

# Construction Environmental Management Plan

## M4-M8 Link Project

Transport for New South Wales | February 2025



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## Emergency and Key Contact List

| Position  | Name   | Phone  |
|---|--|--|
| EPA pollution hotline                                   |  | 131 555  |
| Fire and Rescue NSW                                     |  | 000 (for pollution incidents that present an immediate threat to human health or property)<br><br>1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property) |
| The Ministry of Health                                  | Royal Prince Alfred Hospital<br>Missenden Road,<br>Camperdown, NSW, 2050 | (02) 9515 6111   |
| SafeWork NSW  |  | 131 050  |
| Inner West Council                                      |  | (02) 9392 5000   |
| 24 hour community information line                      |  | 1800 660 248   |
| Environmental Manager                                   | Miguel Canas   |  |
| Community Manager                                       | Shelley Addison-Bell   |  |
| Project Manager   | Ryan Wilkie  |  |
| Superintendent  | Colin Shaw   |  |
| Environmental Representative                            | Cameron Weller   |  |
| Acoustic Advisor  | John Hutchison   |  |
| Transport for NSW Environmental Representative          | Rhonda Pollard   |  |
| Transport for NSW Senior Project Manager Representative | Robert Strong  |  |

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# Document Control

## Approval and authorisation

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|--|--|
| Title  | M4-M8 Link Rozelle Parklands Facilities Enhancement-<br>Construction Environmental Management Plan |
| Endorsed by Environment<br>Representative          | Cameron Weller   |
| Signed   |                   |
| Dated  | 08/03/2024   |
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| Dated  | 04/03/2024   |
| Approved on behalf of Ford<br>Civil Contracting by | Miguel Canas   |
| Signed   |                 |
| Dated  | 24/02/25   |

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| Rev 2    | 10.04.2024 | Addressing DPHI comments  | TfNSW Environment Manager |
| Rev 3    | 29.05.2024 | Addressing DPHI comments  | TfNSW Environment Manager |
| Rev 4    | 14.08.2024 | Minor update to haulage route and complaints email address                  | TfNSW Environment Manager |
| Rev 5    | 11.10.2024 | Minor update to Rozelle Parklands Enhancement Facilities project footprint  | TfNSW Environment Manager |
| Rev 6    | 25.10.2024 | Inclusion of additional scope for AFL Goal Post installation                | TfNSW Environment Manager |
| Rev 7    | 7.02.2025  | Inclusion of additional scope for Exeloo sewer connection & utility details | TfNSW Environment Manager |

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## Glossary/ Abbreviations

| Abbreviation           | Expanded text  |
|------------------------|--|
| AA                     | The Acoustics Advisor for the CSSI approved by the Planning Secretary  |
| Aboriginal object      | May include a shell midden, stone tools, bones, rock art or a scarred tree   |
| Ancillary facility     | A temporary facility for construction of the project including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory, material stockpile area, car parking compound and truck marshalling facility. |
| CEMP                   | Construction Environmental Management Plan   |
| Compliance audit       | Verification of how implementation is proceeding with respect to a CEMP (which incorporates the relevant approval conditions).   |
| CoA                    | Conditions of approval   |
| Construction site      | An individual work site required to construct each additional facility within Rozelle Parklands  |
| CSSI                   | Critical State Significant Infrastructure  |
| DBYD                   | Dial Before You Dig  |
| DPHI                   | Former NSW Department of Planning and Environment, now known as the NSW Department of Planning, Housing and Infrastructure (DPHI)  |
| EIS                    | WestConnex M4-M5 Link Environmental Impact Statement (August 2017)   |
| EMS                    | Environmental Management System  |
| Environmental heritage | Places, buildings, works, relics, movable objects and precincts, of State or local heritage significance as defined in Section 4 of the Heritage Act   |
| 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 unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment.   |
| Environmental policy   | Statement by an organisation of its intention and principles for environmental performance.  |
| EPA                    | NSW Environment Protection Authority   |
| EP&A Act               | <i>Environmental Planning and Assessment Act 1979</i> (NSW)  |
| ER                     | The Environmental Representative(s) for the CSSI approved by the Planning Secretary  |
| ESCP                   | Erosion and Sediment Control Plan  |
| EWMS                   | Environmental work method statement  |
| High Impact            | Works that are to be undertaken during Main Works  |



|                  |  |
|------------------|--|
| Hold point       | Is a verification point that prevents work from commencing prior to approval from Transport for NSW  |
| ISO              | International Organisation for Standardisation   |
| Low impact works | <p>Includes:</p> <ul style="list-style-type: none"> <li>a) survey works including carrying out general alignment survey, installing survey controls (including installation of global positioning system (GPS)), installing repeater stations, carrying out survey of existing and future utilities and building and road dilapidation surveys;</li> <li>b) investigations including investigative drilling and excavation;</li> <li>c) the erection or removal of demountable buildings at ancillary facilities in approved locations;</li> <li>d) treatment of contaminated sites subject to the recommendations of a Site Contamination Report prepared in accordance with Condition E181;</li> <li>e) clearing of vegetation, as identified in the EIS and Submissions and Preferred Infrastructure Report;</li> <li>f) installation of mitigation measures including noise (excluding acoustic sheds), erosion and sediment controls and temporary exclusion fencing for sensitive areas;</li> <li>g) property acquisition adjustment works including installation of property fencing;</li> <li>h) low impact utility works defined and undertaken, in accordance with the approved Utility Management Strategy required under Condition E140;</li> <li>i) establishing minor construction ancillary facilities in accordance with Condition C24;</li> <li>j) archaeological testing under the Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010) or archaeological monitoring undertaken in association with [a]-[i] above to ensure that there is no impact on heritage items;</li> <li>k) other activities determined by the ER to have minimal environmental impact which may include construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access including access and egress to construction ancillary facilities; and</li> <li>l) maintenance of existing buildings and structures required to facilitate the carrying out of the CSSI.</li> </ul> <p>Notwithstanding the following works are not Low Impact Work:</p> <ul style="list-style-type: none"> <li>a) where heritage items or threatened species, or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016) are adversely affected or potentially adversely affected by any low impact work as defined in (a) to (l) above, unless otherwise determined by the Planning Secretary in consultation with Environment and Heritage or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation)</li> </ul> |
| Main Works       | A defined stage within the project Staging Report  |

|                |  |
|----------------|--|
| Minister, the  | Former NSW Minister for Planning and Public Spaces, now the NSW Minister for Planning and Public Spaces  |
| Non-compliance | A breach of the requirements of the project approval or any applicable licence, permit or legal requirements.  |
| NSW            | New South Wales  |
| Principal, the | Transport for NSW  |
| POEO Act       | <i>Protection of the Environment Operations Act 1997</i> (NSW)   |
| Project, the   | M4-M5 Link   |
| Relic          | 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 |
| REMM           | Revised Environmental Management Measure as detailed in the RtS  |
| ROL            | Road occupancy licence   |
| RtS            | M4-M5 Link Submissions and Preferred Infrastructure Report (January 2018)  |
| SAP            | Sensitive Area Plans   |
| Stage          | The M4-M5 Link Staging Report (Revision 06 dated June 2023)  |
| Stage 4 works  | Rozelle Parklands Facilities Enhancement (the Works)   |

# 1. Introduction

## 1.1 Overview

WestConnex is one of the NSW Government's key infrastructure projects, which aims to ease congestion, create employment opportunities and connect communities. The WestConnex program of works, together with the proposed Sydney Gateway project, will facilitate improved connections between western Sydney, Sydney Airport, Port Botany and south and south-western Sydney, as well as better connectivity between the important economic centres along Sydney's Global Economic Corridor and local communities.

Separate planning applications and assessments have been completed for each of the WestConnex projects. Transport for New South Wales (TfNSW) commissioned WestConnex to deliver the WestConnex project, on behalf of the NSW Government. The WestConnex program of works includes:

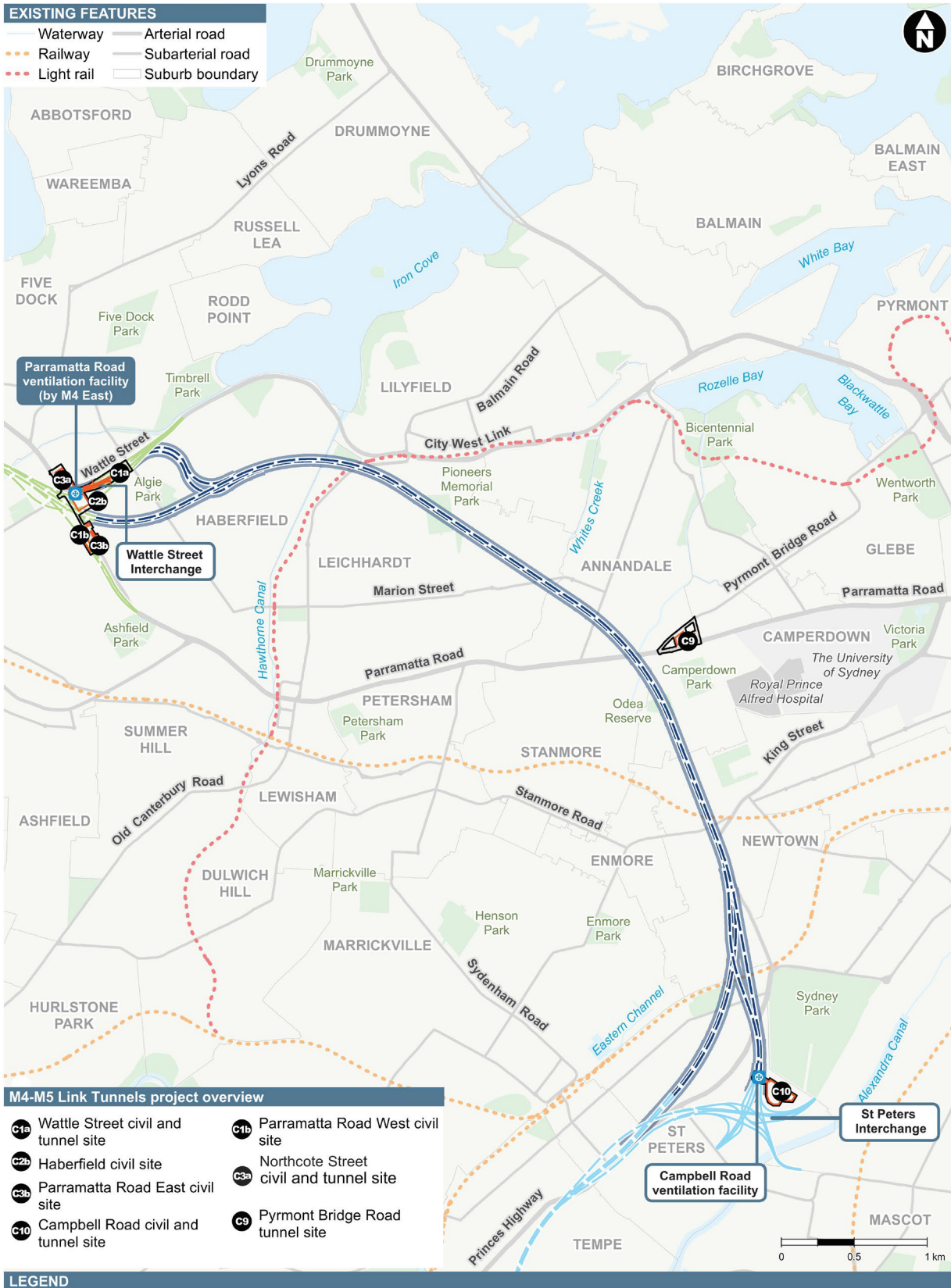
- New M4 consisting of:
  - M4 Widening – widening of the existing M4 Motorway from Parramatta to Homebush (open to traffic)
  - M4 East – extension of the M4 Motorway in tunnels between Homebush and Haberfield via Concord (open to traffic)
- King Georges Road Interchange Upgrade – upgrade of the King Georges Road interchange between the M5 West and M5 East at Beverly Hills (open to traffic)
- New M5 (now known as the M8) – duplication of the M5 East from King Georges Road at Beverly Hills with tunnels from Kingsgrove to a new interchange at St Peters (open to traffic)
- M4-M5 Link – tunnels connecting the M4 East at Haberfield and the New M5 at St Peters, an interchange at Rozelle and a link at Iron Cove (approved and under construction).

## 1.2 The M4-M8 Link

The M4-M8 Link project (the Project) is Critical State Significant Infrastructure (CSSI) and was granted planning approval and Part 5 Division 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act) on 17 April 2008 by the then NSW Minister for Planning. There have been six subsequent modifications to the planning approval.

The Project is new multi-lane road link between the M4 Motorway at Haberfield and the M8 Motorway at St Peters (refer to Figure 1-1) and includes an interchange at Lilyfield and Rozelle (the Rozelle interchange) and a tunnel connection between Anzac Bridge and Victoria Road, east of Iron Cove Bridge (Iron Cove Link) (refer to Figure 1-2). In addition, construction of tunnels, ramps and associated infrastructure to provide connections to the future Western Harbour Tunnel project will be carried out at the Rozelle interchange. Pedestrian and cyclist connectivity improvements will be delivered on Victoria Road and within the Rozelle local road network (refer to Figure 3). The Project will also transform of Rozelle Rail Yards into new public open space, which is the main design element of the Project as described in the Urban Design and Landscape Plan.

Transport for NSW is proposing to deliver enhanced facilities within Rozelle Parklands as part of this transformation (refer to Figure 1-3).



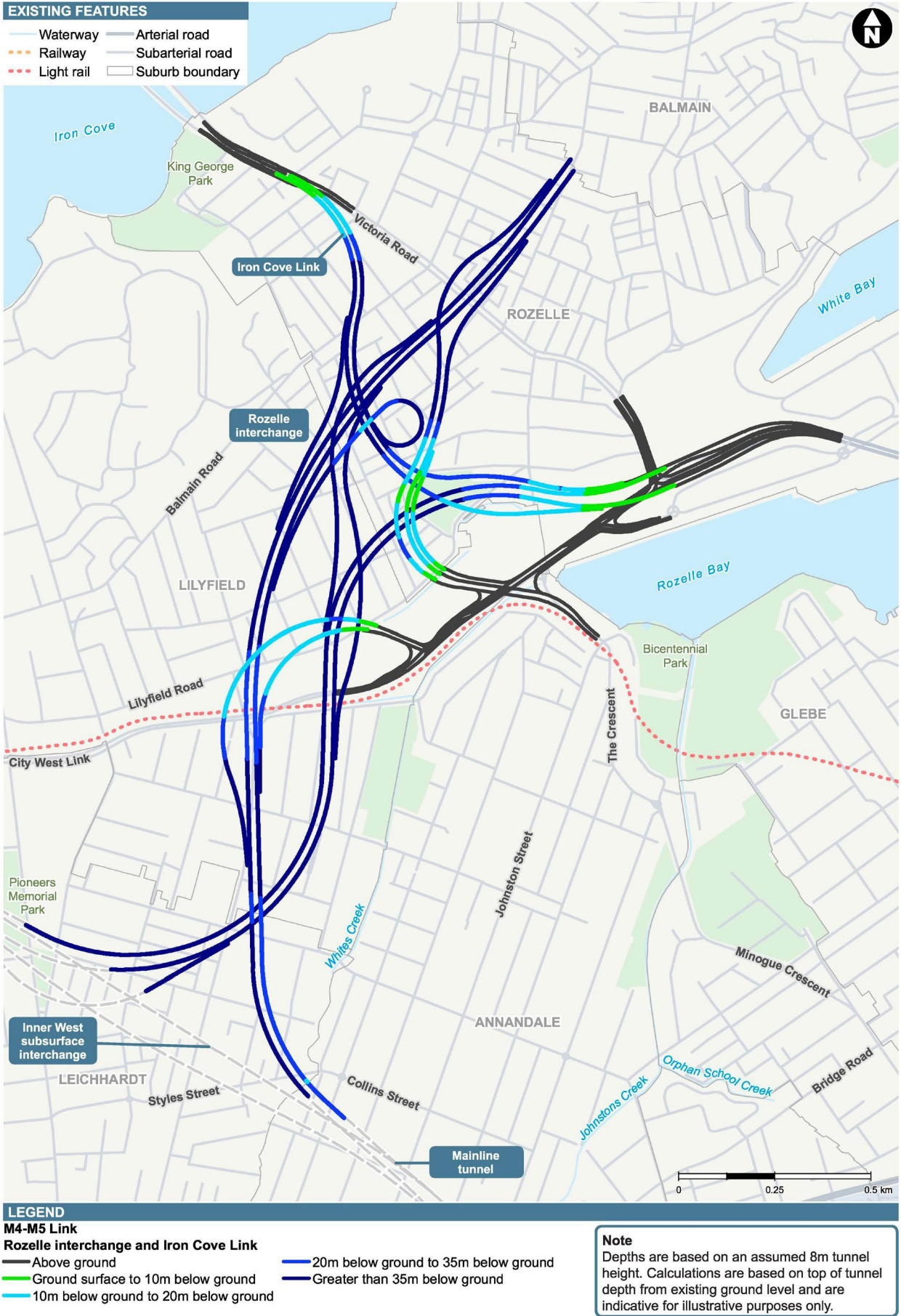


Figure 1-2 Overview of the Rozelle Interchange



Figure 4-12: Rozelle - Concept Plan - Drawing 2 of 4

Figure 1-3 Overview of the Rozelle Parklands Facilities Enhancements

### 1.3 Project Staging

The Project is being constructed in stages as outlined in the *Staging Report M4-M5 Link Project* (Transport for NSW, 2023). In summary, these stages are:

