle to the Warringah Freeway at North Sydney / Cammeray. The Project (Stage 3A of the WHT) includes the following key features:

- A portion of the twin mainline tunnels connecting the M4-M5 Link at Rozelle to the Warringah Freeway, near Cammeray, of about 2 kilometres long and commencing from the stub tunnels at the M4-M5 Link in Rozelle and terminating underground at Birchgrove
- Ventilation cavern and tunnel excavation in Rozelle
- Limited in tunnel operational infrastructure including road pavement and drainage to enable Stage 3B works.

The construction of the Project will be supported by two surface based ancillary facilities, located at the WHT cut and cover structure (WHT12) in Rozelle and at White Bay (WHT3) in Rozelle.

Based on the findings presented in the Environmental Impact Statement (EIS) and given that the majority of the Project's construction activities will be predominantly undertaken either underground or from within already fully established support sites, it is anticipated that no threatened ecological communities will be encountered within the construction footprint.

The Western Harbour Tunnel cut and cover structure in Rozelle (WHT12) and the White Bay (WHT3) construction support sites have not been considered further with regards to impacts to terrestrial flora, given that any vegetation has been assumed to be removed by the approved M4-M5 Link project, and there is no vegetation within or next to WHT12 or WHT3 requiring removal.

Although no threatened fauna species and ecological communities were identified during the EIS as having a high likelihood of occurrence within the Project construction footprint, in some instances even when appropriate and robust biodiversity assessments are undertaken some flora and fauna are not identified and are subsequently found unexpectedly during construction.

This procedure outlines the process that will be followed by JHCPB in the event that unexpected flora and fauna is encountered and will be implemented for the duration of the project based on the following legislations and NSW Biodiversity guidelines:

- *Environmental Planning and Assessment Act 1979 (EP&A Act)*
- *Environmental Protection and Biodiversity Act 1999 (EPCB Act)*
- *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA,2011)*
- *Biosecurity Act 2015 (BS Act)*
- *Biodiversity Conservation Act 2016 (BCAct)*
- *National Parks and Wildlife Act 1974 (NPW Act)*
- *Threatened Species Conservation Act 1995 (TSC Act)*
- *Native Vegetation Act 2003 (NV Act)*
- *Noxious Weeds Act 1993 (NW Act)*
- *Pesticides Act 1999*

- *Animal Research Act 1985*.

Further to the above and in accordance with REMM B18, the velocity of wastewater treatment plant discharge will be minimised to avoid scour impacts on the marine environment. Scour protection measures will be implemented at the wastewater treatment plant discharge point.

1.2 Purpose

The purpose of this procedure is to provide guidance to JHCPB site personnel in the event that unexpected flora and fauna is encountered during construction of the Project.

This procedure has been prepared to consider:

- Revised Environmental Management Measures (REMM's) B3, B10,
- *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011)*

This Procedure addresses the specific environmental performance outcomes for flora and fauna, as outlined in Appendix A1 of the Stage 3A Construction Environmental Management Plan (CEMP).

1.3 Contents of this procedure

This procedure contains guidance and a flowchart to assist the construction and environment team in how to manage flora and fauna on the Project. This includes:

- Unexpected Flora and Fauna Finds Management (Section 4)
- Fauna handling (Section 5)

2. Roles and Responsibilities

Project (or delegate) Manager (PM)

- Ensure this procedure is always implemented and complied with
- Provide adequate resources (personnel, financial and technological) for effective development, implementation and maintenance of this procedure.

Environment Manager (EM)

- Ensure this procedure is followed
- Plan, communicate and implement all necessary flora and fauna management controls, and monitor for suitability and effectiveness.

Site Supervisor (SS)

- Ensure this procedure is followed
- Implement all necessary clearing controls, mitigation measures and monitor for suitability and effectiveness.

Environmental Advisor (EA)

- Plan, communicate and advise on implementation of controls, mitigation measures and monitor for suitability and effectiveness (as required)
- Assist site teams to implement procedure.

Ecologist (ECO)

- Guidance as needed if any unexpected flora and fauna finds are encountered during the Project.

3. Training and Inductions

All employees and contractors working on-site will undergo training relating to Flora and Fauna (FF) management and impacts. The induction training via Toolbox Talks will address elements related to FF management including:

- Requirements of this unexpected finds procedure
- Applicable and relevant legislative requirements
- No-go zones
- Incident response procedure if unexpected flora and fauna is encountered

4. Review and update

Reviews and updates of this procedure will occur in accordance with Section 3.12 and Section 3.13 of the CEMP.

5. Unexpected Flora and Fauna Management

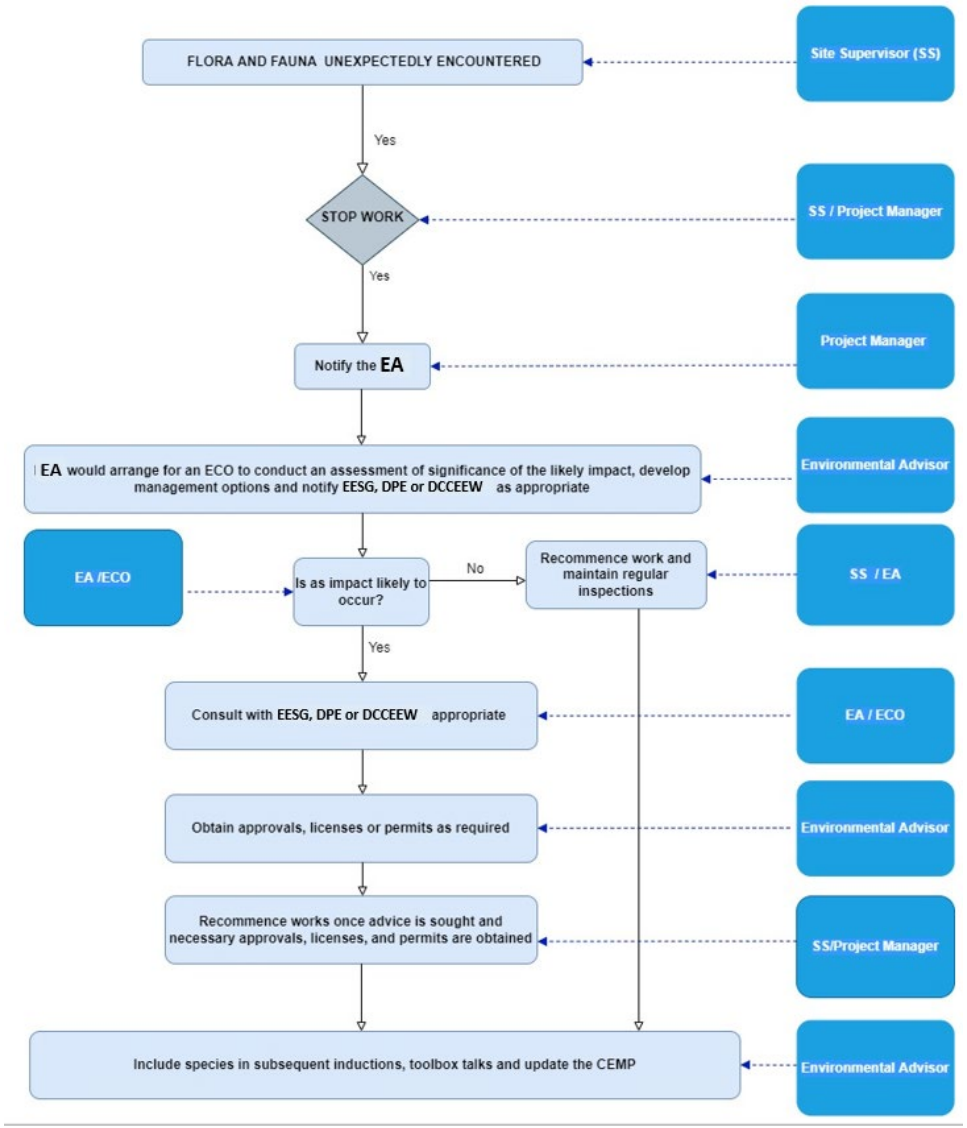


Figure 1. Unexpected flora and fauna finds procedure flowchart.

Potential Impacts

- Potential Fauna injury or mortality due to Project construction activities
- Removal of threatened flora and fauna species
- Loss of threatened flora species
- Impacts on threatened fauna species and endangered populations
- Reduced viability of adjacent habitat due to noise, dust or light spill.

Mitigation Measures

In order to reduce the impact on local fauna and minimise the possibility of a fauna or flora encounter on-site, the following mitigation measures will be implemented where possible:

- The unexpected species find procedure included in *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011) will be followed if threatened ecological communities, flora and fauna species, not assessed in the biodiversity assessment, are identified in the construction footprint

Reporting

A record of the unexpected fauna or flora encounters will be maintained by the Project within environmental inspection reports These encounters may warrant further investigation and/ or notification to site personnel or external agencies, with notification records to include the following details:

- Species
- Location and time captured
- Location and time released
- Behaviour and condition upon release
- Details of any injury or deaths that occurred
- Contact details and location of licensed fauna handler or vet if the animal was transferred into their care.

Fauna that are injured due to the Project works will be reported as an incident in accordance with TfNSW's Environmental Incident Classification and Reporting Procedure as identified in Section 3.8 of the CEMP.

Acronyms

EESG – Environment, Energy and Science Group

DPE – Department of Planning and Environment

DCCEEW – Department of Climate Change, Energy, the Environment and Water

6. Fauna Handling

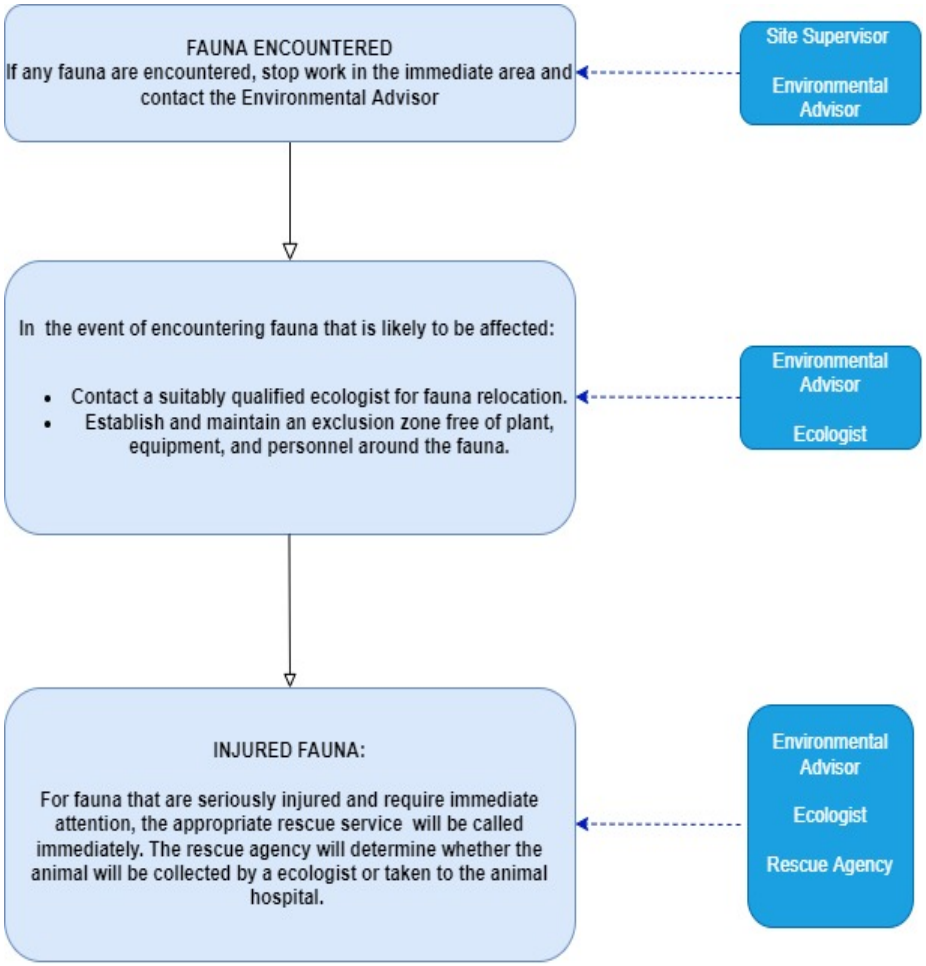


Figure 2. Fauna Handling Management procedure flowchart

Potential Impacts

- Potential injury or mortality of fauna due to construction activities
- risk to health and safety of workers during the encounter of aggressive or venomous fauna.

Mitigation Measures

In order to minimise impacts on fauna as a result of being handled by humans and prevent injury to people handling fauna, the following mitigation measures will be implemented where possible.

- Fauna will be managed in accordance with *Guide 9: Fauna handling of the WHT/WFU Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011)

Fauna Release

In case of unexpected fauna encounters, a suitably qualified ecologist must be contacted to release all fauna (refer to Figure 2. All site personnel and/or subcontractors are to be excluded from the vicinity.

Animals will only be released if the species are not injured, and accordance with the following procedures:

- Release fauna into pre-determined habitat identified for fauna release
- Release fauna into similar habitats, as near as possible to their capture location
- If the species is nocturnal, release will be carried out at dusk if practicable
- If the fauna is injured, the appropriate rescue service will be called immediately (refer to the flowchart for Fauna species Unexpectedly encountered Management).

Reporting

A record of the fauna interactions will be maintained by the Project within environmental inspection reports. These encounters may warrant further investigation and/ or notification to site personnel or external agencies with notification records to include the following details:

- Species
- Location and time captured
- Location and time released
- Behaviour and condition upon release
- Details of any injury or deaths that occurred
- Contact details and location of licensed fauna handler or vet if the animal was transferred into their care.

Fauna that are injured due to the project works will be reported as an incident in accordance with TfNSW's Environmental Incident Classification and Reporting Procedure as identified in the Stage 3A CEMP.

Appendix E Air Quality Management Sub-plan

Appendix F Groundwater Management Sub-plan

Appendix G Heritage Management Procedure

Appendix G

Heritage Management Procedure

STW-JHC-PLN-00-EN-002-000007

Western Harbour Tunnel Stage 3A

26 August 2022

Document status

Revision	Date	Prepared by	Reviewed by	Remarks
A	25/05/2022	Chetan Jayaram	Kathy Lloyd	Internal revision
B	25/05/2022	Chetan Jayaram	Kathy Lloyd	Internal revision
C	22/06/2022	Chetan Jayaram	Kathy Lloyd Adrian Broger	External revision for ER and TfNSW
D	28/07/2022	Kathy Lloyd	Adrian Broger	External revision for consultation
00	26/08/2022	Chetan Jayaram	Adrian Broger	Updated to address ER and IC comments

Distribution of controlled copies

This Procedure is available to all personnel and subcontractors via the Project document control management system. An electronic copy can be found on the Project website.

The document is uncontrolled when printed.

1. Introduction

1.1 Project Background

The Western Harbour Tunnel (WHT) will connect the approved M4-M5 Link in Rozelle to the Warringah Freeway at North Sydney / Cammeray. The Project (Stage 3A of the WHT) includes the following key features:

- A portion of the twin mainline tunnels connecting the M4-M5 Link at Rozelle to the Warringah Freeway, near Cammeray, of about 2 kilometres long and commencing from the stub tunnels at the M4-M5 Link in Rozelle and terminating underground at Birchgrove
- Ventilation cavern and tunnel excavation in Rozelle
- Limited in tunnel operational infrastructure including road pavement and drainage to enable Stage 3B works.

The construction of the Project will be supported by two surface based ancillary facilities, located at the WHT cut and cover structure (WHT12) in Rozelle and at White Bay (WHT3) in Rozelle.

Based on the findings presented in the Environmental Impact Statement (EIS) and given that the majority of the Project's construction activities will be predominantly undertaken either underground or from within already fully established support sites, it is anticipated that no heritage items will be directly impacted by the Project. There are no registered Aboriginal heritage information management systems (AHIMS) sites within the vicinity of the project works. This was confirmed in the Environmental Risk Assessment Workshop for the Project (refer Section 3.2.1 and Appendix A2 of the Stage 3A Construction Environmental Management Plan (CEMP)).

However, in some instances even when appropriate and robust cultural heritage assessments are undertaken during the EIS assessment process, some heritage objects, relics or human remains are not identified, and are subsequently found unexpectedly during construction.

This procedure outlines the process that will be followed by John Holland CPB Contractors (JHCPB) in the event that unexpected heritage items or human remains are encountered and will be implemented for the duration of the Project, based on the following legislation and NSW Heritage guidelines:

- Environment Planning and Assessment Act 1979 (EP&A Act)
- NSW National Parks and Wildlife Act 1974 (NPW Act)
- NSW Heritage Act 1977
- NSW Heritage Council Excavation Director Criteria (2019)
- NSW Historical Archaeology Code of Practice (2006)
- Assessing Significance for Historical Archaeological Sites and 'Relics" (2009)
- NSW Coroners Act 2009.

This procedure also outlines the process for works under any Heritage structures in relation to management of indirect vibration impacts. Regular review and updates to this procedure will occur in accordance with Section 3.12 and 3.13 of the CEMP.

1.2 Purpose

The purpose of this procedure is to provide guidance to site personnel in the event that an unexpected heritage find or human remains are encountered during the construction of the Project. This procedure also outlines the process for works under any heritage structures in relation to management of indirect vibration impacts.

This procedure will be implemented from the commencement of the Project and forms Appendix G of the Stage 3A CEMP.

This procedure provides the Project with several key hold points to ensure that the appropriate specialists are engaged if required at the right time in the event of an unexpected heritage find. This includes but not is limited to:

- Transport for NSW (the Client)
- NSW Police
- NSW Coroner
- NSW Heritage Council
- Suitably qualified and experienced Excavation Director (ED)
- Heritage NSW
- Registered Aboriginal Parties (RAPs).

This procedure has been prepared to meet the requirement of Minister's Condition of Approval (MCoA) E63 which states: An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (including maritime discoveries) in accordance with any guidelines and standards prepared by Heritage NSW and submitted to the Planning Secretary for information before the commencement of construction.

An 'unexpected heritage find' is defined by the MCoA as: 'An object or place that is discovered during the carrying out the SSI and which may be a heritage item but will not be identified in the documents listed in Condition A1 or suspected to be present. An unexpected heritage find does not include human remains'.

'Human remains' are defined as human skeletal remains. Human remains must be correctly identified as either a forensic case or an archaeological case and whether the remains have Aboriginal ancestry and require further case and consultation.

CoA E64 requires that the Unexpected Heritage Finds and Human Remains Procedure must be implemented throughout the construction.

In addition to the above, the following were considered in the preparation of this procedure:

- MCoA E50 for Aboriginal Cultural Heritage
- Revised environmental management measure (REMM), NAH 10 to NAH 12 for Non-Aboriginal heritage
- REMM AH2 to AH6 for Aboriginal cultural heritage.
- Roads and Maritime Services Standard Management Procedure: *Unexpected Heritage Items* (RMS 2015)

To satisfy REMMs NAH10, NAH11 and AH5, if at any time during the Project historical heritage items, features and/or deposits or possible human skeletal materials (remains) are encountered, Roads and Maritime Services Standard Management Procedure: *Unexpected Heritage Items* (RMS 2015) presented as Attachment A will be followed.

The Process for works under any Heritage structures in relation to management of indirect vibration impacts will be undertaken as per Attachment B.

In the event any Unexpected Heritage Finds are encountered, the overview flowchart process shown in Attachment C will be implemented along with the requirements of Attachment A.

Attachment D shows the process to be followed if any possible human skeletal materials (remains) are encountered. The requirements of Attachment A will also be followed as relevant to human remains.

2. Listed Heritage Items within close proximity of Tunnel Alignment

Construction activities will be undertaken in a manner to ensure vibration levels do not exceed a conservative vibration damage screening level of 2.5 mm/sec at non-Aboriginal heritage sites or heritage listed items such as 'Birchgrove Colliery including interiors' located at 2-8 Water Street, Birchgrove Street, Leichhardt NSW (refer Figure 1 and Figure 2), which is situated within 50m of the tunnel alignment. This property features below ground attributes, to a depth of approximately 900m.

In addition to the above listed property, Attachment E illustrates the heritage listed properties identified in the WHT Tunnelling Construction Noise and Vibration Impact Statement (CNVIS).

Adopting the 2.5mm/sec screening level does not necessarily reflect that there would be a vibration impact on the structure if this level is exceeded, instead it is a suitable vibration level that is used as part of the construction vibration management process to trigger further investigation.

The EIS does not identify any additional areas of terrestrial archaeological potential within the study area for the construction/ tunnelling works.

Attachment B of this procedure shows the process adopted by the Project to manage any potential vibration impacts to the heritage listed items located within close proximity of the tunnel alignment.

3. Unexpected Heritage Finds and Human Remains

3.1 Unexpected Heritage Finds

The range of potential unexpected heritage find discoveries can include, but is not limited to, the following:

- Aboriginal stone artefacts, burial sites, engraved rock art, scarred trees
- Remains of rail infrastructure including buildings, footings, stations, rail lines and culverts
- Remains of other infrastructure including sandstone or brick buildings, wells, cisterns, drainage services, old kerbing and pavement, former road surfaces, timber and stone culverts and retaining walls
- Artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes
- Archaeological human skeletal remains.

Attachment C provides an overview of steps to be undertaken on the discovery of an unexpected heritage item. The requirements of Attachment A will also be followed in the event of an unexpected heritage find.

3.2 Unexpected Human Skeletal Remains

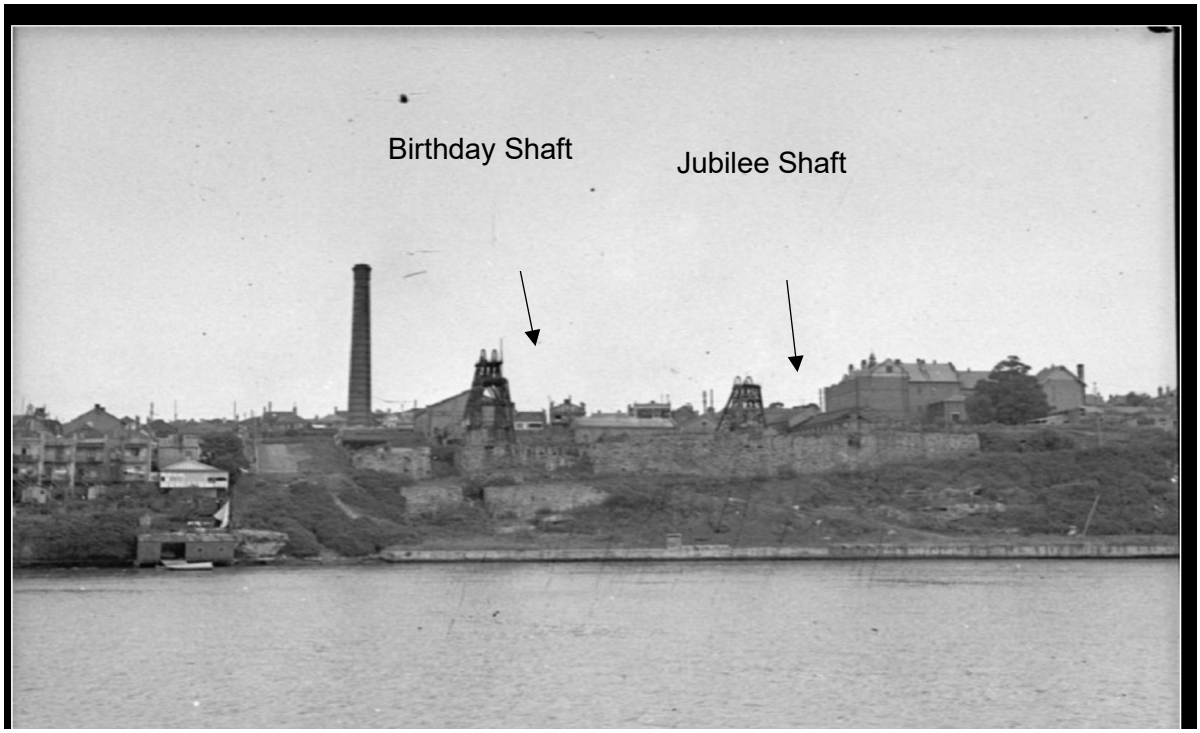
Bone is a common material recovered from archaeological sites and is often of animal origin. However, there are a variety of contexts where human remains might be discovered.