- Stage 1 - Mainline tunnels – construction of the Mainline tunnels between the M4 at Haberfield and the M8 at St Peters, stub tunnels to the Rozelle interchange (at the Inner West subsurface interchange), ancillary infrastructure at the Campbell Road motorway operations complex (MOC5) and fit out of the Parramatta Road ventilation facility.
- Stage 2 – Rozelle Interchange – construction of the Rozelle interchange and Iron Cove Link including connections to the stub tunnels at the M8 (built during Stage 1), ancillary infrastructure at the Rozelle West motorway operations complex (MOC2), Rozelle East motorway operations complex (MOC3) and Iron Cove Link motorway operations complex (MOC4) and connections to the surface road network at Lilyfield and Rozelle. This stage will also include the construction of tunnels, ramps and associated infrastructure for the Rozelle interchange to provide connections to the Western Harbour Tunnel project. The transformation of Rozelle Rail Yards into parklands will also be delivered as part of Stage 2.
- Stage 3 - Rozelle pedestrian and cycleway improvements – construction of improved pedestrian and cyclist connectivity south of Victoria Road, within the local road network between Springside Street and Roberts Street via the Rozelle Parklands. Pedestrian and cyclist connectivity will be improved with a range of initiatives including re-surfaced footpaths, traffic calming zones, cycle separators, improved signage and improved line-marking.
- Stage 4 – Rozelle Parklands Enhancement – construction of a second facilities building,

two multi-purpose courts, AFL goal posts, lighting towers over the AFL/cricket oval and soccer oval and an additional toilet. Further detail is provided in section 5.1 The remainder of the transformation of Rozelle Rail Yards into parklands is currently being as part of the Stage 2.

## **1.4 Context**

This Construction Environmental Management Plan (CEMP or Plan) is the main environmental management document that applies to the Stage 4 of the Project; Rozelle Parklands Facilities Enhancements (the Works)

This CEMP has been prepared to address requirements of the NSW Minister for Planning of Approval (CoA) for the Project, and applicable guidance and legislation.

It describes how the Contractor proposes to manage environmental impacts relating to the Works. Other stages of the Project are not included within this CEMP.

## **2. Purpose and objectives**

### **2.1 Purpose**

The purpose of this CEMP is to describe how TfNSW and the contractor proposes to manage potential environmental impacts during the Works.

This Plan has been prepared to address the applicable statutory requirements and aims to ensure that the commitments with regards environmental impacts are met.

This CEMP will be implemented for the duration of Construction.

### **2.2 Environmental Management System overview**

The Environmental Management System (EMS) is an integrated set of tools and resources that define how the project will manage environmental risks at all levels of the business. The Contractor will operate an environmental system compliant with AS/NZS ISO 14001.

This CEMP is part of the EMS and describes how the contractor will manage environmental issues during the Works. This CEMP shall be updated as necessary to ensure all components of the works construction are covered. All works that are for the purpose of establishing ancillary facilities will also be managed in accordance with the CEMP.

All works carried out on the site will be in accordance with this CEMP, incorporating the following requirements within this document:

- Relevant legislation
- EIS and CoA for the site
- The contractors Safety, Health, Environment and Quality Standards and Processes
- Transport for New South Wales's (TfNSW) Environment & Sustainability Policy
- Principal and Contractual Requirements
- ISO 14001 Environmental Management System
- TfNSW Environmental Guidelines
- The contractors Environmental Policy.

This CEMP, as part of the contractors EMS, will be implemented with compliance and performance monitored and reviewed through the broader context.

### **2.3 Objectives and Targets**

The objective of this Plan is to ensure that all avoidance, mitigation and environmental management measures relevant to the Works are properly implemented.

To achieve these objectives, the contractor will undertake the following:

- Ensure appropriate controls and procedures are implemented during their work activities to address potential environmental impacts, as well as manage risks arising from activities described in this plan and ongoing analysis by the contractor
- Ensure appropriate measures are implanted to address relevant CoA outlined in Table 3-2, as well as safeguards detailed in Table 3-3
- All relevant legislation and other requirements detailed in Section 3 of this Plan.



Table 2.1 details the objectives and targets for the Rozelle Parklands Facilities Enhancements.

Table 2-1 Objectives and Targets

| Objective   | Target   | Measurement tool   |
|---|--|--|
| Compliance with environmental approvals and Principal requirements  | <ul style="list-style-type: none"> <li>• All applicable conditions of approval and Principal requirements implemented throughout the project and within designated timeframes</li> <li>• No non-conformances identified during self-regulation</li> <li>• Close out the findings of ER inspections and reports within the timeframes determined based on risk assessment</li> <li>• Weekly inspections are undertaken</li> </ul> | <ul style="list-style-type: none"> <li>• Compliance reporting</li> <li>• Weekly environmental inspections and reports</li> <li>• Monthly environmental reports</li> <li>• Management review</li> </ul> |
| Compliance with all legal requirements.   | <ul style="list-style-type: none"> <li>• No regulatory infringements (PINs or prosecutions)</li> <li>• No formal regulatory warnings</li> <li>• No major environmental incidents</li> </ul>  | <ul style="list-style-type: none"> <li>• No formal regulatory warning</li> <li>• Compliance reporting</li> <li>• Management review</li> </ul>  |
| Implement a rigorous and comprehensive EMS that meets the requirements of AS/NZS ISO 14001  | <ul style="list-style-type: none"> <li>• Address non-conformances and corrective actions within specific timeframes</li> </ul>   | <ul style="list-style-type: none"> <li>• Compliance reporting</li> <li>• Management reviews</li> </ul>   |
| Engage with the affected and broader community, minimise avoidable complaints and respond to any complaints within a suitable timeframe | <ul style="list-style-type: none"> <li>• Disseminate regular project updates and other information through the project website and other tools in accordance with the Community Communication Strategy</li> <li>• Record and respond to complaints within the timeframe specified in the Community Communication Strategy</li> <li>• No avoidable complaints</li> </ul>  | <ul style="list-style-type: none"> <li>• Complaints register</li> <li>• Compliance report</li> <li>• Management review</li> </ul>  |
| Continuously improve environmental performance  | <ul style="list-style-type: none"> <li>• Develop and maintain a program of ongoing environmental training</li> <li>• Capture lessons learnt from environmental incidents to minimise repeat issues</li> </ul>  | <ul style="list-style-type: none"> <li>• Compliance report</li> <li>• Management review</li> </ul>   |

## 3. Environmental Requirements

### 3.1 Relevant legislation and guidelines

The works are to be undertaken in accordance with the terms of the CSSI approval and the:

- M4-M5 Link Environmental Impact Statement– Volumes 1A-C and 2A-J (dated August 2017) (the EIS); and
- M4-M5 Link Response to Submissions Report and Preferred Infrastructure Report (dated September 2020) (the RtS); and
- M4-M5 Link Project – Staging Report (dated October 2023).
- M4-M5 Link Project – Modifications 1, 2, 3, 4, 5, 7 and 8 (dated between February 2019 and August 2023)

The works will be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the CSSI Approval and Staging Report, which are as detailed in this document.

#### 3.1.1 Legislation

Legislation relevant to construction utilities includes:

- *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act)
- State Environmental Planning Policy (Transport and Infrastructure) 2021 (NSW)
- *Protection of the Environment Operations Act 1997* (NSW)(POEO Act)
- *Biodiversity Conservation Act 2016* (NSW)
- *Biosecurity Act 2015* (NSW)
- *National Parks and Wildlife Act 1974* (NSW)
- *Heritage Act 1977* (NSW)
- *Contaminated Land Management Act 1997* (NSW)(CLM Act)
- *Fisheries Management Act 1994* (NSW)
- *Water Act 1912* (NSW)
- *Water Management Act 2000* (NSW)
- *Roads Act 1993* (NSW)

#### 3.1.2 Additional approvals, licences, permits and requirements

No additional approvals, licences or permits are required for the Works.

#### 3.1.3 Guidelines

Standards, specifications, guidelines and policy documents are to be considered in conjunction with this Plan. Guidelines that apply to these works include:

- Transport for NSW Specification G36 – Environmental Protection (Management System)
- Transport for NSW Specification G38 – Soil and Water Management
- Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011)

- Construction Noise and Vibration Guideline (Transport for NSW, 2022)
- NSW Interim Construction Noise Guideline (ICNG), Department of Environment and Climate Change 2009
- British Standard 7385: Part 2-1993 'Evaluation and measurement of vibration in buildings'
- German Standard DIN4150-1999 Structural vibration Part 3: Effects of vibration on Structures
- EPA Waste classification guidelines: Part 1 Classifying Waste
- 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) – also known as the 'Blue Book'

### **3.1.4 Relevant Management Plans**

A *Long-term Environmental Plan Rozelle Interchange - sub-sites RY02, GC01, GC02 and GC04* (LTEMP) has been developed for Rozelle Parklands. The purpose of the LTEMP is to manage potential adverse health and environmental impacts associated with soil contamination at the site. The LTEMP provides the passive management requirements to ensure the longevity of the installed capping system and to ensure any works that penetrate the capping system are appropriately controlled.

## **3.2 Planning Approval**

### **3.2.1 Conditions of Approval**

The M4-M8 Link Conditions of Approval that are relevant to Stage 4 of the Project, (as detailed in the Staging Report) including reference to required outcomes within this Plan is shown in Table 3.1 below.

Table 3-1 Relevant Conditions of Approval for Stage 4 works

| CoA No.        | Condition Requirements   | Document Reference / How Addressed |
|----------------|--|------------------------------------|
| <b>General</b> |  |                                    |
| A1             | <p>The CSSI must be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the <i>WestConnex M4-M5 Link Environmental Impact Statement – Volumes 1A-C and 2A-J</i> (dated August 2017) (the EIS) as amended by:</p> <ul style="list-style-type: none"> <li>a) the <i>WestConnex M4-M5 Link Submissions and Preferred Infrastructure Report</i> (dated January 2018) (the SPIR);</li> <li>b) the <i>WestConnex M4-M5 Link Mainline Tunnel Modification Report</i> (dated September 2018) (Modification 1 Report) as amended by the <i>WestConnex M4-M5 Link Mainline Tunnel Modification Response to Submissions</i> (dated November 2018) (Modification 1 RtS); and</li> <li>c) the <i>WestConnex M4-M5 Link Rozelle Interchange Iron Cove Ventilation Underground Modification Report</i> (dated November 2019) as amended by the <i>WestConnex M4-M5 Link Rozelle Interchange Iron Cove Ventilation Underground Modification Response to Submissions Report</i> (dated March 2020); and</li> <li>d) the <i>WestConnex M4-M5 Link Rozelle Interchange Glebe Island Construction Ancillary Facility Modification Report</i> (dated June 2020).</li> <li>e) the <i>WestConnex M4-M5 Link Rozelle Interchange The Crescent overpass and active transport links Modification report</i> (dated August 2019) (Modification 2 Report) as amended by the (i) <i>WestConnex M4-M5 Link Rozelle Interchange Modification The Crescent overpass and active transport links Design amendment report</i> (dated April 2020) (Modification 2 Amendment Report), (ii) <i>WestConnex M4-M5 Link Rozelle Interchange Modification The Crescent overpass and active transport links Response to Submissions Report</i> (dated April 2020) (Modification 2 RtS), and (iii) <i>WestConnex M4-M5 Link Rozelle Interchange Modification The Crescent overpass and active transport links</i></li> </ul> | Section 3.1                        |

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|         | <p><i>Response to Submissions on the Design amendment report (dated June 2020) (Modification 2 Amendment RtS);</i></p> <p>f) <i>the WestConnex M4-M5 Link Rozelle Interchange Modification Request Letter (dated October 2020); and</i></p> <p>The WestConnex M4-M5 Link Mainline Tunnels – Modification 7: Northcote Street Cul-de-sac Northcote Street Modification Report (dated April 2022) as amended by the WestConnex M4-M5 Link Mainline Tunnels Modification 7 – Northcote Street Cul-de-sac Response to Submissions Report (dated August 2022).</p>  |                                    |
| A2      | The CSSI must 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.   | Section 3.1                        |
| A3      | In the event of an inconsistency between the documents listed in Condition A1 or any other document required under this approval, and a term of this approval, the term of this approval prevails to the extent of the inconsistency. Note: For the purpose of this condition, there will be an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.  | Section 3.1                        |
| A4      | <p>The Proponent must comply with all requirements of the Secretary in relation to:</p> <p>a) the environmental performance of the CSSI;</p> <p>b) any document or correspondence under the terms of this approval in relation to the CSSI;</p> <p>c) any notification given to the Secretary under the terms of this approval;</p> <p>d) any audit of the construction or operation of the CSSI;</p> <p>e) compliance with the terms of this approval (including anything required to be done under this approval);</p> <p>f) the carrying out of any additional monitoring or mitigation measures; and</p> | Noted                              |

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|         | 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      | In the event that there are differing interpretations of the terms of this approval, including in relation to a condition of this approval, the Secretary's interpretation is final.   | Noted                              |
| A6      | <p>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:</p> <ul style="list-style-type: none"> <li>a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;</li> <li>b) a log of the dates of engagement or attempted engagement with the identified party;</li> <li>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;</li> <li>d) outline of the issues raised by the identified party and how they have been addressed; and</li> <li>e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.</li> </ul> | UDLP Section 2.8                   |
| A7      | <p>Where the terms of approval provide for Secretarial discretion (for example in relation to the timing of an action), the Proponent must provide supporting evidence so that the Secretary can consider the need, environmental impacts and consistency of any request.</p> <p><i>Note: Inaction and/or expedience will not be supported as justifications for need unless it can be demonstrated that there is beneficial environmental impacts associated with the request.</i></p>  | Noted                              |

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| A8             | Where a condition of this approval requires the Proponent to submit a document or notification to the Secretary or obtain an approval from the Secretary within a specified time period, the Proponent may make a written request to the Secretary seeking an alternative timeframe. Any request must be made at least one (1) month prior to the submission timeframe stipulated in the condition of approval relating to the variation request.  | Noted                              |
| A9             | Without limitation, all strategies, plans, programs, reviews, audits, report recommendations, protocols and the like required by the terms of this approval must be implemented by the Proponent in accordance with all requirements issued by the Secretary from time to time in respect of them.   | Noted                              |
| A10            | This approval lapses five (5) years after the date on which it is granted, unless works for the purpose of the CSSI are physically commenced on or before that date.   | Noted                              |
| A11            | The Proponent is responsible for any breaches of the conditions of this approval resulting from the actions of all persons that it invites onto any site, including contractors, sub-contractors and visitors.   | Noted, Section 8.1.6               |
| <b>Staging</b> |  |                                    |
| A12            | The CSSI may be constructed and operated in stages. Where staged construction or operation is proposed, a Staging Report (for either or both construction and operation as the case requires) must be prepared, then endorsed by the ER and then submitted to the Secretary for information. The Staging Report must be submitted to the Secretary no later than one (1) month prior to the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one (1) month prior to the commencement of operation of the first of the proposed stages of operation). | Section 1.3<br>Staging Report      |
| A13            | The Staging Report must:<br>a) if staged construction is proposed, set out how the construction of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each  | Staging Report                     |