- Insitu articulated skeletal remains discovered in undisturbed burials
- Disarticulated skeletal remains that were redeposited after a burial was disturbed
- Discarded skeletal remains (for instance, as a result of injury or amputation).

A suitably qualified and experienced subject matter expert (SME) (eg. an Excavation Director and Registered Aboriginal Parties (RAPs)) can make the distinction between commonly encountered animal remains and ‘suspected human remains’. However, all ‘suspected human remains’ will always be immediately referred to NSW Police and, if necessary, a forensic anthropologist, or equivalent, for confirmation or to ascertain age and ancestry.

In the event that any unexpected human skeletal remains are encountered on the Project the process shown in the flowchart in Attachment D and will be followed and the relevant requirements of Attachment A will also be implemented.

Figure 1 – Approximate Location of Birchgrove Colliery, Balmain



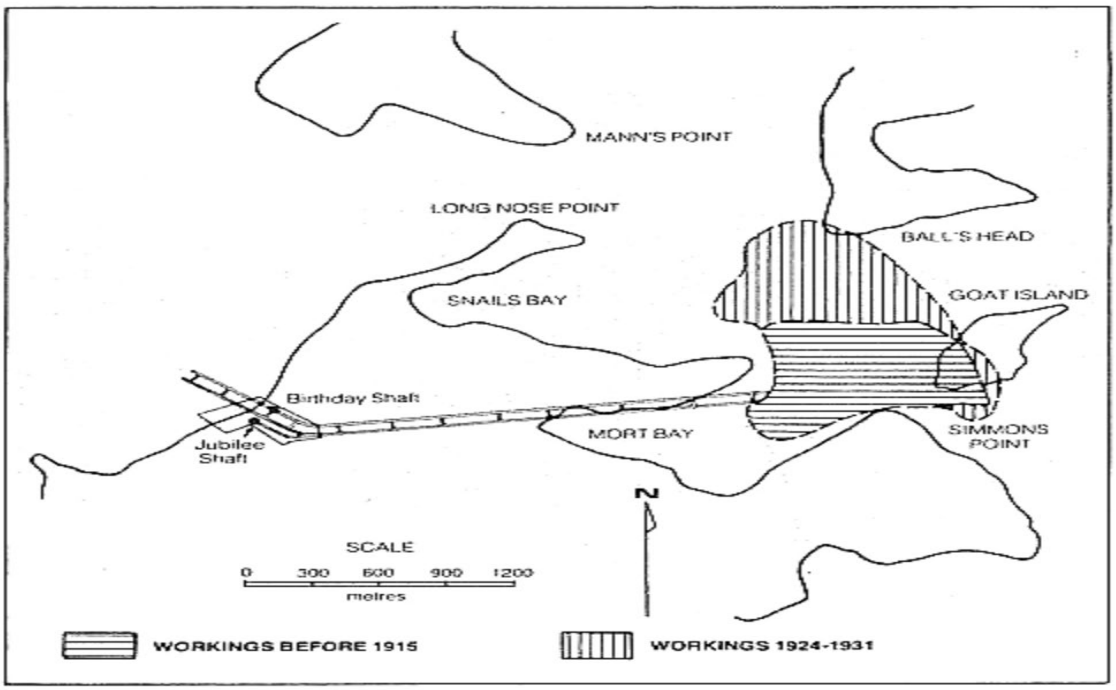


Figure 2 - Birchgrove Colliery, Balmain

4. Roles and Responsibilities

4.1 JHCPB Site Supervisor

- Ensure this Heritage Management Procedure is implemented throughout construction
- Prior to the commencement of tunnelling check the location of all heritage properties above the alignment of the tunnel to determine if if monitoring required in line with Attachment B
- Stop work immediately upon becoming aware of a suspected unexpected heritage finds or human remains is encountered
- Cordon off area until JHCPB Environment Manager (EM) or delegate advises that work can recommence
- Inform EM or delegate of unexpected heritage finds or human remains
- Assist Environment team in recording details of unexpected finds
- Work with Environment team to develop and implement a plan for managing the unexpected finds (where applicable)
- Recommence work following approval from the Environment team.

4.2 JHCPB Environment Manager (or delegate)

- Ensure this Heritage Management Procedure is implemented throughout construction
- Coordinate vibration monitoring of heritage items above the tunnel in accordance with Attachment B and the NVMP
- Record details of all unexpected finds and notify the Client and relevant regulatory authorities if required
- Engage and coordinate with qualified SMEs following unexpected finds
- Manage the process of identifying, reporting, protecting and mitigating impacts on the 'find'
- Assist and liaise with the SMEs and relevant authorities on significance of the find, mitigation and regulatory requirements
- In consultation with the SMEs, work with the construction teams and the JHCPB Site Supervisor to develop a plan for or managing the unexpected find/s (if applicable)
- Complete incident report, review CEMP (if required) and propose relevant changes
- Advise construction teams to recommence works.

4.3 Subject Matter Experts / Relevant Authorities

- Heritage NSW, DPC (for Aboriginal items) – Regulate the care, protection and management of Aboriginal objects and issue Aboriginal heritage impact permits
- Heritage Council of NSW (for relics) – Regulate the care, protection and management of relics, issue excavation permits and monitor works
- Excavation Director (ED) –
  - Provide expert advice to the EM or delegate on 'find' identification, significance, mitigation, legislative procedures and regulatory requirements, best practice and guidelines

- if required, implement recommendations and if necessary, seek and follow guidance from Heritage NSW or its delegate, NSW Police and relevant authorities.

- Aboriginal Archaeology Director (AAD) –
  - Prepare the Aboriginal Archaeology and Heritage Unexpected Heritage Finds and Human Remains Procedure. Consult with Registered Aboriginal Party (RAPs)
  - Provides expert advice to the EM or delegate on 'find' identification, significance, mitigation, legislative procedures and regulatory requirements, best practice and guidelines.

5. Training and Awareness

To satisfy NAH 12 and AH6 and in line with Section 3.5.2 of the CEMP, historical heritage awareness training will be provided for contractors prior to commencing construction works to ensure the Project team are aware and understand the potential heritage items that may be impacted during the project. This training will include the procedure required to be followed in the event of discovery of historical heritage materials, features or deposits, or the discovery of human remains.

6. Reporting

A record of any unexpected finds encountered during the Project will be maintained by the Project and will include the following details:

- Date, time and location of unexpected find, including depth
- Details regarding assessment by JHCPB Environment Manager or delegate (if applicable advice/ report from the subject matter experts)
- Consultation records with SME's and action plan/s (as applicable)
- Monitoring results if applicable.

7. Emergency Contacts

In the event that unexpected heritage items and/or human remains are encountered at any stage of the Project, work will be stopped immediately, and the following Project team contacts listed in Table 1 will be notified to inform discovery of the unexpected find.

Table 1 Internal Project contacts

Position	Name	Contact Number
JHCPB Environment Manager	Charles Scarf	0438 247 725
JHCPB Project Director	Steven Keyser	0422 009 396
Environmental Representative	Gillian Lehn	0438 355 346

The regulatory agencies listed in Table 2 will be contacted where notification is required under legislation or guidelines.

Table 2 External Agency Contacts

Find Type	Agency	Contact Details
Human Remains	NSW Environment Line	131 555
	NSW Police	000 or Local Police Area Command
Heritage Finds, 'Relics' and Human Remains	Heritage NSW – Historical Archaeologist NSW Police	02 9873 8500 000 or Local Police Area Command
'Objects' and Human Remains	Aboriginal Cultural Heritage Heritage NSW – Aboriginal Historical Archaeologist NSW Police	

Attachment A

Roads and Maritime: *Unexpected Heritage Items Heritage Procedure* (RMS 2015)

Transport
Roads & Maritime
Services

NSW GOVERNMENT

Unexpected Heritage Items

Heritage Procedure 02

November 2015

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Contents

Appendices

Please note

This procedure applies to all development and activities concerning roads, road infrastructure and road related assets undertaken by Roads and Maritime.

For advice on how to manage unexpected heritage items as a result of activities related to maritime infrastructure projects, please contact the Senior Environmental Specialist (Heritage).

1 Purpose

This procedure has been developed to provide a consistent method for managing unexpected heritage items (both Aboriginal and non-Aboriginal) that are discovered during Roads and Maritime activities. This procedure includes Roads and Maritime's heritage notification obligations under the *Heritage Act 1977* (NSW), *National Parks and Wildlife Act 1974* (NSW), A*boriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth) and the *Coroner's Act 2009* (NSW).

This document provides relevant background information in Section 3, followed by the technical procedure in Sections 6 and 7. Associated guidance referred to in the procedure can be found in Appendices A-H.

2 Scope

This procedure assumes that an appropriate level of Aboriginal and non-Aboriginal heritage assessment has been completed before work commences on site. In some cases, such as exempt development, detailed heritage assessment may not be required.

Despite appropriate and adequate investigation, unexpected heritage items may still be discovered during maintenance and construction works. When this happens, this procedure must be followed. This procedure provides direction on when to stop work, where to seek technical advice and how to notify the regulator, if required.

This procedure applies to <u>all</u> Road and Maritime construction and maintenance activities

This procedure **applies to**:

- The discovery of any unexpected heritage item (usually during construction), where Roads and Maritime does not have approval to disturb the item or where safeguards for managing the disturbance (apart from this procedure) are not contained in the environmental impact assessment.
- All Roads and Maritime projects that are approved or determined under Part 3A (including Transitional Part 3A Projects), Part 4, Part 5 or Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), or any development that is exempt under the Act.

This procedure must be followed by Roads and Maritime staff, alliance partners (including local council staff working under Road Maintenance Council Contracts, [RMCC]), developers under works authorisation deeds or any person undertaking Part 5 assessment for Roads and Maritime.

This procedure **does not** apply to:

- The legal discovery and disturbance of heritage items as a result of investigations being undertaken in accordance with OEH's *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (2010); an Aboriginal Heritage Impact Permit (AHIP) issued under the *National Parks and Wildlife Act 1974*; or an approval issued under the *Heritage Act 1977*[1].
- The legal discovery and disturbance of heritage items as a result of investigations (or other activities) that are required to be carried out for the purpose of complying with any environmental assessment requirements under Part 3A (including Transitional Part 3A Projects) or Part 5.1 of the EP&A Act.
- The legal discovery and disturbance of heritage items as a result of construction related activities, where the disturbance is permissible in accordance with an AHIP[2]; an approval issued under the *Heritage Act 1977*; the Minister for Planning's conditions of project approval; or safeguards (apart from

[1] RMS' heritage obligations are incorporated into the conditions of heritage approvals.

[2] RMS *Procedure for Aboriginal cultural heritage consultation and investigation* (2011) recommends that Part 4 and Part 5 projects that are likely to impact Aboriginal objects during construction seek a whole-of-project AHIP. This type of AHIP generally allows a project to impact known and potential Aboriginal objects within the entire project area, without the need to stop works. It should be noted that an AHIP may exclude impact to certain objects and areas, such as burials or ceremonial sites. In such cases, the project must follow this procedure.

this procedure) that are contained in the relevant environmental impact assessment.

All construction environment management plans (CEMPs) must make reference to and/or include this procedure (often included as a heritage sub-plan). Where approved CEMPs exist they must be followed in the first instance. Where there is a difference between approved CEMPs and this procedure, the approved CEMP must be followed. Where an approved CEMP does not provide sufficient detail on particular issues, this procedure should be used as additional guidance. When in doubt always seek environment and legal advice on varying approved CEMPs.

3 Types of unexpected heritage items and their legal protection

The roles of project, field and environmental staff are critical to the early identification and protection of unexpected heritage items. **Appendix A** illustrates the wide range of heritage discoveries found on Roads and Maritime projects and provides a useful photographic guide. Subsequent confirmation of heritage discoveries must then be identified and assessed by technical specialists (usually an archaeologist).

An 'unexpected heritage item' means any unanticipated discovery of an actual or potential heritage item, for which Roads and Maritime does not have approval to disturb[3] or does not have a safeguard in place (apart from this procedure) to manage the disturbance.

These discoveries are categorised as either:

(a) Aboriginal objects

(b) Historic (non-Aboriginal) heritage items

(c) Human skeletal remains.

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

3.1 Aboriginal objects

The *National Park and Wildlife Act 1974* protects *Aboriginal objects* which are defined as:

"*any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non Aboriginal extraction, and includes Aboriginal remains*"[4].

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

IMPORTANT!

<u>All</u> Aboriginal objects, regardless of significance, are protected under law.

If any impact is expected to an Aboriginal object, an Aboriginal Heritage Impact Permit (AHIP) is usually required from the Office of Environment and Heritage (OEH)[5]. Also, when a person becomes aware of an Aboriginal object they must notify

[3] Disturbance is considered to be any physical interference with the item that results in it being destroyed, defaced, damaged, harmed, impacted or altered in any way (this includes archaeological investigation activities).
[4] Section 5(1) *National Park and Wildlife Act 1974*.
[5] Except when Part 3A, Division 4.1 of Part 4 or Part 5.1 of the *EP&A Act* applies.

the Director-General of OEH about its location[6]. Assistance on how to do this is provided in Section 7 (Step 5).

3.2 Historic heritage items

Historic (non-Aboriginal) heritage items may include:

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

3.2.1 Archaeological relics

The *Heritage Act 1977* protects *relics* which are defined as:

"*any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance*"[7].

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

IMPORTANT!

All relics are subject to statutory controls and protections.

If a relic is likely to be disturbed, a heritage approval is usually required from the NSW Heritage Council[8]. Also, when a person discovers a relic they must notify the NSW Heritage Council of its location[9]. Advice on how to do this is provided in Section 7 (Step 5).

3.2.2 Other historic items

Some historic heritage items are not considered to be 'relics'; but are instead referred to as works, buildings, structures or movable objects. Examples of these items that Roads and Maritime may encounter include culverts, historic road formations, historic pavements, buried roads, retaining walls, tramlines, cisterns, fences, sheds, buildings and conduits. Although an approval under the *Heritage Act 1977* (NSW) may not be required to disturb these items, their discovery must be managed in accordance with this procedure.

As a general rule, an archaeological relic requires discovery or examination through the act of excavation. An archaeological excavation permit under Section 140 of the Heritage Act is required to do this. In contrast, 'other historic items' either exist above the ground's surface (e.g. a shed), or they are designed to operate and exist beneath the ground's surface (e.g. a culvert).

[6] This is required under s89(A) of the *National Park and Wildlife Act 1974* (NSW) and applies to **all projects** assessed under Part 3A, Part 4, Part 5 and Part 5.1 of the *EP&A Act*, including exempt development.

[7] Section 4(1) *Heritage Act 1977*.

[8] Except when Part 3A, Division 4.1 of Part 4 or Part 5.1 of the *EP&A Act* applies.

[9] This is required under s146 of the *Heritage Act 1977* and applies to **all projects** assessed under Part 3A, Part 4, Part 5 and Part 5.1 of the *EP&A Act*, including exempt development.

Despite this difference, it should be remembered that relics can often be associated with 'other heritage items', such as archaeological deposits within cisterns and underfloor deposits under buildings.

3.3 Human skeletal remains

Human skeletal remains can be classed as:

- Reportable deaths
- Aboriginal objects
- Relics

Where it is suspected that less than 100 years has elapsed since death, human skeletal remains come under the jurisdiction of the State Coroner and the *Coroners Act* 2009 (NSW). Under s 35(2) of the Act, a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old[10] regardless of ancestry. Public health controls may also apply.

Where remains are suspected of being more than 100 years old, they are considered to be either Aboriginal objects or non-Aboriginal relics depending on the ancestry of the individual. Aboriginal human remains are protected under the *National Parks and Wildlife Act 1974*, while non-Aboriginal remains are protected under the *Heritage Act 1977*.

The approval and notification requirements of these Acts are described above in sections 3.1 and 3.2. Additionally, the discovery of Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under s 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth).

IMPORTANT!

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

All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently.

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Guidance on what to do when suspected human remains are found is in **Appendix E**.

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

4 Responsibilities

The following roles and responsibilities are relevant to this procedure:

Role	Definition/responsibility
Aboriginal Cultural Heritage Advisor (ACHA)	Provides Aboriginal cultural heritage advice to project teams. Acts as Aboriginal community liaison for projects on cultural heritage matters. Engages and consults with the Aboriginal community as per the Roads and Maritime *Procedure for Aboriginal Cultural Heritage Consultation and Investigation*.
Aboriginal Sites Officer (ASO)	Is an appropriately trained and skilled Aboriginal person whose role is to identify and assess Aboriginal objects and cultural values. For details on engaging Aboriginal Sites Officers, refer to Roads and Maritime *Procedure for Aboriginal Cultural Heritage Consultation and Investigation*.
Archaeologist (A)	Professional consultant, contracted on a case-by-case basis to provide heritage and archaeological advice and technical services (such as reports, heritage approval documentation etc). Major projects with complex heritage issues often have an on call Project archaeologist.
Project Manager (PM)	Ensures all aspects of this procedure are implemented. The PM can delegate specific tasks to a construction environment manager, Roads and Maritime site representatives or regional environment staff, where appropriate.
Regional Environment Staff (RES)	Provides advice on this procedure to project teams. Ensuring this procedure is implemented consistently by supporting the PM. Supporting project teams during the uncovering of unexpected finds. Reviewing archaeological management plans and liaising with heritage staff and archaeological consultants as needed.
Registered Aboriginal Parties (RAPs)	RAPs are Aboriginal people who have registered with Roads and Maritime to be consulted about a proposed Roads and Maritime project or activity in accordance with OEH's Aboriginal cultural heritage consultation requirements for proponents (2010).
Senior Environmental Specialist (Heritage) (SES(H))	Provides technical assistance on this procedure and archaeological technical matters, as required. Reviewing the archaeological management plans and facilitating heritage approval applications, where required. Assists with regulator engagement, where required.
Team Leader - Regional Maintenance Delivery (TL-RMD)	Ensures Regional Maintenance Delivery staff stop work in the vicinity of an unexpected heritage item. Completes Unexpected Heritage Item Recording Form 418 and notifies WS-RMD.
Technical Specialist	Professional consultant contracted to provide specific technical advice that relates to the specific type of unexpected heritage find (eg a forensic or physical anthropologist who can identify and analyse human skeletal

	remains).
Works Supervisor - Regional Maintenance Delivery (WS-RMD)	Ensures Regional Maintenance Delivery staff are aware of this procedure. Supports the Team Leader - Regional Maintenance Delivery during the implementation of this procedure and ensures reporting of unexpected heritage items through environment management systems.

5 Acronyms

The following acronyms are relevant to this procedure:

Acronym	Meaning
A	Archaeologist
ACHA	Aboriginal Cultural Heritage Advisor
AHIP	Aboriginal Heritage Impact Permit
ASO	Aboriginal Site Officer
CEMP	Construction Environment Management Plan
OEH	Office of Environment and Heritage.
PACHCI	Procedure for Aboriginal Cultural Heritage Consultation and Investigation
PM	Project Manager
RAP	Registered Aboriginal Parties
RES	Regional Environmental Staff
SES(H)	Senior Environmental Specialist (Heritage)
TL-RMD	Team Leader – Regional Maintenance Division
RMD	Regional Maintenance Delivery
RMS	Roads and Maritime
WS-RMD	Works Supervisor - Regional Maintenance Division

6 Overview of the Procedure

On discovering something that could be an unexpected heritage item ('the item'), the following procedure must be followed. There are eight steps in the procedure. These steps are summarised in **Figure 1** below and explained in detail in Section 7.

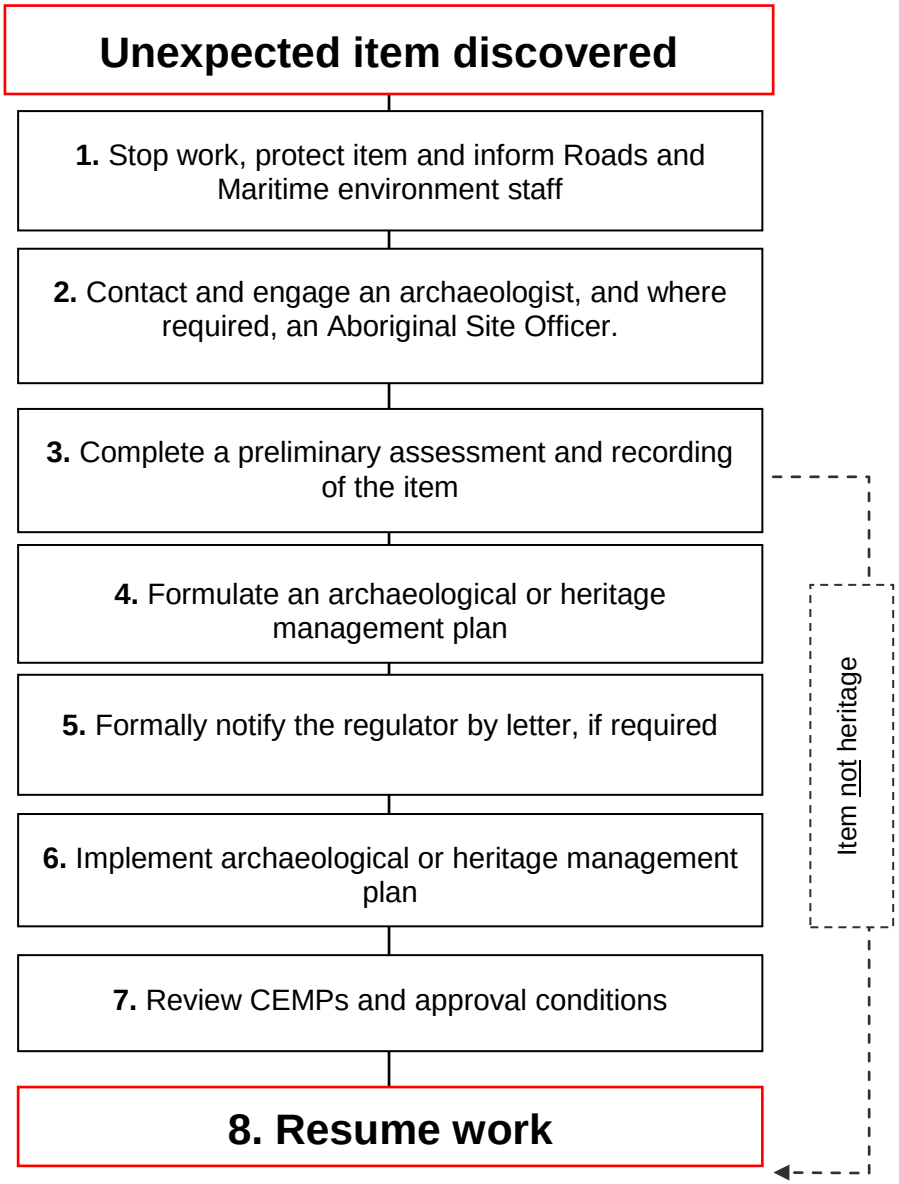


Figure 1: Overview of steps to be undertaken on the discovery of an unexpected heritage item.

IMPORTANT!

RMS may have approval or specific safeguards in place (apart from this procedure) to impact on certain heritage items during construction. If you discover a heritage item and you are unsure whether an approval or safeguard is in place, STOP works and follow this procedure.

7 Unexpected heritage items procedure

Table 1: Specific tasks to be implemented following the discovery of an unexpected heritage item.

Aboriginal Cultural Heritage Advisor (ACHA); Aboriginal Sites Officer (ASO); Archaeologist (A); Project Manager (PM); Regional Environment Staff (RES); Registered Aboriginal Parties (RAPs); Senior Environmental Specialist (Heritage) (SES(H)); Team leader – Roads and Maintenance Division (TL - RMD); Works supervisor – Roads and Maintenance Division (WS - RMD).