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|                                     | <p>stage and the general timing of when construction of each stage will commence and finish;</p> <p>b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including general details of work and other activities to be carried out in each stage and the general timing of when operation of each stage will commence and finish (if relevant);</p> <p>c) specify the relevant conditions of approval that apply to each stage and how compliance with those conditions will be achieved across and between each of the stages of the CSSI; and</p> <p>d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.</p> |                                     |
| A14                                 | The CSSI must be staged in accordance with the Staging Report, as submitted to the Secretary.  | Staging Report                      |
| A15                                 | Where staging is proposed, the terms of this approval that apply or are relevant to the works or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.   | Staging Report, this table          |
| A16                                 | Where changes are proposed to the staging of construction or operation, a revised Staging Report must be prepared and submitted to the Secretary for information no later than one (1) month prior to the proposed change in the staging.  | Staging Report                      |
| <b>Environmental Representative</b> |  |                                     |
| A17                                 | Works must not commence until an Environmental Representative (ER) has been approved by the Secretary and engaged by the Proponent.  | An ER has been approved and engaged |



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| A18     | The Secretary's approval of an ER must be sought no later than one (1) month prior to the commencement of works.   | An ER has been approved and engaged |
| A19     | The proposed ER must be a suitably qualified and experienced person who was not involved in the preparation of the EIS or SPIR, and is independent from the design and construction personnel for the CSSI.  | An ER has been approved and engaged |
| A20     | 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 Secretary for the purposes of the CSSI.   | An ER has been approved and engaged |
| A21     | <p>For the duration of the works until the completion of construction, the approved ER must:</p> <ul style="list-style-type: none"> <li>a) receive and respond to communication from the Secretary in relation to the environmental performance of the CSSI;</li> <li>b) consider and inform the Secretary on matters specified in the terms of this approval;</li> <li>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;</li> <li>d) review documents identified in Conditions C1, C4 and C9 and any other documents that are identified by the Secretary, to ensure they are consistent with requirements in or under this approval and if so: <ul style="list-style-type: none"> <li>i) make a written statement to this effect before submission of such documents to the Secretary (if those documents are required to be approved by the Secretary), or</li> <li>ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Secretary / Department for information or are not required to be submitted to the Secretary / Department);</li> </ul> </li> </ul> | Noted                               |

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|         | <p>e) regularly monitor the implementation of the documents listed in Conditions C1, C4 and C9 to ensure implementation is being carried out in accordance with the document and the terms of this approval;</p> <p>f) as may be requested by the Secretary, help plan, attend or undertake audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A36 of this approval;</p> <p>g) as may be requested by the Secretary, assist the Department in the resolution of community complaints;</p> <p>h) assess the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities as required by Condition C24 of this approval;</p> <p>i) consider any minor amendments to be made to the CEMP, CEMP Sub-plans, Site Establishment Management Plan(s) and monitoring programs 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 Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; and</p> <p>j) prepare and submit to the Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing 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 (7) calendar days following the end of each month for the duration of the ER's engagement for the CSSI, or as otherwise agreed with the Secretary.</p> |   |
| A22     | <p>The Proponent must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition A21 (including preparation of the Environmental Representative Monthly Report), as well as:</p> <p>a) the complaints register (to be provided on a daily basis); and</p>  | Transport will comply with this requirement |

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|                          | 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).  |                                     |
| A23                      | <p>The Secretary may at any time commission an audit of an ER's exercise of its functions under Condition A21. The Proponent must:</p> <p>a) facilitate and assist the Secretary in any such audit; and</p> <p>b) make it a term of their engagement of an ER, that the ER facilitate and assist the Secretary in any such audit.</p>  | Noted                               |
| <b>Acoustics advisor</b> |  |                                     |
| A24                      | <p>A suitably qualified and experienced Acoustics Advisor (AA), who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of works and for no less than six (6) months following completion of construction of the CSSI.</p> <p>The details of the nominated AA must be submitted to the Secretary for approval no later than one (1) month before commencement of works.</p> <p>The Proponent must cooperate with the AA by:</p> <p>a) providing access to noise and vibration monitoring activities as they take place;</p> <p>b) providing for review of noise and vibration plans, assessments, monitoring reports, data and analyses undertaken; and</p> <p>c) considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted.</p> | An AA has been approved and engaged |
| A25                      | Any activities generating noise in excess of the 'Noise affected' Noise Management Levels derived from the Interim Construction Noise Guideline must not commence until an AA, nominated under Condition A24 of this approval, has been approved by the Secretary.   | An AA has been approved and engaged |

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| A26     | <p>The approved AA must:</p> <ul style="list-style-type: none"> <li>a) receive and respond to communication from the Secretary in relation to the performance of the CSSI in relation to noise and vibration;</li> <li>b) consider and inform the Secretary on matters specified in the terms of this approval relating to noise and vibration;</li> <li>c) consider and recommend, to the Proponent, improvements that may be made to avoid or minimise adverse noise and vibration impacts;</li> <li>d) review all noise and vibration documents required to be prepared under the terms of this approval and, should they be consistent with the terms of this approval, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary);</li> <li>e) regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of this approval to ensure implementation is in accordance with what is stated in the document and the terms of this approval;</li> <li>f) notify the Secretary of noise and vibration incidents in accordance with Condition A40 of this approval;</li> <li>g) in conjunction with the ER, the AA must: <ul style="list-style-type: none"> <li>i) as may be requested by the Secretary or Community Complaints Mediator (required by Condition B13), help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits,</li> <li>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 Communication Strategy approved under Condition B2 to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary,</li> <li>iii) consider relevant minor amendments made to the 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 Secretary and, if satisfied such amendment is</li> </ul> </li> </ul> | Noted as AA role and responsibilities |

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|         | <p>necessary, endorse the amendment. This does not include any modifications to the terms of this approval,</p> <p>iv) review the noise impacts of minor construction ancillary facilities, and</p> <p>v) prepare and submit to the Secretary and other relevant regulatory agencies, for information, a Monthly Noise and Vibration Report detailing the AAs actions and decisions on matters for which the AA was responsible in the preceding month. The Monthly Noise and Vibration Report must be submitted within seven (7) days following the end of each month for the duration of the AA's engagement for the CSSI, or as otherwise agreed by the Secretary.</p>   |                                    |
| A33     | <p>Construction Compliance Reports must be prepared and submitted to the Secretary for information every six (6) months from the date of the commencement of construction for the duration of construction. The Construction Compliance Reports must include:</p> <ul style="list-style-type: none"> <li>(a) a results summary and analysis of environmental monitoring;</li> <li>(b) the number of any complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints;</li> <li>(c) details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;</li> <li>(d) a register of any consistency assessments undertaken and their status;</li> <li>(e) results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit;</li> <li>(f) a summary of all incidents notified in accordance with Conditions A40 and A42 of this approval; and</li> <li>(g) any other matter relating to compliance with the terms of this approval or as requested by the Secretary.</li> </ul> | Table 8-2                          |

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| A34  | A Pre-Operation Compliance Report must be prepared and submitted to the Secretary for information no later than one (1) month prior to the commencement of operation. The Pre-Operation Compliance Report must include:<br><br>(a) details of how the terms of this approval that must be addressed before the commencement of operation have been complied with; and<br><br>(b) the commencement date for operation. | Section 8.9 - Reporting                        |
| A35  | Operation must not commence until the Pre-Operation Compliance Report has been submitted for information to the Secretary   | Section 8.9 – Reporting                        |
| <b>Incident notification and reporting</b> |   |  |
| A40  | The Secretary must be notified as soon as possible and in any event within 24 hours of any incident.  | Section 8.4 – Emergency and Incident Reporting |
| A41  | Notification of an incident under Condition A40 of this approval must include the time and date of the incident, details of the incident and must identify any consequent non-compliance with this approval.  | Section 8.4 – Emergency and Incident Reporting |
| A42  | All written requirements of the Secretary or relevant public authority, which may be given at any point in time, to address the cause or impact of an incident must be complied with, within any timeframe specified by the Secretary or relevant public authority.   | Section 8.4 – Emergency and Incident Reporting |
| A43  | If statutory notification is given to the EPA as required under the POEO Act in relation to the CSSI, such notification must also be provided to the Secretary within 24 hours after the notification was given to the EPA.   | Section 8.4 – Emergency and Incident Reporting |
| A45  | Signage on hoardings surrounding construction ancillary facilities must include the CSSI name and application number.   | Table 7-2: Environmental safeguards            |
| <b>Communications strategy</b>             |   |  |

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| B1 | A Communication Strategy must be prepared to facilitate communication between the Proponent, and the community (including relevant councils, government authorities, adjoining affected landowners and businesses, and others directly impacted by the CSSI).   | Rozelle Interchange<br>Community Communication<br>Strategy |
| B2 | <p>The Communication Strategy must:</p> <ul style="list-style-type: none"> <li>a) identify people and organisations to be consulted during the design and work phases;</li> <li>b) set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the CSSI;</li> <li>c) identify opportunities to provide accessible information regarding regularly updated site construction activities, schedules and milestones at each construction site including use of construction hoardings to provide information regarding construction specific to the location;</li> <li>d) identify opportunities for the community to visit construction sites (taking into consideration on-site activities and workplace, health and safety requirements);</li> <li>e) detail the measures for advising the community in advance of upcoming utility works;</li> <li>f) provide for the formation of issue or location-based community forums that focus on key environmental management issues of concern to the relevant community(s) for the CSSI;</li> <li>g) set out procedures and mechanisms for consulting with relevant council(s) and government authorities/agencies, as required under the terms of this approval, including procedures for repeated requests and nil responses;</li> <li>h) detail the roles and responsibilities of the Public Liaison Officer(s) engaged under Condition B6;</li> <li>i) set out procedures and mechanisms: <ul style="list-style-type: none"> <li>i) through which the community can discuss or provide feedback to the Proponent</li> <li>ii) through which the Proponent will respond to enquiries or feedback from the community, and</li> <li>iii) to resolve any issues and mediate any disputes that may arise in relation to environmental management and delivery of the CSSI</li> </ul> </li> </ul> | Rozelle Interchange<br>Community Communication<br>Strategy |

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| B3                                  | The Communication Strategy must be submitted to the Secretary for approval no later than one (1) month prior to the commencement of any work.   | Rozelle Interchange Community Communication Strategy was approved prior to the commencement of any work relating to the Project |
| B4                                  | Work for the purposes of the CSSI must not commence until the Communication Strategy has been approved by the Secretary.  | Rozelle Interchange Community Communication Strategy was approved prior to the commencement of any work relating to the Project |
| B5                                  | The Communication Strategy, as approved by the Secretary, must be implemented for the duration of the works and for 12 months following the completion of construction.   | Noted   |
| <b>Public Liaison Officer</b>       |   |   |
| B6                                  | A Public Liaison Officer(s) must be appointed for construction ancillary facility(s) and for utility works to assist the public with questions and complaints they may have at any time during construction. The Public Liaison Officer(s) must be available at all times that works are occurring.   | Communication Strategy  |
| <b>Complaints Management System</b> |   |   |
| B8                                  | A Complaints Management System must be prepared prior to the commencement of any works in respect of the CSSI and be implemented and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the CSSI.  | Section 8.3.3   |
| B9                                  | The Complaints Management System must include a Complaints Register to be maintained recording information on all complaints received about the CSSI during the carrying out of any works associated with the CSSI and for a minimum of 12 months following the completion of construction of the CSSI. The Complaints Register must record the:<br>a) number of complaints received;<br>b) number of people affected in relation to a complaint; and<br>c) nature of the complaint and means by which the complaint was addressed and whether resolution was reached, with or without mediation. | Section 8.3.3   |



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| B10 | The Complaints Register must be provided to the Secretary upon request, within the timeframe stated in the request.   | Section 8.3                                       |
| B11 | The following must be available within one (1) month prior to the commencement of works and for 12 months following the completion of construction of the CSSI and appropriately broadcast to manage community enquiries and complaints:<br>a) a 24 hour toll-free telephone number for the registration of complaints and enquiries about the CSSI;<br>b) a postal address to which written complaints and enquires may be sent;<br>c) an email address to which electronic complaints and enquiries may be transmitted;<br>d) a mediation system for complaints unable to be resolved; and<br>e) a mechanism for community members to make enquiries in common community languages of the area. | Section 8.3                                       |
| B12 | The telephone number, postal address and email address required under Condition B11 of this approval must be published in a newspaper circulating in the local area and on-site hoarding at each construction site before commencement of works and published in the same way again prior to the commencement of operation. This information must also be provided on the website required under Condition B17 of this approval.  | Section 8.3                                       |
| B13 | A Community Complaints Mediator that is independent of the design and construction personnel must be nominated by the Proponent, approved by the Secretary and engaged during all works associated with the CSSI. The request nominating the Community Complaints Mediator must be submitted to the Secretary for approval within one (1) month of the date of this approval.   | A Community Complaints Mediator has been engaged. |
| B14 | The role of the Community Complaints Mediator is to address any complaint where a member of the public is not satisfied by the Proponent's response. Any member of the public that has lodged a complaint which is registered in the Complaints Management System identified in Condition B8 may ask the Community Complaints Mediator to review the Proponent's response. The application must be submitted in writing and the Community Complaints Mediator must respond within 28 days of the request being made or other specified timeframe agreed between the Community Complaints Mediator and the member of the public.   | Noted   |

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| B15 | <p>The Community Complaints Mediator will:</p> <p>a) review the Proponent's unresolved disputes between the project and members of the public if the procedures and mechanisms under Condition B2(i)(iii) do not satisfactorily address complaints; and</p> <p>b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes.</p>   | Noted   |
| B16 | <p>The Community Complaints Mediator will not act before the Proponent has provided an initial response to a complaint and will not consider issues such as property acquisition where other dispute processes are provided for in this approval, or clear government policy and resolution processes are available, or matters which are not within the scope of the CSSI.</p>   | Noted   |
| B17 | <p>A website providing information in relation to the CSSI must be established before commencement of works and maintained for the duration of works, and for a minimum of 24 months following the completion of construction of the CSSI. The following up-to-date information (excluding confidential, private and commercial information) must be published prior to works commencing and maintained on the website or dedicated pages:</p> <p>a) information on the current implementation status of the CSSI;</p> <p>b) a copy of the documents listed in Condition A1 of this approval, and any documentation relating to any modifications made to the CSSI or the terms of this approval;</p> <p>c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval; and</p> <p>d) a copy of each licence or permit required and obtained in relation to the CSSI.</p> <p>Where a condition(s) of this approval requires a document(s) be prepared prior to a work or construction or operational activity being undertaken, a current copy of the relevant document(s) must also be published on the website before the work / activity is undertaken.</p> | A website has been established for the M4-M5 Link and will be maintained throughout the Stage 4 works |

**Construction Environmental Plan**

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| C1 | A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Department's Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004) to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during all stages of construction.   | This document |
| C2 | <p>The CEMP must provide:</p> <ul style="list-style-type: none"> <li>a) a description of activities to be undertaken during construction (including the scheduling of construction and figures depicting the site layouts of the construction ancillary facilities);</li> <li>b) details of environmental policies, guidelines and principles to be followed in the construction of the CSSI;</li> <li>c) a schedule for compliance auditing;</li> <li>d) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the CSSI;</li> <li>e) details of how the activities described in subsection (a) of this condition will be carried out to: <ul style="list-style-type: none"> <li>i) meet the performance outcomes stated in the documents listed in Condition A1, and</li> <li>ii) manage the risks identified in the risk analysis undertaken in subsection (d) of this condition;</li> </ul> </li> <li>f) an inspection program detailing the activities to be inspected and frequency of inspections;</li> <li>g) a protocol for managing and reporting any: <ul style="list-style-type: none"> <li>i) incidents, and</li> <li>ii) non-compliances with this approval and with statutory requirements;</li> </ul> </li> <li>h) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;</li> <li>i) 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;</li> </ul> | This document |