Step	Task	Responsibility	Guidance & Tools
1	**Stop work, protect item and inform Roads and Maritime environment staff**		
1.1	Stop all work in the immediate area of the item and notify the Project Manager or Team Leader-RMD. (For maintenance activities, the Team Leader is to also notify the Works Supervisor-RMD)	All	**Appendix A** (Identifying Unexpected Heritage items)
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical.	PM or TL-RMD	
1.3	Inform all site personnel about the no-go zone. No further interference, including works, ground disturbance, touching or moving the item must occur within the no-go zone.	PM or TL-RMD	
1.4	Inspect, document and photograph the item using 'Unexpected Heritage Item Recording Form 418'.	PM or TL-RMD	**Appendix B** (Unexpected Heritage Item Recording Form 418) **Appendix C** (Photographing Unexpected Heritage items)

Step	Task	Responsibility	Guidance & Tools
1.5	Is the item likely to be bone? If **yes**, follow the steps in Appendix E – 'Uncovering bones'. Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site. If **no**, proceed to next step.	PM or WS-RMD	**Appendix E** (Uncovering Bones)
1.6	Is the item likely to be: a) A relic? (A relic is evidence of past human activity which has local or state heritage significance. It may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse) and/or b) An Aboriginal object? (An Aboriginal object may include a shell midden, stone tools, bones, rock art or a scarred tree). If **yes**, proceed directly to Step 1.8 If **no**, proceed to next step.	PM or WS-RMD	**Appendix A** (Identifying heritage items)
1.7	Is the item likely to be a "work", building or standing structure? (This may include tram tracks, kerbing, historic road pavement, fences, sheds or building foundations). If **yes**, can works avoid further disturbance to the item? (E.g. if historic road base/tram tracks have been exposed, can they be left in place?) If **yes**, works may proceed without further disturbance to the item. Complete Step 1.8 within 24 hours. If works cannot avoid further disturbance to the item, works must not recommence at this time. Complete the remaining steps in this procedure.	PM or WS-RMD	**Appendix A** (Identifying heritage items)

Step	Task	Responsibility	Guidance & Tools
1.8	Inform relevant Roads and Maritime Regional Environmental Staff of item by providing them with the completed 'Form 418'.	PM or WS-RMD (RES)	**Appendix D** (Key Environmental Contacts)
1.9	Regional Environmental Staff to advise Project Manager or Works Supervisor whether RMS has an approval or safeguard in place (apart from this procedure) to impact on the 'item'. (An approval may include an approval under the *Heritage Act*, the *National Parks and Wildlife Act* or the *Planning and Assessment Act*). Does RMS have an approval, permit or appropriate safeguard in place to impact on the item? If **yes**, work may recommence in accordance with the approval, permit or safeguard. There is no further requirement to follow this procedure. If **no**, continue to next step.		
1.10	Liaise with Traffic Management Centre where the delay is likely to affect traffic flow.	PM or WS-RMD	
1.11	Report the item as a 'Reportable Event' in accordance with the Roads and Maritime *Environmental Incident Classification and Reporting Procedure*. Implement any additional reporting requirements related to the project's approval and CEMP, where relevant.	PM or WS-RMD	RMS Environmental Incident Classification and Reporting Procedure
2	**Contact and engage an archaeologist and, where required, an Aboriginal site officer**		
2.1	Contact the Project (on-call) Archaeologist to discuss the location and extent of the item and to arrange a site inspection, if required. The project CEMP may contain contact details of the Project Archaeologist. OR	PM or WS-RMD (A; RES; SES(H))	Also see **Appendix D** (Key Environmental Contacts)

Step	Task	Responsibility	Guidance & Tools
	Where there is no project archaeologist engaged for the works, engage a suitably qualified and experienced archaeological consultant to assess the find. A list of heritage consultants is available on the RMS contractor panels on the Buyways homepage. Regional environment staff and Roads and Maritime heritage staff can also advise on appropriate consultants.		Buyways
2.2	Where the item is likely to be an Aboriginal object, speak with your Aboriginal Cultural Heritage Advisor to arrange for an Aboriginal Sites Officer to assess the find. Generally, an Aboriginal Sites Officer would be from the relevant local Aboriginal land council. If an alternative contact person (ie a RAP) has been nominated as a result of previous consultation, then that person is to be contacted.	PM or WS-RMD (ACHA; ASO)	
2.3	If requested, provide photographs of the item taken at Step 1.4 to the archaeologist, and Aboriginal Sites Officer if relevant.	PM or WS-RMD (RES)	**Appendix C** (Photographing Unexpected Heritage items)
3	**Preliminary assessment and recording of the find**		
3.1	In a minority of cases, the archaeologist (and Aboriginal Sites Officer, if relevant) may determine from the photographs that no site inspection is required because no archaeological constraint exists for the project (*eg the item is not a 'relic', a 'heritage item' or an 'Aboriginal object*'). Any such advice should be provided in writing (eg via email) and confirmed by the Project Manager or Works Supervisor - RMD.	A/PM/ASO/ WS-RMD	Proceed to Step 8
3.2	Arrange site access for the archaeologist (and Aboriginal Sites Officer, if relevant) to inspect the item as soon as practicable. In the majority of cases a site inspection is required to conduct a preliminary assessment.	PM or WS-RMD	
3.3	Subject to the archaeologist's assessment (and the Aboriginal Sites Officer's assessment, if relevant), work may recommence at a set distance from the item. This is to protect any other archaeological material that may exist in the vicinity, which has not yet been uncovered. Existing protective fencing established in Step 1.2 may need to be adjusted to	A/PM/ASO/ WS-RMD	

Step	Task	Responsibility	Guidance & Tools
	reflect the extent of the newly assessed protective area. No works are to take place within this area once established.		
3.4	The archaeologist (and Aboriginal Sites Officer, if relevant) may provide advice after the site inspection and preliminary assessment that no archaeological constraint exists for the project (*eg the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'*). Any such advice should be provided in writing (eg via email) and confirmed by the Project Manager or Works Supervisor - RMD.	A/PM/ASO/ WS-RMD	Proceed to Step 8
3.5	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). Regional environment staff and/or Roads and Maritime heritage staff can provide contacts for such specialist consultants.	RES/SES(H)	**Appendix D** (Key Environmental Contacts)
3.6	Where the item has been identified as a 'relic', 'heritage item' or an 'Aboriginal object' the archaeologist should formally record the item.	A	
3.7	The regulator can be notified informally by telephone at this stage by the archaeologist, Project Manager (or delegate) or Works Supervisor - RMD. Any verbal conversations with regulators must be noted on the project file for future reference.	PM/A/WS-RMD	
4	**Prepare an archaeological or heritage management plan**		
4.1	The archaeologist must prepare an archaeological or heritage management plan (with input from the Aboriginal Sites Officer, where relevant) shortly after the site inspection. This plan is a brief overview of the following: (a) description of the feature, (b) historic context, if data is easily accessible, (c) likely significance, (d) heritage approval and regulatory notification requirements, (e) heritage reporting requirements, (f) stakeholder consultation requirements, (g) relevance to other project approvals and management plans etc.	A/ASO	**Appendix F** (Archaeological/ Heritage Advice Checklist)
4.2	In preparing the plan, the archaeologist with the assistance of regional environment staff must review the CEMP, any heritage sub-plans, any conditions of heritage approvals, conditions of project approval (and or Minister's Conditions of Approval) and heritage assessment documentation (eg Aboriginal Cultural Heritage Assessment Report). This will outline if the unexpected item is consistent with previous heritage/project approval(s)	A/RES/PM	**Appendix F** (Archaeological/ Heritage Advice Checklist)

Step	Task	Responsibility	Guidance & Tools
	and/or previously agreed management strategies. The Project Manager and regional environment staff must provide all relevant documents to the archaeologist to assist with this. Discussions should occur with design engineers to consider if re-design options exist and are appropriate.		
4.3	The archaeologist must submit this plan as a letter, brief report or email to the Project Manager outlining all relevant archaeological or heritage issues. This plan should be submitted to the Project Manager as soon as practicable. Given that the archaeological management plan is an overview of all the necessary requirements (and the urgency of the situation), it should take no longer than two working days to submit to the Project Manager.	A	
4.4	The Project Manager or Works Supervisor must review the archaeological or heritage management plan to ensure all requirements can reasonably be implemented. Seek additional advice from regional environment staff and Roads and Maritime heritage staff, if required.	PM/RES/SES(H)/ WS-RMD	
5	**Notify the regulator, if required.**		
5.1	Review the archaeological or heritage management plan to confirm if regulator notification is required. Is notification required? If **no**, proceed directly to Step 6 If **yes**, proceed to next step.	PM/RES/SES(H)/ WS-RMD	
5.2	If notification is required, complete the template notification letter.	PM or WS-RMD	**Appendix G** (Template Notification Letter)
5.3	Forward the draft notification letter, archaeological or heritage management plan and the site recording form to regional environment staff and Senior Environmental Specialist (Heritage) for review, and consider any suggested amendments.	PM/RES/SES(H)/ WS-RMD	

Step	Task	Responsibility	Guidance & Tools
5.4	Forward the signed notification letter to the relevant regulator (ie notification of relics must be given to the Heritage Division, Office of Environment and Heritage (OEH), while notification for Aboriginal objects must be given to the relevant Aboriginal section of OEH). Informal notification (via a phone call or email) to the regulator prior to sending the letter is appropriate. The archaeological management plan and the completed site recording form must be submitted with the notification letter. For Part 3A and Part 5.1 projects, the Department of Planning and Environment must also be notified.	PM or WS-RMD	**Appendix D** (Key Environmental Contacts)
5.5	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form should be kept on file by the Project Manager or Works Supervisor- RMD and a copy sent to the Senior Environmental Specialist (Heritage).	PM or WS-RMD	
6	**Implement archaeological or heritage management plan**		
6.1	Modify the archaeological or heritage management plan to take into account any additional advice resulting from notification and discussions with the regulator.	A/PM or WS-RMD (RES)	
6.2	Implement the archaeological or heritage management plan. Where impact is expected, this would include such things as a formal assessment of significance and heritage impact assessment, preparation of excavation or recording methodologies, consultation with registered Aboriginal parties, obtaining heritage approvals etc, if required.	PM or WS-RMD (RAPs and RES)	PACHCI Stage 3
6.3	Where heritage approval is required contact regional environment staff for further advice and support material. Please note time constraints associated with heritage approval preparation and processing. Project scheduling may need to be revised where extensive delays are expected.	PM/RES/WS-RMD	
6.4	For Part 3A/Part 5.1 projects, assess whether heritage impact is consistent with the project approval or if project approval modification is required from the Department of Planning and Environment. Seek advice from regional environment staff and Environment Branch specialist staff if unsure.	PM/RES	

Step	Task	Responsibility	Guidance & Tools
6.5	Where statutory approvals (or project approval modification) are required, impact upon relics and/or Aboriginal objects must not occur until heritage approvals are issued by the appropriate regulator.	PM or WS-RMD	
6.6	Where statutory approval (or Part 3A/Part 5.1 project modification) is not required and where recording is recommended by the archaeologist, sufficient time must be allowed for this to occur.	PM or WS-RMD	
6.7	Ensure short term and permanent storage locations are identified for archaeological material or other heritage material is removed from site, where required. Interested third parties (eg museums or local councils) should be consulted on this issue. Contact regional environment staff and Senior Environmental Specialist (Heritage) for advice on this matter, if required.	PM or WS-RMD	
7	**Review CEMPs and approval conditions**		
7.1	Check whether written notification is required to be sent to the regulator before re-commencing work. Where this is not explicit in heritage approval conditions, expectations should be clarified directly with the regulator.	PM	
7.2	Update the CEMP, site mapping and project delivery program as appropriate with any project changes resulting from final heritage management (eg retention of heritage item, salvage of item). Updated CEMPs must incorporate additional conditions arising from any heritage approvals, and Aboriginal community consultation if relevant. Include any changes to CEMP in site induction material and update site workers during toolbox talks.	PM	
8	**Resume work**		
8.1	Seek written clearance to resume project work from regional environment staff and the archaeologist (and regulator, if required). Clearance would only be given once all archaeological excavation and/or heritage recommendations (where required) are complete. Resumption of project work must be in accordance with the all relevant project/heritage approvals/determinations.	RES/A/PM/WS-RMD	
8.2	If required, ensure archaeological excavation/heritage reporting and other heritage	PM/A/WS-RMD	

Step	Task	Responsibility	Guidance & Tools
	approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies.		
8.3	Forward all heritage/archaeological assessments, heritage location data and its ownership status to the Senior Environmental Specialist (Heritage). They will ensure all heritage items in Roads and Maritime ownership and/or control are considered for the Roads and Maritime S170 Heritage and Conservation Register.	PM/SES(H)/ WS-RMD	
8.4	If additional unexpected items are discovered this procedure must begin again from Step 1.	PM/TL-RMD	

8 Seeking advice

Advice on this procedure should be sought from Roads and Maritime regional environment staff in the first instance. Contractors and alliance partners should ensure their own project environment managers are aware of and understand this procedure. Regional environment staff can assist non-Roads and Maritime project environment managers with enquires concerning this procedure.

IMPORTANT!

Roads and Maritime Services staff and contractors are not to seek advice on this procedure directly from the Office of Environment and Heritage without first seeking advice from regional environment staff and heritage policy staff.

Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from the contracted archaeologist. Technical specialist advice can also be sought from heritage policy staff within Environment Branch to assist with the preliminary archaeological identification and technical reviews of heritage/archaeological reports.

9 Related information

Contact details: Senior Environmental Specialist (Heritage), Environment Branch, 02 8588 5754

Effective date: 01 February 2015

Review date: 01 February 2016

This procedure should be read in conjunction with:

- Roads and Maritimes' *Heritage Guidelines 2015.*
- Roads and Maritime Services *Environmental Incident Classification and Reporting Procedure*
- Roads and Maritime's *Procedure for Aboriginal Cultural Heritage Consultation and Investigation*
- RTA *Environmental Impact Assessment Guidelines.*

This procedure replaces:

- Procedure 5.5 ("*unexpected discovery of an archaeological relic or Aboriginal object*") outlined in the RTA's *Heritage Guidelines* 2004.

Other relevant reading material:

- NSW Heritage Office (1998), *Skeletal remains: guidelines for the management of human skeletal remains*.
- Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal remains.*
- Department of Health (April 2008), *Policy Directive: Burials - exhumation of human remains*[11]*.*

[11] http://www.health.nsw.gov.au/policies/pd/2008/pdf/PD2008_022.pdf

Appendix A

Identifying Unexpected Heritage Items

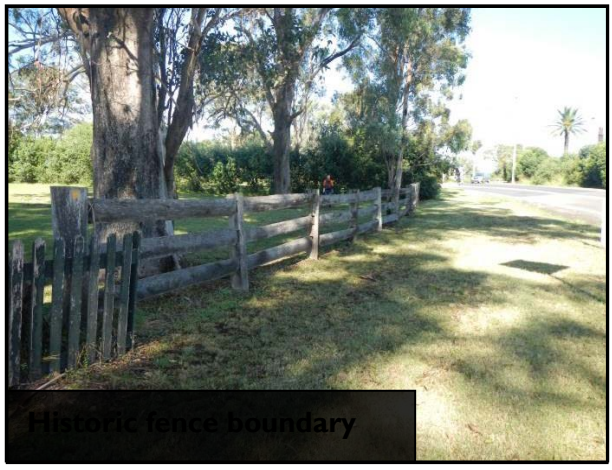
The following images can be used to assist in the preliminary identification of potential unexpected items (both Aboriginal and non-Aboriginal) during construction and maintenance works. Please note this is not a comprehensive typology.

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

Top left hand picture continuing clockwise: Woodstave water pipe with tar and wire sealing (Horsley Drive); Tram tracks (Sydney); Brick lined cistern (Clyde); Retaining wall (Great Western Highway, Leura).

Top left hand picture continuing clockwise: Road pavement (Great Western Highway, Lawson); Sandstone kerbing and guttering (Parramatta Road, Mays Hill); Telford road (sandstone road base, Great Western Highway, Leura); Ceramic conduit and sandstone culvert headwall (Blue Mountains, NSW); Corduroy road (timber road base, Entrance Road, Wamberai).

Top left hand corner continuing clockwise: Alignment Pin (Great Western Highway, Wentworth Falls); Survey tree (MR7, Albury); Survey tree (Kidman Way, Darlington Point, Murrumbidgee); Survey tree (Cobb Highway, Deniliquin); Milestone (Great Western Highway, Kingswood, Penrith); Alignment Stone (near Guntawong Road, Riverstone). Please note survey marks may have additional statutory protection under the *Surveying and Spatial Information Act 2002*.



Top left hand corner continuing clockwise: Remnant bridge piers (Putty Road, Bulga); Wooden boundary fence (Campbelltown Road, Denham Court); Dairy shed (Ballina); Golden Arrow Mine Shaft.

Top left hand corner: Culturally modified stone discovered on Main Road 92, about two kilometres west of Sassafras. The remaining images show a selection of stone

artefacts retrieved from test and salvage archaeological excavations during the Hume Highway Duplication and Bypass projects from 2006-2010.

Appendix B

Unexpected Heritage Item Recording Form 418

Unexpected heritage item recording form

Date:		**Recorded by:** (Include name and position)	
Project name:			
Description of works being undertaken (eg Removal of failed pavement by excavation and pouring concrete slabs in 1m x 1m replacement sections).			
Description of exact location of item (eg Within the road formation on Parramatta Road, east bound lane, at the corner of Johnston Street, Annandale, Sydney).			

Description of item found (What type of item is it likely to be? Tick the relevant boxes).

A. A relic	☐	A 'relic' is evidence of a past human activity relating to the settlement of NSW with local or state heritage significance. A relic might include bottles, utensils, plates, cups, household items, tools, implements, and similar items.
B. A 'work, building or structure'	☐	A 'work' can generally be defined as a form infrastructure such as tram tracks, a culvert, road base, a bridge pier, kerbing, and similar items.
C. An Aboriginal object	☐	An 'Aboriginal object' may include stone tools, stone flakes, shell middens, rock art, scarred trees and human bones.
D. Bone	☐	Bones can either be human or animal remains. **Remember that you must contact the local police immediately by telephone if you are certain that the bone(s) are human remains.**
E. Other	☐	

Provide short description of item (eg Metal tram tracks running parallel to road alignment. Good condition. Tracks set in concrete, approximately 10cms (100 mm) below the current ground surface).	

Sketch
(Provide a sketch of the item's general location in relation to other road features so its approximate location can be mapped without having to re-excavate it. In addition, please include details of the location and direction of any photographs of the item taken).

Action taken (Tick either A *or* B)

A. Unexpected item **would not** be further impacted on by works ☐

Describe how works would avoid impact on the item. (eg The tram tracks will be left *in situ*, and recovered with road paving).

B. Unexpected item **would be** further impacted on by works ☐

Describe how works would impact on the item. (eg Milling is required to be continued to 200 mm depth to ensure road pavement requirements are met. Tram tracks will need to be removed).

Project manager / works supervisor signature	

Appendix C

Photographing Unexpected Heritage Items

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

Context and detailed photographs

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

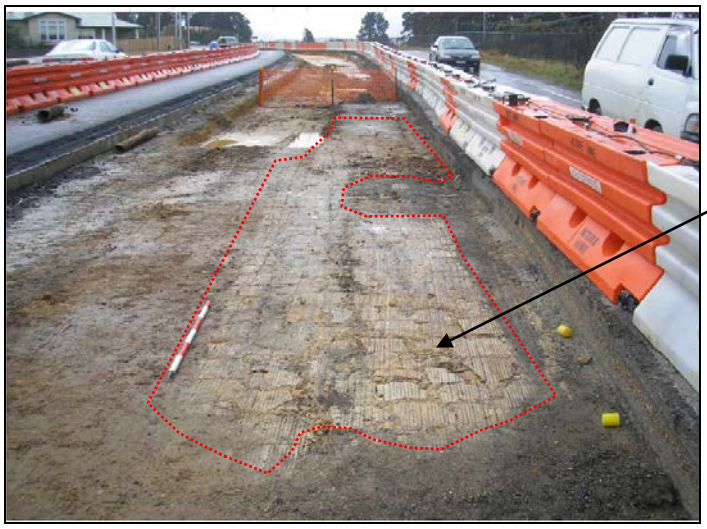


Figure 2: Close up detail of the sandstone surface showing material type, formation and construction detail. This is essential for establishing date of the feature.

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

Photographing distinguishing features

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

Figure 3: Ceramic bottle artefact with stamp.

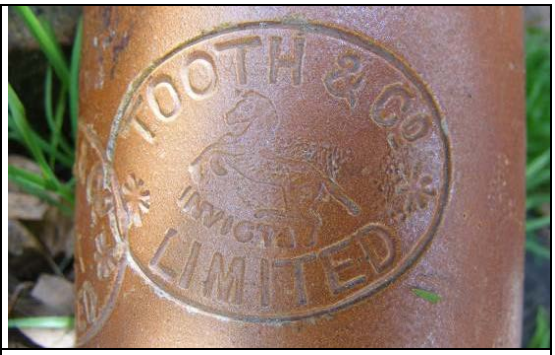


Figure 4: Detail of the stamp allows '*Tooth & Co Limited*' to be made out. This is helpful to a specialist in gauging the artefact's origin, manufacturing date and likely significance.

Photographing bones

The majority of bones found on site will those of be recently deceased animal bones often requiring no further assessment (unless they are in archaeological context). However, if bones are human, Roads and Maritime must contact the police immediately (see Appendix F for detailed guidance). Taking quality photographs of the bones can often resolve this issue quickly. Heritage staff in Environment Branch can confirm if bones are human or non-human if provided with appropriate photographs.

Ensure that photographs of bones are not concealed by foliage (Figure 5) as this makes it difficult to identify. Minor hand removal of foliage can be undertaken as long as disturbance of the bone does not occur. Excavation of the ground to remove bone(s) should not occur, nor should they be pulled out of the ground if partially exposed. Where sediment (adhering to a bone found on the ground surface) conceals portions of a bone (Figure 6) ensure the photograph is taken of the bone (if any) that is not concealed by sediment.

Figure 5: Bone concealed by foliage.

Figure 6: Bone covered in sediment

Ensure that all close up photographs include the whole bone and then specific details of the bone (especially the ends of long bones, the *epiphysis*, which is critical for species identification). Figures 7 and 8 are examples of good photographs of bones that can easily be identified from the photograph alone. They show sufficient detail of the complete bone and the epiphysis.

Figure 7: Photograph showing complete bone.

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

Appendix C

Key Environmental Contacts

Key environmental contacts

Hunter region	Environmental Manager (Hunter)	4924 0440
	Aboriginal Cultural Heritage Advisor	4924 0383
Northern region	Environment Manager (North)	6640 1072
	Aboriginal Cultural Heritage Advisor	6604 9305
Southern region	Environmental Manager (South)	6492 9515
	Aboriginal Cultural Heritage Advisor	4221 2767
South West region	Environment Manager (South West)	6937 1634
	Aboriginal Cultural Heritage Advisor	6937 1647
Sydney region	Environment Manager (Sydney)	8849 2516
	Aboriginal Cultural Heritage Advisor	8849 2583
Western region	Environment Manager (West)	6861 1628
	Aboriginal Cultural Heritage Advisor	6861 1658
Pacific Highway Office	Environment Manager	6640 1375
Regional Maintenance Delivery	Environment Manager	9598 7721
Environment Branch	Senior Environmental Specialist (Heritage)	8588 5754

Heritage Regulators

Heritage Division Office of Environment and Heritage Locked Bag 5020 Parramatta NSW 2124 Phone: (02) 9873 8500	Department of the Environment (Clth) GPO Box 787 Canberra ACT 2601 Phone: (02) 6274 1111
Office of Environment and Heritage (Sydney Metropolitan) Planning and Aboriginal Heritage Section PO Box 668 Parramatta NSW 2124 Phone: (02) 9995 5000	Office of Environment and Heritage (North Eastern NSW) Planning and Aboriginal Heritage Section Locked Bag 914 Coffs Harbour NSW 2450 Phone: (02) 6651 5946
Office of Environment and Heritage (North Western NSW) Environment and Conservation Programs PO Box 2111 Dubbo NSW 2830 Phone: (02) 6883 5330	Office of Environment and Heritage (Southern NSW) Landscape and Aboriginal Heritage Protection Section PO Box 733 Queanbeyan NSW 2620 Phone: (02) 6229 7188

Project-Specific Contacts

Position	Name	Phone Number
Project Manager		
Site/Alliance Environment Manager		
Regional Environmental Officer		
Aboriginal Cultural Heritage Advisor		
Consultant Archaeologist		
Local Police Station		
OEH: Environment Line		131 555

Appendix E

Uncovering Bones

This appendix provides Project Managers with (1) advice on what to do when bones are discovered; (2) guidance on the notification pathways; and (3) additional considerations and requirements when managing the discovery of human remains.