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|  | <p>j) a description of the roles and environmental responsibilities for relevant employees and their relationship with the ER;</p> <p>k) an outline of the training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval; and</p> <p>l) the process for periodic review and update of the CEMP and all associated plans and programs</p> |  |
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| C3                                      | The CEMP must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month prior to the commencement of construction, or where construction is staged no later than one (1) month prior to the commencement of that stage.   | Noted  |
| C8                                      | Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Secretary. The CEMP and CEMP Sub-plans, as approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where the CSSI is being staged, construction of that stage is not to commence until the relevant CEMP and CEMP sub-plans have been endorsed by the ER and approved by the Secretary.   | Noted.<br><br>No sub-plans are required for this CEMP  |
| <b>Construction Monitoring Programs</b> |  |  |
| C11                                     | <p>The Noise and Vibration Monitoring Program must include:</p> <p>a) noise monitoring at agreed representative sensitive receiver locations adjacent to the Parramatta Road East and West construction ancillary facilities in Bland and Alt Streets to confirm that construction noise levels do not exceed the 'Noise affected' Noise Management Levels as identified in the ICNG;</p> <p>b) noise monitoring associated with Condition E88 and Appendix E at agreed representative sensitive residential receiver locations alongside those properties bordering the Northcote Street construction ancillary facility that have been identified as eligible for construction noise treatment in Appendix E and in Paige Avenue and/or Earle Avenue located immediately outside, and to the east and west of the nominated boundary in Appendix E;</p> <p>c) for the purposes of (a) and (b), noise monitoring during the day, evening and night-time periods must be undertaken within the first month of operation of the construction ancillary facilities and must cover the range of activities (excluding activities associated with site establishment) being undertaken at the sites; and</p> | <p>The flowchart provided in Appendix A1 prescribes the triggers for the implementation of the Noise and Vibration Monitoring Program</p> <p>CNVIS</p> |

| CoA No.                                  | Condition Requirements  | Document Reference / How Addressed   |
|--|---|--|
|  | d) provision of real time noise and vibration monitoring data. The data must be readily available to the construction team, Proponent, ER and AA. The Department and EPA must be provided with access to the real-time monitoring data, on request.   |  |
| <b>Construction Ancillary Facilities</b> |   |  |
| C21A                                     | <p>Ancillary facilities that are not identified by description and location in Condition A1 can only be established and used in each case if:</p> <p>a) they are located within or immediately adjacent to the construction boundary; and</p> <p>b) they are not located next to sensitive receiver(s) (including where an access road is between the facility and the receiver), unless the sensitive receiver(s) (both the landowner(s) and occupier(s)) have given written acceptance to the carrying out of the relevant facility in the proposed location; and</p> <p>c) they have no impacts on heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and</p> <p>d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts</p> | The ancillary facility for Stage 4 works is located within the Project construction boundary and is described in section 5.3 |
| C23                                      | The operation of a construction ancillary facility 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 C9 have been approved by the Secretary.  | Noted.<br>No sub-plans or monitoring programs are required for this CEMP.  |
| C24                                      | Lunch sheds, office sheds, and portable toilet facilities, that are not identified as a construction ancillary facility in the documents listed in Condition A1 can be established, where they satisfy the following criteria:  | The ancillary facility for Stage 4 works is located within the Project construction boundary and is described in section 5.3 |

| CoA No.                              | Condition Requirements  | Document Reference / How Addressed  |
|--------------------------------------|---|---|
|                                      | <p>a) have no greater environmental and amenity impacts than those that can be managed through the implementation of environmental measures detailed in the Site Establishment Management Plan required under Condition C22 of this approval; and</p> <p>b) are located within the project boundary; and</p> <p>c) have been assessed by the ER to have -</p> <p>i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts,</p> <p>ii) minimal environmental impact with respect to waste management and flooding, and</p> <p>iii) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.</p> |   |
| C25                                  | Boundary fencing that incorporates screening must be erected around all construction ancillary facilities that are adjacent to sensitive receivers for the duration of site establishment and construction unless otherwise agreed with relevant council(s), and affected residents, business operators or landowner.   | Section 5.3<br><br>Table 7-2 : Environmental safeguards   |
| C26                                  | Boundary fencing required under Condition C25 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.   | Table 7-2 : Environmental safeguards  |
| <b>Air Quality</b>                   |   |   |
| E1                                   | In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the construction and operation of the CSSI.  | Section 7.1<br><br>Note: no odorous materials or substances are to be used for the work activities. |
| <b>Traffic, Transport and Access</b> |   |   |

| CoA No. | Condition Requirements  | Document Reference / How Addressed |
|---------|---|------------------------------------|
| E46     | Access to all utilities and properties must be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier  | Section 7.2                        |
| E47     | 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.  | Section 7.2                        |
| E52     | <p>Construction vehicles (including staff vehicles) associated with the CSSI must be managed to:</p> <ul style="list-style-type: none"> <li>a) minimise parking on public roads;</li> <li>b) minimise idling and queuing on public roads; and</li> <li>c) ensure spoil haulage vehicles must adhere to the nominated haulage routes identified in the Traffic and Transport CEMP.</li> </ul>  | <p>Section 7.2</p> <p>CPAS</p>     |
| E54     | <p>A Construction Parking and Access Strategy must be prepared and implemented 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:</p> <ul style="list-style-type: none"> <li>a) confirmation and timing of the removal of on- and off-street parking associated with construction of the CSSI;</li> <li>b) parking surveys of all parking spaces to be removed to determine current demand during peak, off-peak, school drop off and pickup, and weekend periods;</li> <li>c) consultation with affected stakeholders utilising existing on- and off-street parking stock which will be impacted as a result of construction;</li> <li>d) assessment of the impacts of changes to on- and off-street parking stock taking into consideration outcomes of consultation with affected stakeholders;</li> <li>e) 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,</li> </ul> | <p>CPAS</p> <p>Section 7.2</p>     |



| CoA No.                    | Condition Requirements  | Document Reference / How Addressed     |
|----------------------------|---|--|
|                            | <p>managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds;</p> <p>f) provision of a shuttle bus service(s) to transport workers to site(s) and details of the shuttle bus service(s), including service timing and frequency;</p> <p>g) mechanisms for monitoring, over appropriate intervals, to determine the effectiveness of implemented mitigation measures;</p> <p>h) provision of contingency measures should the results of mitigation monitoring indicate implemented measures are ineffective; and</p> <p>i) provision of reporting of monitoring results to the Secretary and relevant council(s) at three (3) monthly intervals.</p> <p>The Construction Parking and Access Strategy must be submitted to the Secretary for approval at least one (1) month prior to the commencement of any works that impact parking.</p> |  |
| E57                        | <p>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, an alternate route which complies with the relevant standards must be provided and signposted prior to the restriction or removal of the relevant pedestrian and cyclist access.</p>  | Section 7.2                            |
| E62                        | <p>If damage to roads occurs as a result of the construction of CSSI, the Proponent must either:</p> <p>a) compensate the relevant road authority for the damage so caused. The amount of compensation may be agreed with the relevant road authority, but compensation must be paid even if no agreement is reached; or</p> <p>b) rectify the damage so as to restore the road to at least the condition it was in pre-construction</p>  | Road Dilapidation Reports<br>Table 7-2 |
| <b>Noise and Vibration</b> |   |  |

| CoA No. | Condition Requirements  | Document Reference / How Addressed                            |
|---------|---|---|
| E67     | All noise and vibration assessment, management and mitigation required by this approval must consider the cumulative noise impacts of approved CSSI and SSI projects. This includes using ambient and background levels which do not include other WestConnex M4 East and New M5 (SSI 6307 and SSI 6788) projects. This condition applies to all works and operation.   | Table 7-2   |
| E68     | Works must be undertaken during the following hours:<br>a) 7:00 am to 6:00 pm Mondays to Fridays, inclusive;<br>b) 8:00 am to 1:00 pm Saturdays; and<br>c) at no time on Sundays or public holidays.  | Table 7-2   |
| E69     | Notwithstanding Condition E68, works may be undertaken between 1:00 pm to 6:00 pm on Saturday.  | Table 7-2   |
| E72     | 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:<br>a) between the hours of 8:00 am to 6:00 pm Monday to Friday;<br>b) between the hours of 8:00 am to 1:00 pm Saturday; and<br>c) in continuous blocks not exceeding three (3) hours each with a minimum respite from those activities and works of not less than one (1) hour between each block.<br><br>For the purposes of this condition, 'continuous' includes any period during which there is less than a one (1) hour respite between ceasing and recommencing any of the work that are the subject of this condition. | Table 7-2   |
| E73     | Notwithstanding Conditions E68 to E72 works may be undertaken outside the hours specified under those conditions in the following circumstances:<br>a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or   | Parts (a) and (b) are applicable to Stage 4.<br><br>Table 7-2 |

| CoA No. | Condition Requirements  | Document Reference / How Addressed |
|---------|---|------------------------------------|
|         | <p>b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or</p> <p>c) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or</p> <p>d) works approved under an Out-of-Hours Work Protocol for works not subject to an EPL as required by Condition E77; or</p> <p>e) construction, excluding spoil haulage from the Iron Cove civil site (C8) at which haulage is limited to the work hours specified in Conditions E68 and E69, that causes LAeq (15 minute) noise levels:</p> <p>i) no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and</p> <p>ii) no more than the 'Noise affected' noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and</p> <p>iii) continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), and</p> <p>iv) intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006).</p> <p><i>Note: Section 5.24(1)(e) of the EP&amp;A Act requires that an EPL be substantially consistent with this approval. Out of Hours Works considered under Conditions E73(c) and (d) must be justified and include an assessment of mitigation measures.</i></p> |                                    |
| E74     | <p>On becoming aware of the need for emergency works in accordance with Condition E73(b), the Proponent must notify the AA, the ER and the EPA of the need for that work. The Proponent must use best endeavours to notify all noise and/or vibration affected sensitive receivers of the likely impact and duration of those works.</p>  | Section 7.3.1                      |

| CoA No. | Condition Requirements   | Document Reference / How Addressed                           |
|---------|--|--|
| E75     | <p>Out-of-hours works that are regulated by an EPL as per Condition E73(c) or through the Out- of-Hours Work Protocol as per Condition E77 include:</p> <p>a) works which could result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 “Risk Management – Principles and Guidelines”; or</p> <p>b) where the relevant road network operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to road network operational performance; or</p> <p>c) where the relevant utility service operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to the operation and integrity of the utility network; or</p> <p>d) where the TfNSW Transport Management Centre (or other road authority) has advised the Proponent in writing that a road occupancy licence is required and will not be issued for the works or activities during the hours specified in Condition E68 and Condition E69; or</p> <p>e) where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required.</p> <p><i>Note: Other out-of-hours works can be undertaken with the approval of an EPL, or through the project’s Out-of-Hours Work Protocol for works not subject to an EPL.</i></p> | <p>Appendix A3 - OOHW Protocol</p> <p>Section 3.1</p>        |
| E76     | <p>In order to undertake out-of-hours work described in Condition E75, the Proponent must identify appropriate respite periods for the out-of-hours works in consultation with the community at each affected location. This consultation must include (but not be limited to) providing the community with:</p> <p>a) a schedule of likely out-of-hours work for a period no less than three (3) months;</p> <p>b) the potential works, location and duration;</p> <p>c) the noise characteristics and likely noise levels of the works; and</p> <p>d) likely mitigation and management measures.</p>   | <p>Appendix A3 – OOHW Protocol Section 4.4 and Section 7</p> |

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|     | The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour works must be provided to the AA, EPA and the Secretary  |                    |
| E77 | <p>An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of works which are outside the hours defined in Conditions E68 and E69, and that are not subject to an EPL. The Protocol must be approved by the Secretary prior to commencement of the works. The Protocol must be prepared in consultation with the EPA and AA. The Protocol must:</p> <ul style="list-style-type: none"> <li>a) provide a process for the consideration of out-of-hours works against the relevant noise and vibration criteria, including the determination of low and high-risk activities;</li> <li>b) provide a process for the identification of mitigation measures for residual impacts, including respite periods in consultation with the community at each affected location, consistent with the requirements of Condition E76;</li> <li>c) identify procedures to facilitate the coordination of out-of-hours works approved by an EPL to ensure appropriate respite is provided;</li> <li>d) identify an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: <ul style="list-style-type: none"> <li>i) low risk activities can be approved by the ER in consultation with the AA, and</li> <li>ii) high risk activities that are approved by the Secretary; and</li> </ul> </li> <li>e) identify Department, EPA and community notification arrangements for approved out of hours works, which may be detailed in the Communication Strategy.</li> </ul> | Appendix A3        |
| E78 | <p>All works undertaken for the delivery of the CSSI, including those undertaken by third parties, must be coordinated to ensure respite periods are provided. The Proponent must:</p> <ul style="list-style-type: none"> <li>a) reschedule any works to provide respite to impacted noise sensitive receivers so that the respite is achieved in accordance with Condition E76; or</li> <li>b) consider the provision of alternative respite or mitigation to impacted noise sensitive receivers; and</li> <li>c) provide documentary evidence to the AA in support of any decision made by the Proponent in relation to respite or mitigation.</li> </ul>  | Table 7-2<br>CNVIS |

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| E80 | <p>Noise generating works in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.</p>   | <p>Table 7-2<br/>CNVIS</p> |
| E81 | <p>Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria:</p> <ul style="list-style-type: none"> <li>a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009);</li> <li>b) vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure);</li> <li>c) Australian Standard AS 2187.2 – 2006 “Explosives – Storage and Use – Use of Explosives”;</li> <li>d) BS 7385 Part 2-1993 “Evaluation and measurement for vibration in buildings Part 2” as they are “applicable to Australian conditions”; and</li> <li>e) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration-effects of vibration on structures (for structural damage).</li> </ul> <p>Comparison against the criteria must take into account the cumulative noise and vibration levels from concurrent activities associated with the CSSI.</p> <p>Any works identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the Construction Noise and Vibration Management Sub-plan. Predicted vibration levels must be used to select the specific management measures to be applied to individual properties during construction.</p> <p>Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level</p> | <p>Table 7-2<br/>CNVIS</p> |

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| E82 | <p>Mitigation measures must be applied when the following residential ground-borne noise levels, including cumulative levels from concurrent activities associated with the CSSI, are exceeded:</p> <p>a) evening (6:00 pm to 10:00 pm) — internal LAeq(15 minute): 40 dB(A); and</p> <p>b) night (10:00 pm to 7:00 am) — internal LAeq(15 minute): 35 dB(A).</p> <p>The mitigation measures must be outlined in the Construction Noise and Vibration Management Sub-plan, including in any Out-of-Hours Work Protocol, required by Condition E77. Predicted ground-borne noise levels must be used to select the specific management measures to be applied to individual properties during construction.</p> | <p>Table 7-2</p> <p>CNVIS</p>   |
| E83 | <p>Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owner 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 Construction Noise and Vibration Management Sub-plan.</p>   | <p>Table 7-2</p> <p>CNVIS</p>   |
| E84 | <p>The Proponent must conduct vibration testing before and during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures.</p>  | <p>Stage 4 works do not involve construction methodologies nor equipment that would trigger significant vibration.</p> <p>Table 7-2</p> |
| E91 | <p>At no time can noise generated by construction exceed the National Standard for exposure to noise in the occupational environment of an eight-hour (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</p>   | <p>Table 7-2</p> <p>CNVIS</p>   |

**Building Condition Survey**

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| E108                                     | 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 three (3) months of completion of the post-dilapidation surveys unless another timeframe is agreed with the owner of the affected surface or sub-surface structure.   | Construction Noise and Vibration Impact Statement (CNVIS)<br>Condition Survey Reports<br>Table 7-2                           |
| <b>Construction Ancillary Facilities</b> |   |  |
| E116                                     | 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.   | The ancillary facility for Stage 4 works is located within the Project construction boundary and is described in section 5.3 |
| <b>Lighting and Security</b>             |   |  |
| E122                                     | The Proponent must construct and operate the CSSI with the objective of minimising light spillage to residential properties. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces. Notwithstanding, 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. | Note that no night works requiring lighting are proposed as part of the Works<br>Section 7.9.1                               |
| <b>Urban design</b>                      |   |  |
| E133                                     | An Urban Design and Landscape Plan(s) (UDLP) must be prepared based on the detailed design, and in accordance with the project objectives, and the commitments made in Chapters 13 and 29 of the EIS and updated in Part E of the SPIR.   | Urban Design and Landscape Plan will be updated to reflect Stage 4 design enhancements                                       |
| E134                                     | The Urban Design and Landscape Plan(s) must be prepared by a suitably qualified and experienced person(s) in consultation with the relevant council(s), Infrastructure NSW, the community and affected landowners and businesses.   | Urban Design and Landscape Plan will be updated to reflect Stage 4 design enhancements                                       |



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| E135                           | The Urban Design and Landscape Plan(s), and its sub-plans, must be reviewed by the Design Review Panel. The Proponent must respond to the outcomes of the Design Review Panel's review and submit the UDLP to the Secretary for approval no later than one (1) month prior to the construction of permanent built surface works that are the subject of the Urban Design and Landscape Plan(s) (in the area to which the UDLP applies) or earth works for the final surface contouring of the Rozelle Rail Yards open space, whichever is the sooner. | DRP Chair endorsement  |
| E136                           | Construction of permanent built works or landscaping that are the subject of the Urban Design and Landscape Plan must not be commenced (in the area to which the UDLP applies) until the Urban Design and Landscape Plan(s) has been approved by the Secretary, after taking into consideration advice received from the Design Review Panel.   | Urban Design and Landscape Plan will be updated to reflect Stage 4 design enhancements |
| E137                           | The Urban Design and Landscape Plan(s), as approved by the Secretary, must be implemented during construction, as required, and operation.  | Urban Design and Landscape Plan will be updated to reflect Stage 4 design enhancements |
| <b>Operational Maintenance</b> |   |  |
| E139                           | The ongoing maintenance and operation costs of urban design, open space, landscaping and recreational items and works implemented as part of this approval will remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Prior to the transfer of assets, the Proponent will maintain items and works to at least the design standards established in the Urban Design and Landscape Plan, and its sub-plans, required by Condition E133.                | Section 8.5  |
| <b>Heritage</b>                |   |  |
| E154                           | The Proponent must not destroy, modify or otherwise physically affect any heritage items, including human remains, outside of the CSSI boundary, or undertake works in or on Alexandra Canal.   | Section 7.4  |
| E155                           | The Proponent must not to harm, modify, or otherwise impact human remains uncovered during the construction of the CSSI.  | Section 7.4<br>Appendix A4   |

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| E156   | Identified impacts to heritage items and heritage conservation areas must be minimised through both detailed design and construction. The measures for ensuring this are to be detailed in the Construction Non-Aboriginal Heritage Management Sub-Plan and Aboriginal Cultural Heritage Management Sub-Plan required by Conditions C4(g) and (h), respectively.   | Section 7.4                                 |
| E157   | An Unexpected Heritage Finds Procedure must be prepared:<br>a) to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or OEH; and<br>b) by a suitably qualified and experienced heritage specialist.<br><br>The Procedure must be included in the Construction Non-Aboriginal Heritage Management Sub-plan and Aboriginal Cultural Heritage Management Sub-Plan required by Conditions C4(g) and (h).<br><br>Note: Human remains that are found unexpectedly during works are under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately. | Section 7.4<br>Appendix A4                  |
| <b>Non-Aboriginal Historical Archaeology</b> |  |   |
| E168   | Prior to works that have a direct material impact on a Historical Archaeological Management Unit (HAMU), the Proponent must engage a suitably qualified archaeologist whose experience complies with the Heritage Council of NSW's Criteria for Assessment of Excavation Directors (July, 2011) (referred to as the Excavation Director) to oversee and advise on matters associated with historic archaeology and to prepare a Historical Archaeological Research Design and Excavation Methodology   | Not applicable to Stage 4 unless triggered. |
| E171   | Works within the vicinity of the find must not recommence until the relevant requirements of the Historical Archaeological Research Design and Excavation Methodology or advice on unexpected finds from the Excavation Director have been met.  | Appendix A4                                 |
| E173   | The Proponent must take all reasonable steps so as not to harm, modify or otherwise impact any Aboriginal object associated with the CSSI except as authorised by this approval.   | Section 7.5<br>Appendix A4                  |
| <b>Soils</b>                                 |  |   |

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|---------------------------|---|--------------------------|
| E180                      | All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise any water pollution. When implementing such controls, any relevant guidance in the Managing Urban Stormwater series must be considered. | Section 7.7<br>Table 7-2 |
| <b>Contaminated sites</b> |   |                          |
| E184                      | An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared and must be followed should unexpected contaminated land or asbestos be excavated or otherwise discovered during construction.  | Section 7.9              |
| E185                      | The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.  | Appendix A5              |
| <b>Drainage</b>           |   |                          |
| E188                      | Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be undertaken in accordance with relevant guidelines and designed by a suitably qualified and experienced person. | Section 7.7              |
| <b>Sustainability</b>     |   |                          |
| E201                      | Opportunities to reduce operational greenhouse gas emissions must be investigated during detailed design. The sustainability initiatives identified must be implemented, reviewed, updated regularly throughout the design development and construction.    | Section 7.11             |

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| E202         | <p>Waste generated during delivery of the CSSI is to be dealt with in accordance with the following priorities:</p> <p>a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced;</p> <p>b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered; and</p> <p>c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of at a waste management facility or premise lawfully permitted to accept the materials 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.</p> | Section 7.10 |
| <b>Waste</b> |  |              |
| E203         | <p>Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the Protection of the Environment Operations Act 1997, if such a licence is required in relation to that waste.</p>  | Section 7.10 |
| E204         | <p>All waste generated during construction and operation must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.</p>   | Section 7.10 |

### 3.2.2 Revised Environmental Management Measures

Revised Environmental Management Measures (REMMs), as identified in Part E of the Response to Submissions (RtS) report, a document listed in Condition A1 of the Project's CoA, relevant to Stage 4 works are listed in Table 3-2 below (as per those identified in the Staging Report) . This includes reference to required outcomes, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

Table 3-2 Applicable REMMs for Stage 4 works

| Ref No.                      | Commitment  | Document Reference          |
|------------------------------|---|-----------------------------|
| <b>Traffic and Transport</b> |   |                             |
| TT01                         | <p>A Construction Traffic and Access Management Plan (CTAMP) will be prepared as part of the CEMP. The CTAMP will include the guidelines, general requirements and principles of traffic management to be implemented during construction. It will be prepared in accordance with Austroads Guide to Road Design (with appropriate Roads and Maritime supplements), the RTA Traffic Control at Work Sites Manual and AS1742.3: Manual of uniform traffic control devices – Part 3: Traffic control for works on roads, and any other relevant standard, guide or manual. The CTAMP will be prepared in consultation with relevant transport stakeholders and local councils.</p> <p>The overarching strategy of the CTAMP will be to:</p> <ul style="list-style-type: none"> <li>• Ensure all relevant stakeholders are considered during all stages of the project</li> <li>• Provide safe routes for pedestrians and cyclists during construction</li> <li>• Design the permanent works and Develop construction methodologies so that interaction with existing road users is minimised thereby creating a safer work and road user environment Plan and stage works to minimise the need for road occupancy, where possible</li> <li>• Develop project staging plans in consultation with relevant traffic and transport stakeholders</li> <li>• Minimise the number of changes to the road users' travel paths and, where changes are required, develop and implement an effective community communication strategy, coupled with temporary wayfinding signage to warn, inform and guide. This will aim to minimise confusion by providing clear and concise traffic management schemes</li> <li>• Comprehensively communicate changes in traffic conditions to roads or paths to emergency services, public transport operators, other road user groups and any other affected stakeholders</li> <li>• Identify measures to manage the movements of construction-related traffic to minimise traffic and access disruptions in the public road network</li> <li>• Minimise the use of local roads for heavy vehicles</li> </ul> | <p>Section 7.2<br/>CPAS</p> |

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|      | <ul style="list-style-type: none"> <li>Minimise the loss of on-road parking for local residents</li> </ul> <p>Describe a car parking strategy for construction staff at the various worksites and ancillary facilities</p> |             |
| TT02 | Identify potential road user delays during the planning and consultation phases and include strategies within the CTAMP to reduce identified delays.   | Section 7.2 |
| TT03 | Develop construction staging and temporary works that minimise conflicts with the existing road network and maximises spatial separation between work areas and travel lanes.  | Section 7.2 |
| TT05 | Isolate work areas from general traffic through the implementation of appropriate traffic and access controls.   | Section 7.2 |
| TT06 | Develop and implement work methods to minimise delays and road user impacts, for example utilising more efficient plant and equipment, and applying different design solutions.  | Section 7.2 |

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| TT09               | Provide a mechanism for the community to report incidents and delays, for example a project phone number. Advertise details along the construction site's interface with the road network.  | Section 8.3.3            |
| TT10               | Schedule construction-related transport movements to avoid peak traffic periods and minimise project-related congestion, where possible.  | Section 7.2              |
| TT11               | Develop and adopt robust community and stakeholder communication protocols regarding altered traffic conditions.  | Section 7.2              |
| TT12               | Minimise impacts on the pedestrian paths and cycle lanes, and provide timely alternatives during construction where practical and safe to do so.  | Section 7.2              |
| TT14               | Manage local road closures and maintain adequate property access. This will be undertaken in consultation with Roads and Maritime, local councils and property owners likely to be impacted.  | Section 7.2              |
| TT18               | Prepare a road dilapidation report, 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.   | Road Dilapidation Report |
| <b>Air Quality</b> |   |                          |
| AQ1                | A Construction Air Quality Management Plan will be developed and implemented to monitor and manage potential air quality impacts associated with the construction for the project. The management plan will include controls required to reduce the emission of dust out of the door openings of acoustic sheds. The Plan will be implemented for the duration of construction. | Section 7.1              |
| AQ3                | Regular site inspections will be conducted to monitor for potential dust issues. The site inspections, required actions and ongoing issues, will be recorded and actioned appropriately within agreed timeframes by relevant project personnel.   | Section 7.1              |
| AQ4                | Construction activities with the potential to generate dust will be modified or ceased during unfavourable weather conditions to reduce the potential for dust generation.  | Section 7.1              |

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| AQ5  | Measures to reduce potential dust generation, such as the use of water carts, sprinklers, dust screens and surface treatments, will be implemented within project sites as required  | Section 7.1 |
| AQ6  | Access roads within project sites will be maintained and managed to reduce dust generation.  | Section 7.1 |
| AQ7  | Where reasonable and feasible, appropriate control methods will be implemented to minimise dust emissions from the project site.   | Section 7.1 |
| AQ8  | Storage of materials that have the potential to result in dust generation will be minimised within project sites at all times  | Section 7.1 |
| AQ9  | All construction vehicles and plant will be inspected regularly and maintained to ensure that they comply with relevant emission standards.  | Section 7.1 |
| AQ10 | Engine idling will be minimised when plant is stationary, and plant will be switched off when not in use to reduce emissions.  | Section 7.1 |
| AQ11 | The use of mains electricity will be favoured over diesel or petrol-powered generators where practicable to reduce site emissions.   | Section 7.1 |
| AQ12 | Haul roads will be treated with water carts and monitored during earthworks operations, ceasing works if necessary during high winds where dust controls are not effective.  | Section 7.1 |
| AQ13 | Suitable dust suppression and/or collection techniques will be used during cutting, grinding or sawing activities likely to generate dust in close proximity to sensitive receivers  | Section 7.1 |
| AQ14 | The potential for dust generation will be considered during the handling of loose materials. Equipment will be selected and handling protocols developed to minimise the potential for dust generation.  | Section 7.1 |
| AQ15 | All loaded spoil haulage trucks and other project-related heavy vehicles carrying materials with the potential to result in dust generation will be covered to prevent dust emissions during transport in accordance with relevant road regulations. | Section 7.1 |



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| AQ19                       | Areas of soil exposed during construction will be minimised at all times to reduce the potential for dust generation  | Section 7.1 |
| AQ20                       | Exposed soils will be temporarily stabilised during weather conditions conducive to dust generation and prior to extended periods of inactivity to minimise dust generation.  | Section 7.1 |
| AQ21                       | Exposed soils will be permanently stabilised as soon as practicable following disturbance to minimise the potential for ongoing dust generation.  | Section 7.1 |
| AQ22                       | Ensure that stockpiles of materials with the potential to result in dust emissions are adequately protected and managed to reduce potential dust generation.  | Section 7.1 |
| AQ23                       | Ensure fine materials are stored and handled to minimise dust.  | Section 7.1 |
| AQ24                       | All sealed surfaces within sites and site accesses will be managed to reduce dust generation and sediment tracking onto roads.  | Section 7.1 |
| AQ25                       | At the commencement of establishment of project ancillary facilities, controls such as wheel washing systems and rumble grids will be installed at all site exits to prevent deposition of loose material on sealed surfaces outside project sites to reduce potential dust generation. | Section 7.1 |
| <b>Noise and Vibration</b> |   |             |

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| <p>NV1</p> | <p>A suitably qualified and experienced acoustics advisor Acoustics Advisor, who is independent of the design and construction personnel, will be engaged for the duration of construction of the project. The Acoustics Advisor will be responsible for:</p> <ul style="list-style-type: none"> <li>• Reviewing management plans related to noise and vibration and endorsing that they address all relevant conditions of approval and requirements of all applicable guidelines</li> <li>• Reviewing location and activity specific noise and vibration impact assessments prepared during the project and endorsing the assessments and proposed mitigation measures</li> <li>• Reviewing proposals regarding works outside standard construction hours, confirming that the works are appropriate and endorsing the proposed mitigation measures</li> <li>• Monitoring noise and vibration from construction generally and: <ul style="list-style-type: none"> <li>◦ Confirming that actual noise and vibration levels and impacts are consistent with predictions</li> <li>◦ Confirming that reasonable and feasible noise and vibration mitigation measures are being implemented</li> <li>◦ Suggesting additional reasonable measures to further reduce impacts</li> </ul> </li> <li>• Monitoring and providing advice in relation to compliance with conditions of approval and project commitments related to noise and vibration</li> <li>• Providing advice in relation to complaints regarding noise and vibration impacts that cannot be resolved between the complaint and the project</li> <li>• Reviewing and endorsing the proposed operational noise controls, the associated noise model and the proposed implementation program.</li> </ul> | <p>An AA has been approved and engaged</p> |
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| <p>NV2</p> | <p>A Construction Noise and Vibration Management Plan (CNVMP) will be prepared for the project. The plan will:</p> <ul style="list-style-type: none"> <li>• Identify relevant performance criteria in relation to noise and vibration</li> <li>• Identify noise and vibration sensitive receivers and features in the vicinity of the project</li> <li>• Include standard and additional mitigation measures from the Construction Noise and Vibration Guideline (CNVG) (Roads and Maritime 2016) and details about when each will be applied</li> <li>• Describe the process(es) that will be adopted for carrying out location and activity specific noise and vibration impact assessments to assist with the selection of appropriate mitigation measures</li> <li>• Include protocols that will be adopted to manage works required outside standard construction hours in accordance with relevant guidelines</li> <li>• Detail monitoring that will be carried out to confirm project performance in relation to noise and vibration performance criteria.</li> </ul> <p>The CNVMP will be implemented for the duration of construction of the project.</p> | <p>Section 7.3<br/>Appendix A6</p> |
| <p>NV4</p> | <p>Location and activity specific noise and vibration impact assessments will be carried out prior to (as a minimum) activities:</p> <ul style="list-style-type: none"> <li>• With the potential to result in noise levels above 75 dBA at any receiver</li> <li>• Required outside standard construction hours likely to result in noise levels greater than the relevant noise management levels</li> <li>• With the potential to exceed relevant performance criteria for vibration.</li> </ul> <p>The assessments will clarify predicted impacts at relevant receivers in the vicinity of the activities to assist with the selection of appropriate management measures, consistent with the requirements of ICNG and CNVG that will be implemented during the works.</p>   | <p>Appendix A6</p>                 |