1. First uncovering bones

Stop all work in the vicinity of the find. All bones uncovered during project works should be **treated with care and urgency** as they have the potential to be human remains. Therefore they must be identified as either human or non-human as soon as possible by a qualified forensic or physical anthropologist. These specialist consultants can be sought by contacting regional environment staff and/or heritage staff at Environment Branch.

On the very rare occasion where it is *instantly obvious* from the remains that they are human, the Project Manager (or a delegate) should **inform the police by telephone** prior to seeking specialist advice. It will be obvious that it is human skeletal remains where there is no doubt, as demonstrated by the example in Figure 1. Often skeletal elements in isolation (such as a skull) can also clearly be identified as human. Note it may also be obvious that human remains have been uncovered when soft tissue and clothing are present.

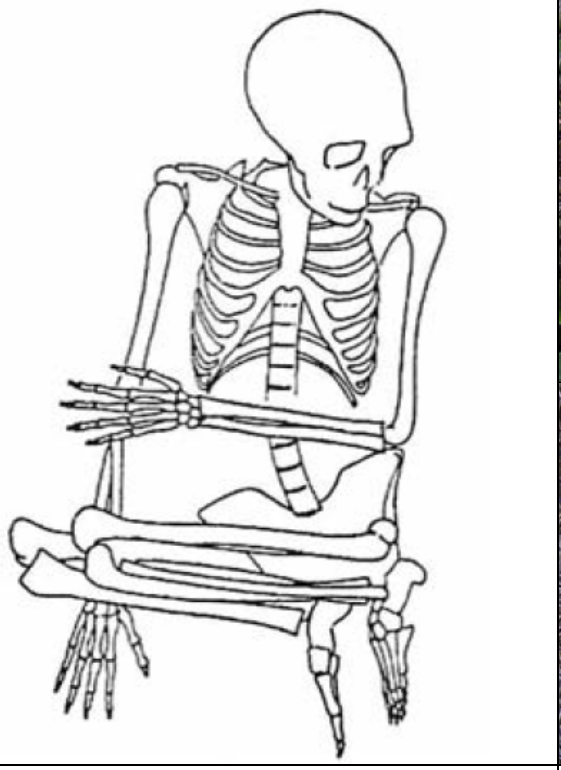


Figure 1: Schematic of a complete skeleton that is 'obviously' human[12].

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

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

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

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

If the bones are identified as human (either by photographs or an on-site inspection) a technical specialist must determine the likely ancestry (Aboriginal or non-Aboriginal) and burial context (archaeological or forensic). This assessment is required to identify the legal regulator of the human remains so **urgent notification** (as below) can occur. Preliminary telephone or verbal notification by the Project Manager or regional environment staff is considered appropriate. This must be followed up later by Roads and Maritime's formal letter notification as per Appendix G when a management plan has been developed and agreed to by the relevant parties.

2. Range of human skeletal notification pathways

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

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

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

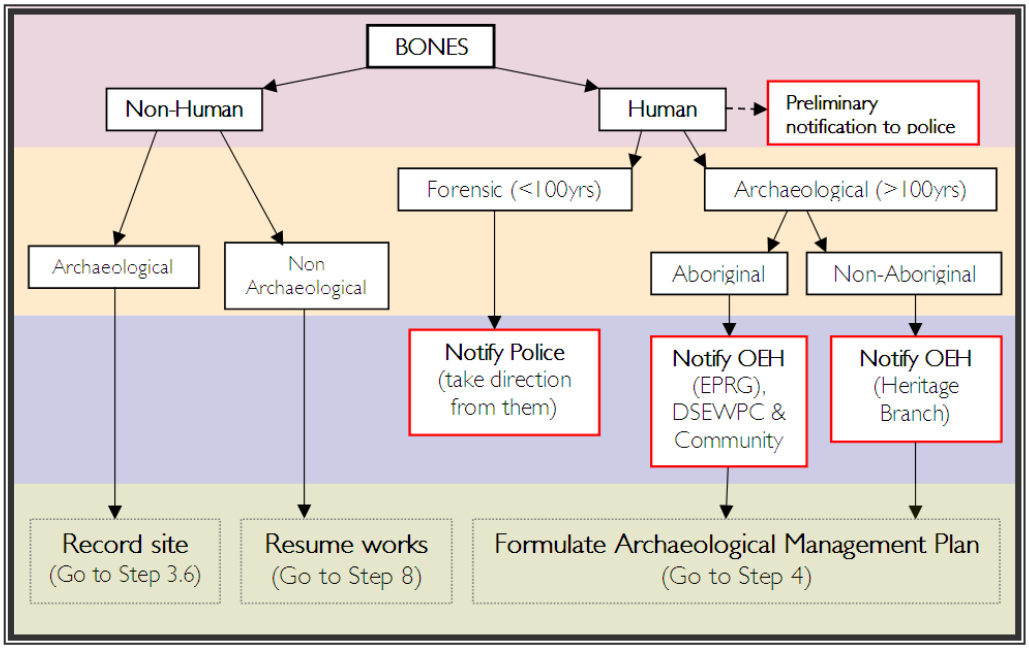
B. Human bones are archaeological in nature (*more than* 100 years old) and are likely to be *Aboriginal* remains.

> **☑ Action**
> The OEH and the RMS Aboriginal Cultural Heritage Advisor (ACHA) must be notified immediately. The ACHA must contact and inform the relevant Aboriginal community stakeholders who may request to be present on site. Relevant stakeholders are determined by the RTA's *Procedure for Aboriginal Cultural Heritage Consultation and Investigation*.

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

> **☑ Action**
> The OEH (Heritage Branch, Conservation Team) must be notified immediately.

The simple diagram below summarises the notification pathways on finding bones.



After the appropriate verbal notifications (as described in B and C), the Project Manager must proceed through the *Unexpected Heritage Items Procedure* to formulate an archaeological management plan (Step 4). Note no archaeological management plan is required for forensic cases (A), as all future management is a police matter. Non-human skeletal remains must be treated like any other unexpected archaeological find and so must proceed to recording the find as per Step 3.6.

3. Additional considerations and requirements

Uncovering archaeological human remains must be managed intensively and needs to consider a number of additional specific issues. These issues might include facilitating culturally appropriate processes when dealing with Aboriginal remains (such as repatriation and cultural ceremonies). Roads and Maritime's ACHA can provide advice on this and how to engage with the relevant Aboriginal community. Project Managers, more generally, may also need to consider overnight site security of any exposed remains and may need to manage the onsite attendance of a number of different external stakeholders during assessment and/or investigation of remains. Project Managers may also be advised to liaise with local church/religious groups and the media to manage community issues arising from the find. Additional investigations may be required to identify living descendants, particularly if the remains are to be removed and relocated.

If exhumation of the remains (from a formal burial or a vault) is required, Project Managers should also be aware of additional approval requirements under the *Public Health Act 1991* (NSW). Specifically, Roads and Maritime is required to apply to the Director General of NSW Department of Health for approval to exhume human remains as per Clause 26 of the *Public Health (Disposal of Bodies) Regulation 2002* (NSW)[13]. Further, the exhumation of such remains needs to consider health risks such as infectious disease control, exhumation procedures and reburial approval and registration. Further guidance on this matter can be found at the NSW Department of Health website.

In addition, due to the potential significant statutory and common law controls and prohibitions associated with interfering with a public cemetery, project teams are

[13] This requirement is in addition to heritage approvals under the *Heritage Act 1977*.

advised, when works uncover human remains adjacent to cemeteries, to confirm the cemetery's exact boundaries.

Appendix F

Archaeological Heritage Advice Checklist

The following checklist can be used by the Project Manager and the archaeologist to ensure all relevant archaeological issues are considered when developing the management plan required at Step 4 of this procedure.

An archaeological or heritage management plan can include a range of activities and processes, which differ depending on the find and its significance.

	Required	**Outcome/notes**
Assessment and investigation		
• Assessment of significance	Yes/No	
• Assessment of heritage impact	Yes/No	
• Archaeological excavation	Yes/No	
• Archival photographic recording	Yes/No	
Heritage approvals and notifications		
• AHIPs, Section 140, S139 exceptions etc	Yes/No	
• Regulator relics/objects notification	Yes/No	
• Roads and Maritime's S170 Heritage and Conservation Register listing requirements	Yes/No	
• Compliance with CEMP or other project heritage approvals	Yes/No	
Stakeholder consultation		
• Aboriginal stakeholder consultation requirements and how it relates to RTA *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (PACHCI).	Yes/No	
• Advice from regional environmental staff, Aboriginal Cultural Heritage Advisor, Roads and Maritime heritage team.	Yes/No	
Artefact/ heritage item management		
• Retention or conservation strategy (eg items may be subject to long conservation and interpretation) • Disposal strategy (eg former road pavement) • Short term and permanent storage locations (interested third parties should be consulted on this issue).	Yes/No	
• Control Agreement for Aboriginal objects.	Yes/No	
Program and budget		
• Time estimate associated with archaeological or heritage conservation work.		
• Total cost of archaeological/heritage work.		

Appendix G

Template Notification Letter

PASTE INTO RMS LETTER TEMPLATE

"[Select and type date]"

[Select and type reference number]

[Select and type file number]

[Insert recipient's name and address, see **Appendix D**]

[Select and type salutation and name],

Re: Unexpected heritage item discovered during Roads and Maritime Services project works.

I write to inform you of an unexpected [select: relic, heritage item or Aboriginal object] found during Roads and Maritime Services construction works at [insert location] on [insert date]. [Where the regulator has been informally notified at an earlier date by telephone, this should be referred to here].

This letter is in accordance with the notification requirement under [select: Section 146 of the *Heritage Act 1977* (NSW) or Section 89(A) of the *National Parks and Wildlife Act 1974* (NSW) **NB:** There may be not be statutory requirement to notify of the discovery of a 'heritage Item that is not a relic or Aboriginal object].

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

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

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

Resulting from these preliminary findings, Roads and Maritime Services *[or contractor]* is proposing [provide a summary of the proposed archaeological/heritage approach (eg develop archaeological research design (where relevant), seek heritage approvals, undertake archaeological investigation or conservation/interpretation strategy). Also include preliminary justification of such heritage impact with regard to project design constraints and delivery program].

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

Please contact me if you have any input on this approach or if you require any further information.

Yours sincerely

[Sender name and position]

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

About this release

Reference number	RMS 12.003 **|** PN 285 P02
Title	Unexpected Heritage Items Procedure
Parent procedure	RMS Heritage Guidelines
Prepared by	Environment Officer (Heritage) Gretta Logue Environment Officer (Heritage) Daniel Percival
Approved by	Manager Environmental Policy, Planning and Assessment Michael Crowley
Document location	Objective - SF2013/153770 / Unexpected heritage items procedure.doc
Document status	Version 1.0, 16 March 2015

Version	Date	Revision description
1.0	01/11/11	First issue
Revised	23 July 2012	Amended to reflect that (a) unexpected finds do not include items covered by a relevant approval; (b) Aboriginal people must be consulted where an unexpected find is likely to be an Aboriginal object; (c) the Department of Planning and Environment must be notified in accordance with Step 5 of this procedure for Part 3A and Part 5.1 projects.
Revised	09 October 2013	Amended to clarify that the procedure applies to all types of unexpected heritage items, not just archaeological items. The procedure introduces the term 'Historic Items' to cover both 'archaeological relics' and 'other historic items' such as works, structures, buildings and movable objects. The title of the document has been amended to better reflect this clarification.
Revised	16 March 2015	The procedure was streamlined to address all project types including maintenance works. The separate maintenance procedure (formerly Appendix B) was removed. Names and titles updated throughout.