| Ref No.                      | Commitment  | Document Reference     |
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| NV5                          | <p>An out-of-hours works protocol will be developed for the construction of the project. The protocol will include:</p> <ul style="list-style-type: none"> <li>• Details of works required outside standard construction hours, including justification of why the activities are required outside standard construction hours</li> <li>• Measures that will be implemented to manage potential impacts associated with works outside standard construction hours</li> <li>• Location and activity specific noise and vibration impact assessment process(es) that will be followed to identify potentially affected receivers, clarify potential impacts and select appropriate management measures</li> <li>• Details of the approval process (internal and external) for works proposed outside standard construction hours.</li> </ul> <p>The protocol will be included in the CNVMP, prepared in consultation with NSW Department of Planning and Environment and the NSW EPA, endorsed by the Acoustics Advisor for the project and implemented during construction of the project.</p> | Appendix A3            |
| NV6                          | <p>Monitoring will be carried out at the commencement of activities for which a location and activity specific noise and vibration impact assessment has been prepared to confirm that actual noise and vibration levels are consistent with noise and vibration impact predictions and that the management measures that have been implemented are appropriate.</p>  | Section 7.3.3<br>CNVIS |
| <b>Property and land use</b> |   |                        |
| PL2                          | <p>Access to all properties will be maintained during construction, where feasible and reasonable, unless otherwise agreed by the relevant property owner or occupier. Any access physically affected by the project will be reinstated to at least an equivalent standard, unless agreed with by the property owner.</p>   | Section 7.2            |

| Ref No.                     | Commitment  | Document Reference  |
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| PL13                        | In the event that damage occurs to a property as a result of the construction of the project, the damage will be appropriately rectified. Any disputes between a property or infrastructure owners regarding damage and rectification will be referred to the Independent Property Impact Assessment Panel (see PL11) for resolution.                       | Construction Noise and Vibration Impact Statement (CNVIS)<br><br>Table 7-2 MMNV35 |
| <b>Urban design</b>         |   |   |
| UD1                         | Prepare an Urban Design and Landscape Plans Plan (UDLPs) for permanent built works and landscaping in consultation with relevant councils, stakeholders and the community. The construction of permanent built works will not commence until the element is included in a suitably prepared and approved UDLP, unless otherwise agreed to by the Secretary. | UDLP will be updated to reflect Stage 4   |
| UD2                         | Specific design measures at construction ancillary facilities to prevent crime, based on principles of Crime Prevention Through Environmental Design (CPTED), will be identified and implemented at each facility prior to the commencement of facility operation.  | Rozelle Parklands Facilities Enhancement Design Report<br><br>UDLP                |
| <b>Landscape and visual</b> |   |   |
| LV1                         | Ancillary facilities, including the locations of visible structures and plant and perimeter fencing and treatments, will be developed to minimise visual impacts for adjacent receivers where feasible and reasonable. Measures to minimise visual impacts for adjacent receivers will be implemented progressively during the site establishment phase.    | Section 5.3   |
| LV2                         | Site lighting will be designed to minimise glare issues and light spillage in adjoining properties and will be generally consistent with the requirements of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting.  | Section 7.9.1   |

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| LV3                   | Regular maintenance of site hoarding and perimeter site areas should be undertaken, including the prompt removal of graffiti and litter.   | Section 5  |
| LV4                   | Construction worksites and construction ancillary facilities will be established in such a manner as to minimise the need to remove screening vegetation wherever practicable.   | Section 5.3  |
| LV10                  | Where construction ancillary facilities are located in close proximity to sensitive residential receivers such as residents and users of recreational space, high quality fencing suitable for parks and public spaces should be considered.   | Section 5.3  |
| <b>Socio-economic</b> |  |  |
| SE2                   | <p>A Community Communication Strategy will be prepared that details:</p> <ul style="list-style-type: none"> <li>• Procedures and mechanisms that will be implemented in response to the key social impacts identified for the project</li> <li>• Property acquisition support services that will be provided</li> <li>• Procedures and mechanisms to communicate to project stakeholders (including affected communities), the access and connectivity enhancements and new community and social facilities that will be delivered as part of the project through the Social Infrastructure Plan and to update stakeholders on delivery progress</li> <li>• Procedures and mechanisms that will be used to engage with affected business owners to identify potential access, parking, business visibility and other impacts to develop measures to address potential impacts on a case by case basis</li> </ul> | Rozelle Interchange Community Communication Strategy was approved prior to the commencement of any work relating to the Project. |
| SE6                   | A community relations support toll-free telephone line will be operated to respond to any community concerns or requests for translation services.   | Rozelle Interchange Community Communication Strategy   |
| <b>Soil and water</b> |  |  |

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| SW01                 | A Construction Soil and Water Management Plan (CSWMP) will be prepared for the project. The plan will include the measures that will be implemented to manage and monitor potential surface water quality impacts during construction. The CSWMP will be developed 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 and Water 2008), commonly referred to as the 'Blue Book'. | Section 7.7  |
| SW03                 | Erosion and Sediment Control Plans (ESCPs) will be prepared for all work sites in accordance with the Blue Book. ESCPs will be implemented in advance of site disturbance and will be updated as required as the work progresses and the sites change.  | Section 7.7  |
| SW05                 | The extent of ground disturbance and exposed soil will be minimised to the greatest extent practicable to minimise the potential for erosion.   | Section 7.7  |
| SW06                 | Disturbed ground and exposed soils will be temporarily stabilised prior to extended periods of site inactivity to minimise the potential for erosion.   | Section 7.7  |
| SW07                 | Disturbed ground and exposed soils will be permanently stabilised and proposed landscaped areas will be suitably profiled and vegetated as soon as possible following disturbance to minimise the potential erosion.  | Section 7.7  |
| <b>Contamination</b> |   |  |
| CM01                 | 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 1997 (NSW) (CLM Act).   | LTEMP  |
| CM02                 | Asbestos handling and management will be undertaken in accordance with an Asbestos Management Plan (or similar) prepared in accordance with relevant legislation, regulations and codes of practice) as described in Chapter 23 (Resource use and waste minimisation) of the EIS.   | Unexpected asbestos find would be managed in accordance with the Unexpected Contamination and Asbestos Procedure (Appendix A5) |

| Ref No.                      | Commitment  | Document Reference  |
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| CM04                         | The Construction Waste Management Plan for the project, prepared as described in Chapter 23 (Resource use and waste minimisation) of the EIS, will include procedures for handling and storing potentially contaminated substances.   | Known contamination will need to be managed in accordance with the approved Long Term EMP |
| CM05                         | Stockpile management procedures will be implemented to control dust, odour and cross contamination  | Best Practice   |
| CM06                         | <p>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) and detailed in the CEMP. The procedure will include:</p> <ul style="list-style-type: none"> <li>• Cease work in the vicinity</li> <li>• Initial assessment by an appropriately qualified environmental consultant</li> <li>• Further assessment and management of contamination, if confirmed, in accordance with section 105 of the CLM Act.</li> </ul> | Unexpected Contamination and Asbestos Procedure (Appendix A5)                             |
| CM08                         | Measures identified in Chapter 25 (Hazard and risk) of the EIS will be implemented to appropriately store contaminated materials and materials with the potential to cause contamination dangerous goods and reduce the potential for environmental contamination due to spills and leaks.  | Best Practice   |
| <b>Flooding and Drainage</b> |   |   |
| FD12                         | Where drainage systems are to be upgraded or replaced during the project, existing systems will be left in place and remain operational during the process wherever possible.   | Table 7-2   |
| FD13                         | Runoff generated from project construction and operational facilities and discharges from water treatment facilities will be managed to mitigate risk of overloading the receiving drainage system.   | Table 7-2   |



| Ref No.             | Commitment  | Document Reference   |
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| FD14                | Entry points to the stormwater used by or immediately downgradient from the project sites will be inspected regularly for blockages and cleaned as required to maintain performance.  | Table 7-2  |
| <b>Biodiversity</b> |   |  |
| B1                  | <p>A Construction Flora and Fauna Management Plan (CFFMP) will be developed and implemented during construction. The CFFMP will include the following:</p> <ul style="list-style-type: none"> <li>• Identification of guidelines relevant to construction, the matters they apply to and what is required to ensure compliance</li> <li>• Pre-disturbance inspection requirements to identify features of biodiversity conservation significance and select appropriate management measures and environmental controls</li> <li>• Management measures and environmental controls to be implemented before and during construction including: <ul style="list-style-type: none"> <li>◦ An unexpected threatened species finds procedure</li> <li>◦ Section 3.3.2 Standard precautions and mitigation measures of the Policy and Guidelines for Fish Habitat Conservation and Management Update 2013 (DPI-Fisheries 2013)</li> <li>◦ Tree assessment and management protocols consistent with AS 4970-2009 Protection of trees on development sites</li> <li>◦ Weed management protocols.</li> </ul> </li> </ul> <p>The plan will include management measures outlined in Appendix S (Technical paper: Biodiversity) and from any additional assessments carried out during detailed design and project delivery as relevant.</p> | <p>The Construction Flora and Fauna is not relevant to Stage 4..</p> <p>Refer to section 7.6</p> |
| B4                  | An Erosion and Sediment Control Plan (ESCP) will be prepared as part of the project.  | Section 7.7  |

| Ref No.             | Commitment  | Document Reference   |
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|                     | The ESCPs will contain measures to stabilise all surfaces disturbed as a result of the project as soon as possible following the disturbance to prevent erosion and to minimise sedimentation in adjacent aquatic environments.   |  |
| B5                  | <p>The CFFMP will include measures to manage potential impacts on trees. Measures will include:</p> <ul style="list-style-type: none"> <li>• The establishment of tree protection zones</li> <li>• Ground protection measures for trees to be retained.</li> </ul>  | Tree protection zones and ground protection measures to be implemented within the newly constructed Rozelle Parklands are described in section 7.6 |
| B6                  | As many trees as possible will be retained during construction. In the event that tree removal cannot be avoided, a tree replacement strategy will be prepared. Replacement trees will be included in the relevant UDLP. Opportunities for the provision of replacement trees outside the project boundary will be investigated in consultation with local councils.  | <p>Not applicable to Stage 4 works</p> <p>Refer to section 7.6</p>   |
| B7                  | The CFFMP will include tree management protocols and provision for the development of tree management plans (in accordance with the requirements of AS 4970-2009) where required for specific trees. Protection of trees on development sites will be carried out in consultation with an arborist with a minimum Australian Qualifications Framework (AQF) Level 5 qualification in arboriculture for each tree proposed for retention where works associated with the project have the potential to impact on the tree root zone. | Refer to section 7.6   |
| B8                  | Tree removal, pruning and maintenance work will be carried out by an arborist with a minimum AQF Level 3 qualification in accordance with AS 4373-2007 Pruning of Amenity Trees and the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998) and advice provided by an arborist with a minimum AQF Level 5 qualification in arboriculture (or equivalent).   | Refer to section 7.6   |
| <b>Urban design</b> |   |  |
| OB9                 | The UDLP will be prepared and implemented to include compensatory planting for trees removed by the project. The plan will include:   | <p>UDLP</p> <p>No trees to be removed by the Project.</p>  |

| Ref No.                        | Commitment   | Document Reference                                  |
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|                                | <ul style="list-style-type: none"> <li>• A tree replacement strategy</li> <li>• Species recommendations for the landscape design to consider, including foraging trees for the Grey-headed Flying-fox</li> </ul> <p>Relevant project specific rehabilitation and revegetation measures associated with the M4 East and New M5 projects, where there is an overlap in use of project footprint.</p>   |   |
| <b>Non-Aboriginal Heritage</b> |  |   |
| NAH1                           | <p>Construction Heritage Management Plan (CHMP) will be prepared and implemented as part of the Construction Environmental Management Plan. The CHMP will include:</p> <ul style="list-style-type: none"> <li>• Measures that will be implemented to manage potential impacts to items of heritage significance</li> <li>• Inclusion of heritage awareness and management training for relevant personnel involved in site works</li> <li>• Details regarding the conservation and curation of any historical artefacts recovered during works.</li> </ul> | <p>Section 7.4<br/>Section 7.5</p>                  |
| NAH06                          | <p>Potential vibration impacts to features of heritage significance will be managed in accordance with the CNVMP prepared for the project.</p>   | <p>Table 7-2 Environmental Safeguards<br/>CNVIS</p> |
| NAH08                          | <p>Any items of potential heritage conservation significance or human remains discovered during construction will be managed in accordance with an Unexpected Heritage Finds and Humans Remains Procedure developed for the project in accordance with relevant guidance provided by the Heritage Council of NSW, the NSW Heritage Division of OEH and the Standard Management Procedure regarding notification of relevant agencies and the NSW Police and will be implemented for the duration of construction.</p>                                      | <p>Appendix A4</p>                                  |

| Ref No.                    | Commitment  | Document Reference |
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| <b>Aboriginal Heritage</b> |   |                    |
| AH1                        | Any items of potential Aboriginal archaeological or cultural heritage conservation significance or human remains discovered during construction will be managed in accordance with the Unexpected Heritage Finds and Humans Remains Procedure developed for the project.  | Appendix A4        |
| <b>Greenhouse Gas</b>      |   |                    |
| GHG3                       | Opportunities to use low emission construction materials, such as recycled aggregates in road pavement and surfacing, and cement replacement materials will be investigated and incorporated where feasible and cost-effective.   | Section 7.11       |
| GHG4                       | Construction plant and equipment will be operated and maintained to maximise efficiency and reduce emissions, with construction planning used to minimise vehicle wait times and idling onsite and machinery turned off when not in use.  | Table 7-2          |
| GHG5                       | Locally produced goods and services will be procured where feasible and cost effective to reduce transport fuel emissions.  | Section 7.11       |
| <b>Resources and Waste</b> |   |                    |
| RW1                        | <p>Construction material will be sourced in accordance with the relevant aims of the WestConnex Sustainability Strategy (Sydney Motorway Corporation 2015) and a Sustainability Management Plan (that will be developed during detailed design), including to optimise resource efficiency and waste management, and select locally sourced materials and prefabricated assets where possible, to reduce greenhouse gas emissions.</p> <p>Unnecessary resource consumption will be avoided through the detailed design of the project and by making realistic predictions about the required quantities of resources, such as construction materials.</p> | Section 7.11       |

| Ref No. | Commitment   | Document Reference |
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| RW2     | Wastes will be managed and disposed of in accordance with relevant NSW legislation and government policies.  | Section 7.10       |
| RW3     | A Construction Waste Management Plan will be prepared as part of the CEMP and regularly updated during detailed design and construction, detailing appropriate procedures for waste management. The plan will include the waste management measures described in this EIS.   | Section 7.10       |
| RW4     | <p>Wastes will be managed using the waste hierarchy principles of:</p> <ul style="list-style-type: none"> <li>• Avoidance of unnecessary resource consumption to reduce the quantity of waste being generated</li> <li>• Recovery of resources for reuse on-site or off-site for the same or similar use, without reprocessing</li> <li>• Recovery of resources through recycling and reprocessing so that waste can be processed into a similar non-waste product and reused</li> <li>• Disposal of residual waste.</li> </ul>  | Section 7.10       |
| RW5     | <p>Resource recovery will be applied to the management of construction waste and will include:</p> <ul style="list-style-type: none"> <li>• Recovery of resources for reuse - reusable materials generated by the project will be segregated for reuse on site, or off site where possible, including the reuse of the major waste streams (VENM)</li> <li>• Recovery of resources for recycling - recyclable resources (such as metals, plastics and other recyclable materials) generated during construction and demolition</li> <li>• Resources will be segregated for recycling and sent to an appropriate recycling facility for processing</li> <li>• Recovery of resources for reprocessing - cleared vegetation will be mulched or chipped on-site and used for landscaping, in the absence of a higher beneficial use being identified.</li> </ul> | Section 7.10       |

| <b>Ref No.</b>           | <b>Commitment</b>   | <b>Document Reference</b>              |
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| RW6                      | Options identified for the off-site reuse of waste will comply with relevant NSW EPA resource recovery exemptions and requirements.   | Section 7.10                           |
| RW10                     | 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) and detailed in the CEMP.  | Appendix A5                            |
| RW11                     | Spoil stockpiles will be provided with appropriate environmental controls and managed to reduce potential impacts associated with dust generation, erosion and sedimentation.   | Section 7.7                            |
| RW14                     | Asbestos handling and management will be undertaken in accordance with an Asbestos Management Plan (or similar) prepared in accordance with relevant legislation, regulations and codes of practice as described in Chapter 23 (Resource use and waste minimisation) of the EIS. Adjacent communities will be provided with advance notification about potential hazards. | Section 7.8                            |
| OpRW1                    | The project will be operated in accordance with the relevant aims of the WestConnex Sustainability Strategy (Sydney Motorway Corporation 2015) and a Sustainability Strategy will be developed during detailed design to outline ways to optimise resource efficiency and waste management.   | Sustainability Strategy                |
| OpRW2                    | Waste will be managed and disposed of in accordance with relevant NSW legislation and government policies and the mitigation measures described in this EIS.  | Section 7.10                           |
| <b>Climate Change</b>    |   |  |
| CC1                      | In the refinement of construction Work Health and Safety Management Plans, consider the increased potential for heat stress among construction personnel and implement measures for greater awareness and education of personnel around health and wellbeing during periods of extreme heat.  | Work Health and Safety Management Plan |
| <b>Hazards and Risks</b> |   |  |

| Ref No. | Commitment  | Document Reference |
|---------|---|--------------------|
| HR1     | <p>Storage of dangerous goods and hazardous materials will occur in accordance with suppliers' instructions and relevant Australian Standards and legislation including the:</p> <ul style="list-style-type: none"> <li>• Work Health and Safety Act 2011 (NSW)</li> <li>• Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW 2005)</li> <li>• Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (NSW EPA 1997).</li> </ul> <p>Storage methods may include bulk storage tanks, chemical storage cabinets/containers or impervious bunds.</p> | Best practice      |
| HR2     | Secure, bunded areas will be provided around storage areas for oils, fuels and other hazardous liquids. Impervious bunds will be of sufficient capacity to contain at least 110 per cent of the volume of the largest stored container.   | Section 7.10       |
| HR3     | Management measures to reduce the potential for spills, reduce potential spill volumes and prevent any contamination will be developed and implemented for activities such as vehicle refuelling, servicing, maintenance, and washdown, where there is a potential for spills and contamination.  | Section 7.10       |
| HR4     | Safety Data Sheets for dangerous goods and hazardous substances will be stored on site prior to their arrival.  | Section 7.10       |
| HR5     | Transport of dangerous goods and hazardous substances will be conducted in accordance with relevant legislation and codes, including the Dangerous Goods (Road and Rail Transport) Regulation 2014 (NSW) and the Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission 2008).  | Section 7.10       |
| OpHR6   | Storage of dangerous goods and hazardous materials will occur in accordance with suppliers' instructions and relevant Australian Standards and legislation including the:   | Section 7.10       |

| Ref No. | Commitment   | Document Reference |
|---------|--|--------------------|
|         | <ul style="list-style-type: none"> <li>• Work Health and Safety Act 2011 (NSW)</li> <li>• Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW 2005)</li> <li>• Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (NSW EPA 1997).</li> </ul> <p>Storage methods may include bulk storage tanks, chemical storage cabinets/containers or impervious bunds.</p> |                    |
| OpHR7   | Secure, bunded areas will be provided around storage areas for oils, fuels and other hazardous liquids. Impervious bunds will be of sufficient capacity to contain at least 110 per cent of the volume of the largest stored container.  | Section 7.10       |
| OpHR8   | Management measures to reduce the potential for spills, reduce potential spill volumes and prevent any contamination will be developed and implemented for activities such as vehicle refuelling, servicing, maintenance or washdown, where there is a potential for spills and contamination.   | Section 7.10       |
| OpHR9   | Material Safety Data Sheets for dangerous goods and hazardous substances will be stored on site prior to their arrival.  | Section 7.10       |



## 4. Engagement

TfNSW has engaged with relevant project stakeholders for the development of the CEMP and the construction of Stage 4 works as summarised in Table 4-1 below.

Table 4-1 Engagement activities for Rozelle Parkland Facilities Enhancements

| Stakeholders  | Aspect  | Timing                                 |
|---|---|--|
| Environmental Representative                                    | Endorsement of CEMP   | Prior to submission to DPHI            |
| NSW Department of Environment and Planning                      | Approval of CEMP  | Prior to commencement of Stage 4 works |
| Inner West Council  | Coordination of work program in same vicinity.  | Prior to commencement of Stage 4 works |
| Western Harbour Tunnel Project (TfNSW)                          | Coordination of work program in same vicinity.  | Prior to commencement of Stage 4 works |
| Affected Community (residents and businesses in local vicinity) | Construction impacts  | Prior to and during construction.      |
| Broader Community   | Disseminate regular project updates and other information through the project website | Prior to and during construction.      |

Refer to Section 2.8 of the UDLP (Urban Design and Landscape Plan) for Stakeholder and Community consultation on the Rozelle Parklands facilities and layout.

The Communication Strategy (RIC-JHC-MPL-00-PL-090-00) will be implemented throughout the Rozelle Parklands Facilities Enhancement works for the management of community interactions during construction.

## 5. Rozelle Parkland Facilities Enhancements

Rozelle Parklands provide up to 10 hectares of public open space on the site of old Rozelle Rail Yards. The Rozelle Parklands supports active recreation by the provision of playing fields, a children's playground, an amenities building, fitness stations, pedestrian footpaths and an Active Transport Network pedestrian and cycle pathway.

The Rozelle Parklands Working Group convened by Transport for NSW (TfNSW), has worked closely with key stakeholders including Department of Planning Industry and Environment (DPIE), NSW Office of Sport and Inner West Council (IWC or Council) and members of the community to ensure that the optimal 'end state' design and usage of the Rozelle Parklands is representative of the needs of the local community. The key elements of the Rozelle Parkland Facilities Enhancements were developed from the recommendations outlined in *Rozelle Parklands Working Group Final Recommendation Report* (Becscomm, 2021).

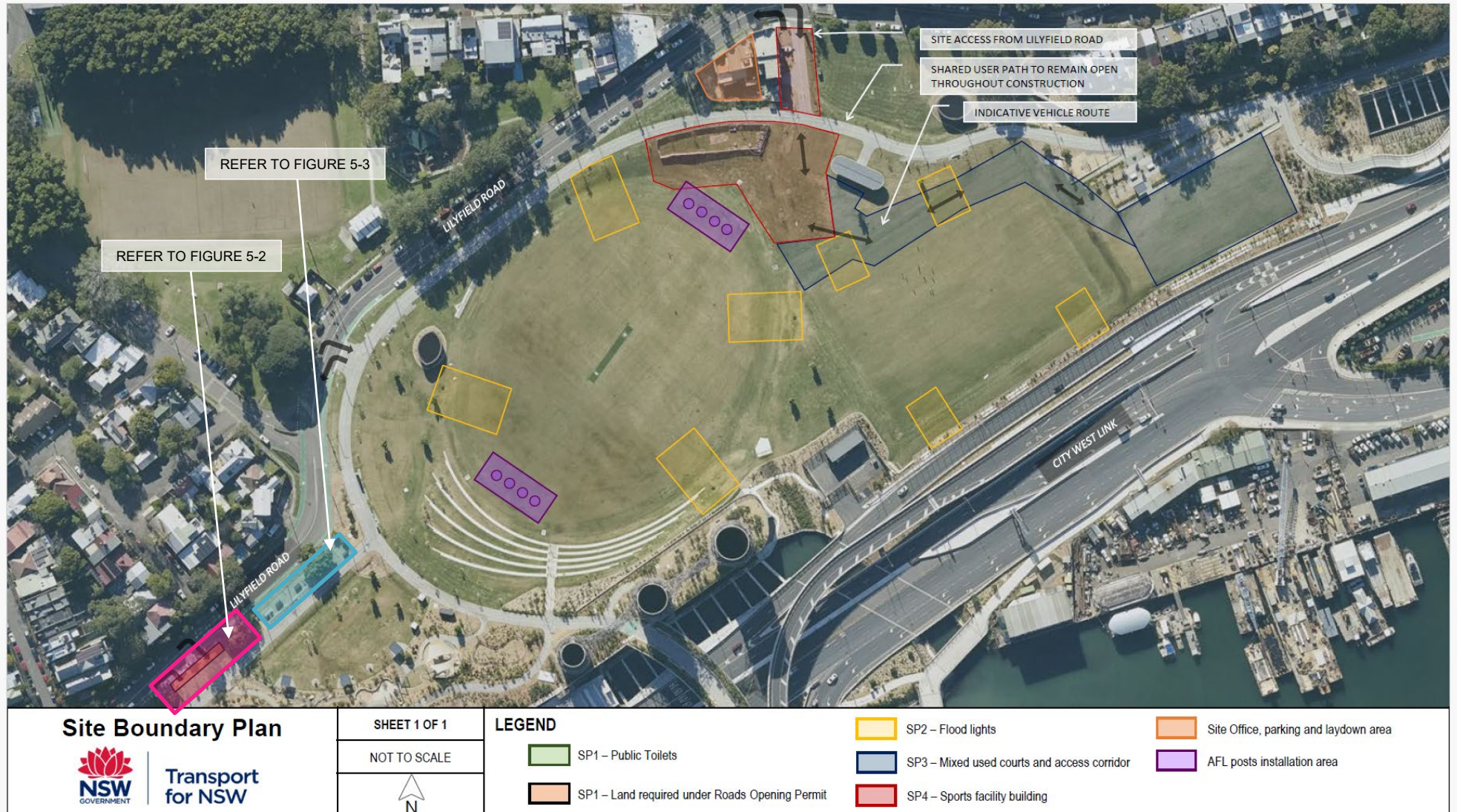
### 5.1 Stage 4 works

The key elements of the Rozelle Parkland Facilities Enhancements include (Figure 5-1):

- An additional amenities building (Facilities Building 2) to be constructed between the cricket pitch and the shared user path that will include change rooms, amenities, umpire facilities, a storeroom and provision for a canteen facility
- Two synthetic mixed-purpose courts to accommodate a range of sports including netball, basketball and tennis
- An additional toilet block to be constructed near the children's playground, including an additional site compound for sewer and power connections on Lilyfield Road as shown on Figure 5-2.
- Installation and commissioning of four lighting towers over the AFL/cricket oval and soccer oval (piling works and conduits were undertaken during Stage 2 of the project)
- Installation of eight AFL goal posts.
- Utility works including protection and/or adjustment of existing utilities and installation of new utilities.

The Rozelle Parklands is the main design element of the project as described in the Urban Design and Landscape Plan. As per CoA 134, staging of the parklands is anticipated in the plan to maximise progressive public access and use of the park, with Stage 2 and 3 becoming operational whilst construction of Stage 4 is undertaken. Completion of Stage 4 is independent of the opening of the motorway.

Figure 5-1 Rozelle Parklands Facilities Enhancement

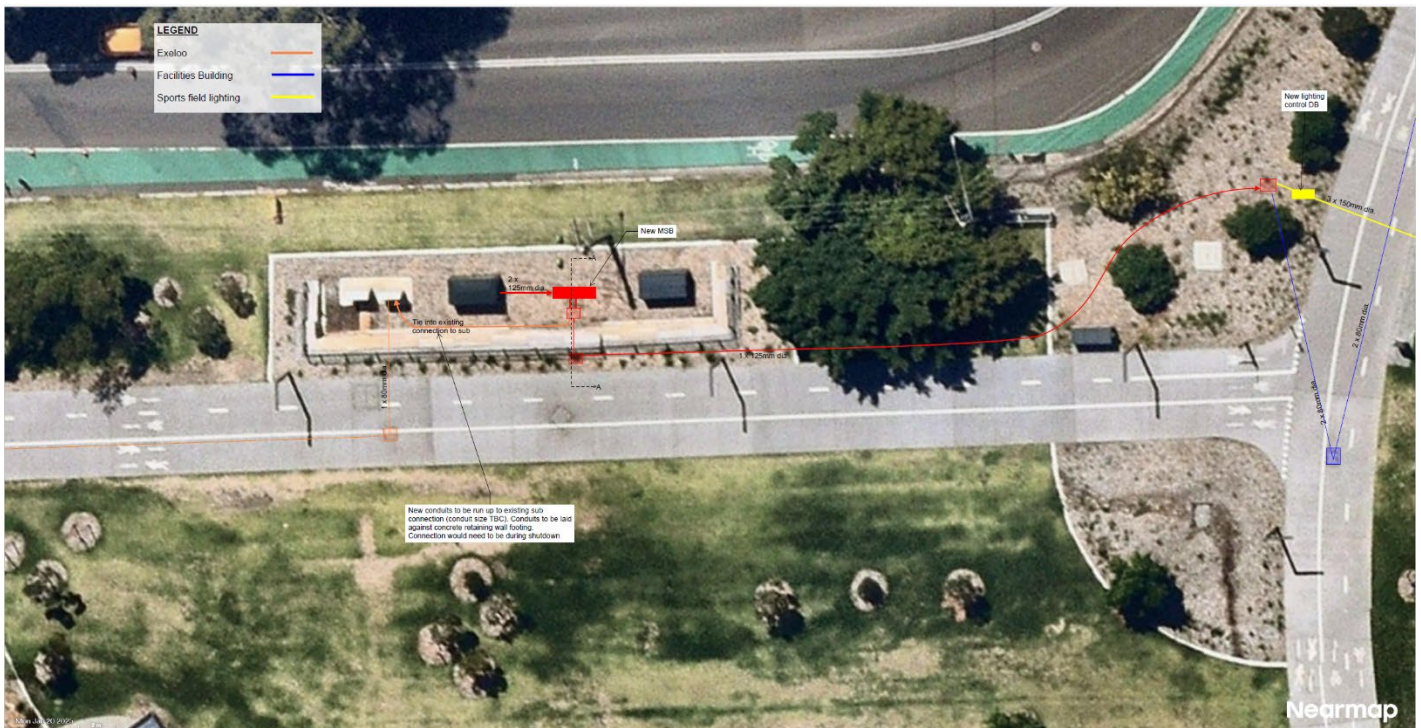




**Legend:**

- Indicative extent of parking removal
- Site compound for sewer connection
- Site compound for permanent toilet facility

**Figure 5-2 Additional scope to facilitate utilities connections of new public toilet block**



**Figure 5-3 Detail re new MSB, electrical pits and trenching for conduits (in red).**

## 5.2 Timing of Stage 4 works

Construction of Stage 4 works are planned to start in the second quarter of 2024, with completion planned for the second quarter of 2025. The total period of construction works is expected to be

around 38 weeks.

### **5.3 Temporary construction ancillary site for Stage 4 works**

Temporary construction ancillary sites will be established for Stage 4 works. These ancillary sites will be located in Rozelle Parklands and will maintain direct vehicular access to Lilyfield Road for light and heavy vehicles. These ancillary sites will not be located next to sensitive receivers and have no impacts on heritage items, threatened species, populations or ecological communities beyond the impacts approved under the terms of the CSSI approval. The construction worksites and construction ancillary facilities will be established in such a manner as to minimise the need to remove screening vegetation wherever practicable. Where construction ancillary facilities are located in close proximity to sensitive residential receivers such as residents and users of recreational space, high quality fencing suitable for parks and public spaces will be considered.

Light vehicles will use the site on a daily basis, with the ancillary site offering short term parking for light vehicles. Heavy vehicles use of the site will be more variable and would involve the delivery of construction materials and the removal of waste material.