Your comments and suggestions to improve this or any of the Heritage Guidelines and associated documents may be sent to:

Senior Environmental Specialist (Heritage)
Environmental Policy, Planning and Assessment
Environment Branch, Roads and Maritime Services
Level 17, 101 Miller Street
North Sydney, NSW 2060
Ph: 8588 5726

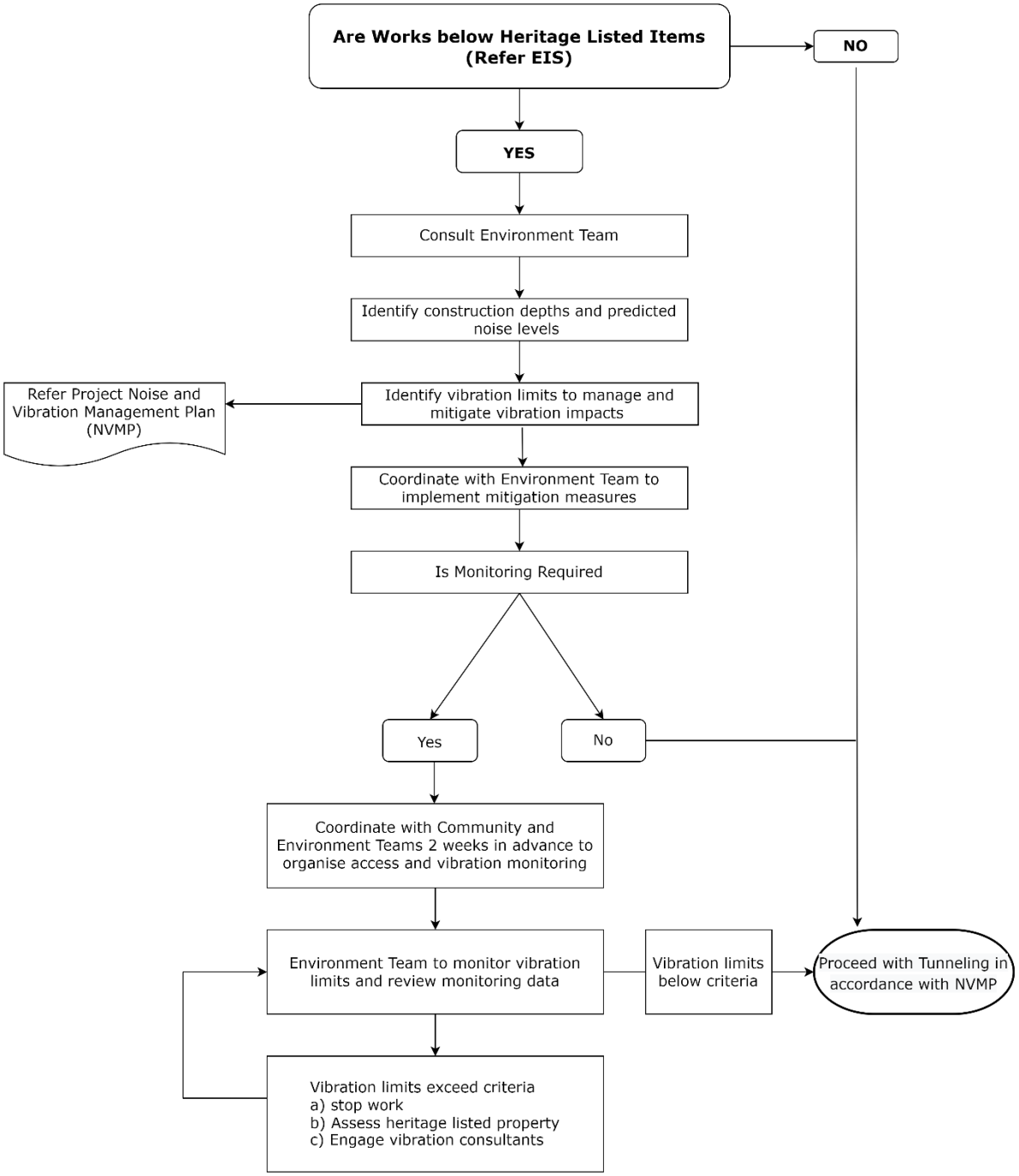
rms.nsw.gov.au

heritage@rms.nsw.gov.au

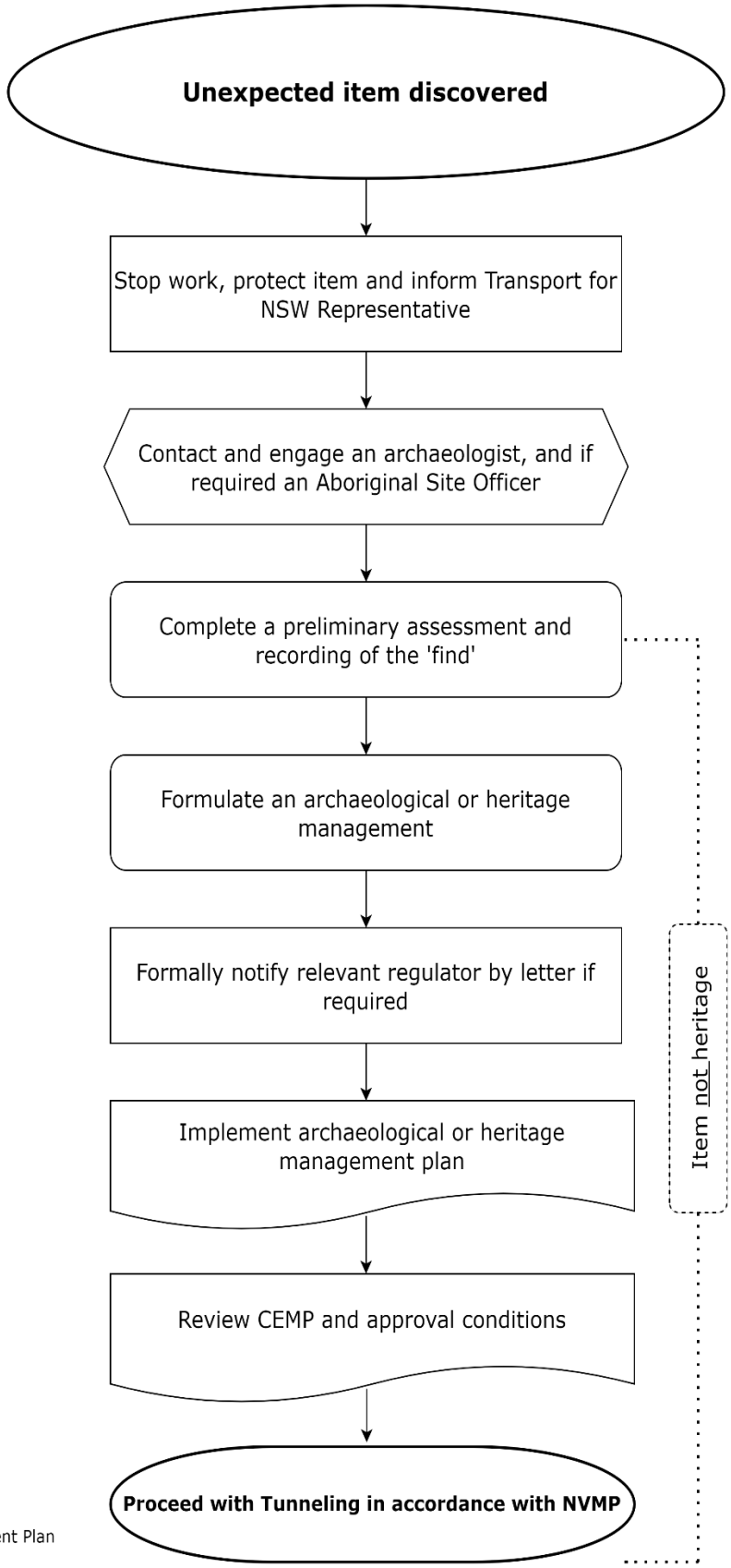
Customer feedback
Roads and Maritime
Locked Bag 928,
North Sydney NSW 2059

Transport
Roads & Maritime
Services

Attachment B – Flowchart Process for Managing works under Heritage Listed Items to manage potential vibration impacts

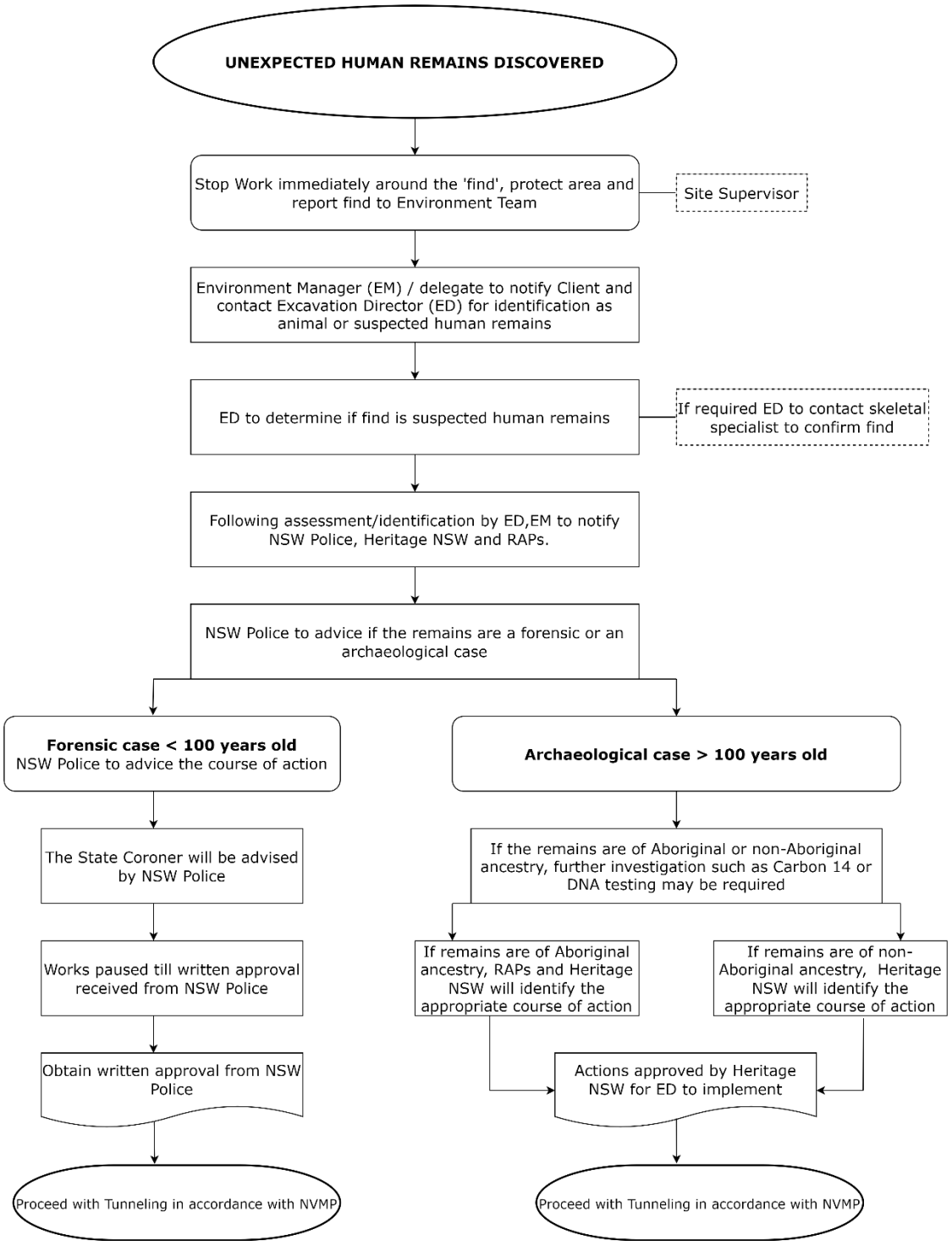


Attachment C - Overview flowchart of Unexpected Heritage Finds/ Item Procedure



NVMP - Noise & Vibration Management Plan

Attachment D- Unexpected Human Skeletal Remains Process Flowchart



NVMP - Noise & Vibration Management Plan

Attachment E - Heritage listed properties in identified in the WHT Tunnelling CNVIS

Appendix H Soil and Surface Water Management Sub-plan