Boundary screen and security fencing will be established around the perimeter of the ancillary site to delineate the extent of the site and to minimise impacts on visual amenity. It will also aim to prevent access by members of the public utilising Rozelle Parklands, which will be operational during Stage 4 works. The boundary screening will remain for the duration of site establishment and construction unless otherwise agreed with relevant council(s), and affected residents, business operators or landowners. The main features of this ancillary site will include:

- Site office
- Toilet ablutions
- Materials laydown and storage area
- Stockpiling of excavated material
- Parking for small number of light vehicles for construction personnel
- Parking for heavy vehicles such as water carts and excavators
- Temporary storage of construction waste prior to disposal

## 6. Environmental Aspects & Impacts

Potential impacts during Stage 4 works are likely to be short term and localised to the immediate vicinity of Stage 4 works areas. The CoAs and REMMs, as detailed in Table 3-1 and Table 3-2 would be implemented to avoid and minimise work-related environmental impacts.

Table 6-1 Relevant environmental aspects and potential environmental impacts

| Environmental Aspect | Existing Environment / Relevance  | Potential Impact  |
|----------------------|---|---|
| Traffic and access   | <ul style="list-style-type: none"> <li>Rozelle Parklands is expected to be operational and accessible to the public when construction commences.</li> <li>The shared user path providing connectivity between the Anzac Bridge, Victoria Road and the Crescent (Annandale) is expected to be operational and accessible to the public when construction commences.</li> </ul>   | <ul style="list-style-type: none"> <li>Traffic generated by construction vehicles and personnel impacting on the arterial and local road network.</li> <li>Temporarily restricting pedestrian and cyclist movements on the shared user path and affected footpaths within the Parklands while construction vehicles access construction sites</li> <li>Temporarily restricting park users from the ovals during the installation of lighting poles</li> <li>Temporarily remove parking along Lilyfield Rd to facilitate public toilet installation and connection.</li> </ul> |
| Air Quality          | <ul style="list-style-type: none"> <li>Air quality in a region is influenced by a number of factors including the terrain, meteorology (weather patterns), historical trends in road traffic emissions and the current (ambient) and historical air quality</li> </ul>  | <ul style="list-style-type: none"> <li>Generation of dust from construction.</li> <li>Works would include excavation, disturbance of ground and the use of plant and equipment that would result in emissions.</li> </ul>   |
| Noise & Vibration    | <ul style="list-style-type: none"> <li>Works are within the Village Green Precinct of Rozelle Parklands, about between 60 and 80 metres from residential receivers on Lilyfield Road. However, construction works will be progressive in nature and will not occur at a single location for an extended period of time.</li> <li>Works will be undertaken during daytime standard hours.</li> <li>Receivers surrounding Rozelle Parklands and in proximity to the Village Green precinct are predominantly residential.</li> <li>The acoustic environment in the residential areas is mostly</li> </ul> | <ul style="list-style-type: none"> <li>Works would include the use of plant and machinery that will emit noise and have the potential to result in vibration.</li> <li>Noise and vibration generated from construction activities to potentially affect residences</li> <li>Delivery of materials to construction sites outside of standard construction hours</li> </ul>   |

| Environmental Aspect    | Existing Environment / Relevance   | Potential Impact  |
|-------------------------|--|---|
|                         | <p>influenced by noise from Lilyfield Road and City WestLink. Traffic noise on City WestLink is continuous, rather than intermittent.</p> <ul style="list-style-type: none"> <li>• Cadden Le Messurier (84 Lilyfield Road) and Former Hotel (78 Lilyfield Road) are located about 15-20 metres from Facilities Building 2.</li> </ul> <p><i>Further detail of the existing environment and potential impacts is addressed in the CNVIS for the activities.</i></p>   |   |
| Biodiversity            | <ul style="list-style-type: none"> <li>• Works are being undertaken within the newly construction Rozelle Parklands, from which native vegetation conforming to a Plant Community Type is absent.</li> <li>• No EEC or Threatened flora species have been identified as occurring within Rozelle Parklands.</li> </ul>   | <ul style="list-style-type: none"> <li>• Clearing and trimming of newly planted vegetation to allow construction access</li> <li>• Disturbance of newly landscaped areas during installation of conduits for Facilities Building 2, new toilet block and for the light poles</li> <li>• Ground cover disturbance within construction footprint</li> </ul> |
| Non-Aboriginal Heritage | <ul style="list-style-type: none"> <li>• Stage 4 works area have been highly disturbed in the past through road construction and urban development, and more recently the construction of Rozelle Parklands</li> <li>• The salvage railway yard tracks that have been incorporated into landscape features of Rozelle Parklands do not comprise a listed heritage item</li> <li>• The following heritage items and conservation areas are located in proximity to Stage 4 works for Facilities Building 2: <ul style="list-style-type: none"> <li>○ Cadden Le Messurier (84 Lilyfield Road)</li> <li>○ Former Hotel (78 Lilyfield Road)</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Unexpected discoveries of non-aboriginal heritage items</li> </ul>   |
| Aboriginal Heritage     | <ul style="list-style-type: none"> <li>• Stage 4 works areas have been highly disturbed in the past through road construction and urban development, and more recently the construction of Rozelle Parklands.</li> </ul>   | <ul style="list-style-type: none"> <li>• Unexpected discoveries of Aboriginal heritage items</li> </ul>   |

| Environmental Aspect      | Existing Environment / Relevance  | Potential Impact   |
|---------------------------|---|--|
| Visual                    | <ul style="list-style-type: none"> <li>• Stage 4 works areas are located within the newly constructed Rozelle Parklands</li> <li>• Stage 4 works would be carried out at five separate construction site locations over a 6-month period, with works at each location being staged within that period of time</li> </ul>  | <ul style="list-style-type: none"> <li>• Temporary visual impacts of construction</li> </ul>   |
| Land Use & Socio-Economic | <ul style="list-style-type: none"> <li>• Rozelle Parklands is expected to be operational and accessible to the public when construction commences</li> <li>• Stage 4 works will be transient in nature and would not exist in a single location for an extended period of time</li> <li>• Works will result in amenities that support the public use of the Village Green precinct within the Rozelle Parklands.</li> <li>• Proximity of utilities including Sydney Trains HV cables, existing and new Sydney Water sewer alignments</li> </ul> | <ul style="list-style-type: none"> <li>• Temporary reduction in access to Rozelle Parklands during construction, as construction sites and the ancillary site are delineated with fencing and/or boundary screening</li> </ul>   |
| Soil & Water              | <ul style="list-style-type: none"> <li>• Works will involve excavation for building foundations, trenching for utilities, and reinstating footpaths and landscaping where required</li> <li>• Activities are sequential in nature therefore limiting the total disturbance area at any one time.</li> <li>• Proximity of Facilities Building 2 to a newly constructed drainage swale within Rozelle Parklands</li> </ul>  | <ul style="list-style-type: none"> <li>• Exposure of soils.</li> <li>• Sediment laden water leaving site.</li> <li>• Mismanagement of erosion and sediment controls.</li> </ul>  |
| Contamination             | <ul style="list-style-type: none"> <li>• Works will be undertaken in accordance with the approved LTEMP and with reference to the SAS and SAR.</li> </ul>   | <ul style="list-style-type: none"> <li>• Earthworks have the potential to expose soil containing heavy metals, hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) and asbestos that has been retained beneath soil or hardstand capping layers</li> <li>• Activities involving excavation (ie. piling works for second facilities building) have the potential to intercept hydrocarbon-impacted perched groundwater that has been</li> </ul> |



| Environmental Aspect | Existing Environment / Relevance   | Potential Impact  |
|----------------------|--|---|
|                      |  | <p>identified within a portion of Rozelle Parklands.</p> <ul style="list-style-type: none"> <li>• Mobilisation of contamination in soils by earthworks and movement of plant and equipment</li> <li>• Mobilisation of contaminants in exposed soils by rainfall or surface water run-off</li> <li>• Spills of hydraulic oils and fuels from vehicles and plant equipment may impact on soil and water quality.</li> </ul> |
| Waste                | <ul style="list-style-type: none"> <li>• Excavated material is to be reused in backfill where suitable</li> <li>• Excess material is to be removed from the site and will not be stored</li> </ul> | <ul style="list-style-type: none"> <li>• Inappropriate use or management of excess spoil generated from excavated material</li> <li>• Illegal or improper disposal of waste material</li> <li>• Aesthetic effects of waste material management on site.</li> </ul>  |

## 7. Environmental Management

From the impacts described in Section 6, the following environmental management measures will be implemented to mitigate potential environment impacts. Table 7-2 summarises the environmental safeguards to be implemented for Stage 4 works.

### 7.1 Air quality

Air quality during construction will focus on the management of dust. The measures included in Table 7-2 are proposed.

### 7.2 Traffic and access

Traffic and access aspects will be managed via the measures identified in Table 7-2 and through the implementation of a Traffic Management Plan and the Construction Parking and Access Strategy.

#### 7.2.1 Traffic

Only State (Regional) roads will need to be used to access work locations. Access to and from the site as shown in Figure 5-1 will be via:

- Lilyfield Road (from Balmain Road) for inbound vehicles
- Catherine Street (off Lilyfield Road) for outbound vehicles

Vehicle movements will be managed under an approved Traffic Management Plan and will include traffic control at the site entry / exit to ensure safe movements off Lilyfield Road for vehicles entering and from the site on to Lilyfield Road for vehicles exiting. Vehicles will not be permitted to idle or queue outside Rozelle Parklands area and will be managed by traffic controllers to ensure immediate access to the site.

#### 7.2.2 Worker Parking

There will be minimal impacts on on-street parking for the project and these impacts will be short term and site personnel will be approximately 15 at any time, with only 8 needing to park offsite. Parking and access impacts will be managed in accordance with the Construction Parking and Access Strategy (CPAS).

The CPAS will outline reasonable and feasible mitigation measures will be implemented to mitigate impacts on parking. These include:

- Encouraging workforce to utilise public transport
- Workforce to utilise car-pooling
- Workforce to park legally and not block access to properties
- Workforce to utilise active transport methods

#### 7.2.3 On-Street Parking Impacts

There will be the requirement to temporarily remove four parking spots on Lilyfield Road, to facilitate access to the new toilet block. Temporary removal of these parking spots will be for the duration of works for the new toilet block (Shown in Figure 5-1).

Following the finalisation of the sewer connection design, the temporary removal of an additional 11 parking spots have been identified on the opposite side of Lilyfield Road at the toilet block site. This is addressed in the CPAS as having no measurable impact for on-street parking. A Construction Parking and Access Strategy has been developed as per CoA E54 and includes mitigation measures for dealing with the removal of on-street parking. The CPAS includes:

- Parking surveys of all parking spaces to be removed to determine current demand during peak, off-peak, school drop off and pickup, and weekend periods.
- Consultation with affected stakeholders utilising existing on- and off-street parking stock which will be impacted as a result of construction.
- Assessment of the impacts of changes to on- and off-street parking stock taking into consideration outcomes of consultation with affected stakeholders.
- 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.

#### **7.2.4 Internal Site Access**

Stage 4 works will require access to portions of Rozelle Parklands to be temporarily restricted to park users (Figure 5-1). The internal haul road to be established to construction sites will cross the newly built shared user path, which will require traffic control to manage the safe crossing of heavy and light vehicles. The installation and commissioning of four lighting towers over the AFL/cricket oval and soccer oval may require the partial or full closure of the ovals, as the lighting towers are progressively installed. The installation of AFL goal posts will also require partial or full closure of the AFL oval. Construction sites would be defined by the installation of security mesh fencing to prevent unauthorised access by park users.

### 7.2.5 Local Roads

In accordance with CoA E46 and E47, access to utilities and properties will be maintained wherever possible, unless prior agreement can be reached with the property or utility owner prior to the impact being implemented. Any property access physically affected by the construction of the Project is to be reinstated at the cessation of the associated activity to at an at least equivalent standard, unless otherwise agreed by the landowner or occupier.

If local road closures or changes to property access are required, this will be undertaken in consultation with Transport for NSW, CJP, local councils and property owners that are likely to be impacted.

## 7.3 Noise and Vibration

An initial Construction Noise and Vibration Impact Statement (CNVIS) dated 11 January 2024 (Appendix A6) was prepared to detail the specific requirements for the management of noise and vibration including out of hours works approvals, monitoring requirements and predicted noise and vibration levels from the work activity. This initial scope covered most construction activities including the installation of the public toilet block. Following a design change for sewer connection a second CNVIS dated 18 February 2025 (Appendix A7) has been prepared.

The Noise Catchment Areas (NCAs) adjoining Rozelle Parklands are dominated by residential receivers. Construction noise will be clearly audible at residential receivers within NCA 24 and 28 that are closest to Rozelle Parklands. These locations are shown in Appendix C of the CNVIS 11 January 2024. Some Stage 4 works are predicted to produce noise levels that exceed Noise Management Levels (NMLs) at some receivers. The noisiest construction activities are predicted to be noise-intensive earthworks required for Facilities Building 2 and the mixed-purpose courts, due to the use of a rock breaker. 21 receivers from NCAS 24 and 25 are predicted to be “highly noise affected” (i.e. predicted  $L_{Aeq(15minute)}$  noise at residential receiver is 75 dBA or greater) during noise-intensive earthworks.

The CNVIS 18 February 2025 highlights a further 4 receivers from NCA 24 are predicted to be “highly noise affected” due to the use of a diamond saw, and handheld jackhammer to reach the sewer in the middle of Lilyfield Road.

When noise-intensive equipment is not in use, the noise levels are expected to be much less. For most construction activities, it is expected that noise levels would frequently be lower than predicted, as the predicted noise levels are based on each scenario occurring at the work zone boundary (which is the closest point to each receiver); some work scenarios will be set back from the work zone boundary.

A summary of NML exceedances is provided in Table 7-1, with further information provided in the CNVIS in Appendix A6 and Appendix A7. Further information regarding AFL goal post scope provided in letter dated 5 November 2024 from Acoustic Advisor (reference 19007-NV-ED-26-0).

Table 7-1 Overview of Noise Management Level exceedances

| Works | Construction scenario | No. highly noise affected receivers <sup>1</sup> | Number of receivers affected during standard daytime hours <sup>2</sup> |         |       |
|-------|-----------------------|--|---|---------|-------|
|       |                       |  | 1-10dB  | 11-20dB | >20dB |
|       |                       |  |   |         |       |

|   |   |    |    |    |   |
|---|---|----|----|----|---|
| Construction of Facilities Building 2   | Earthworks -Noise Intensive                   | 3  | 74 | 4  | - |
|   | Earthworks -Typical                           | -  | 2  | -  | - |
|   | Piling  | -  | 5  | -  | - |
|   | Concrete works                                | -  | 4  | -  | - |
|   | Steel/roofing/fitout                          | -  | 2  | -  | - |
|   | landscaping                                   | -  | 2  | -  | - |
|   | Compound Operation                            | -  | 7  | -  | - |
| Construction of mixed-purpose courts  | Earthworks – Noise Intensive                  | 21 | 47 | 28 | - |
|   | Earthworks – Typical                          | -  | 20 | -  | - |
|   | Concrete works, construction of sports courts | -  | 28 | -  | - |
|   | Landscaping                                   | -  | 21 | -  | - |
| Installation and commissioning of lighting towers<br>Installation of AFL Goal Posts | Install light columns                         | -  | 2  | -  | - |
|   | Install Goal Posts                            |    |    |    |   |
| Construction of toilet block near the children’s playground                         | Concrete works                                | -  | 6  | -  | - |
|   | Steel/roofing/fitout                          | -  | 4  | -  | - |
|   | Landscaping                                   | -  | 4  | -  | - |
|   | Demolition                                    | 4  | 9  | 1  | 4 |
| Sewer connection  | Pipework                                      | -  | 5  | -  | - |
|   | Paving  | 1  | 10 | -  | 1 |

<sup>1</sup> Based on ICNG definition (i.e. predicted LAeq(15minute) noise at residential receiver is 75 dBA or greater).

<sup>2</sup> No night time or Out of Hours Works are proposed

The use of a vibratory roller and a 5t excavator-breaker, considered to be vibration-intensive equipment, is required during construction of Facilities Building 2 and the mixed-purpose courts. One light commercial building is located within 20 metres of Facilities Building 2, which is within the minimum working distance in which cosmetic damage may occur. Up to 69 receivers in NCAs 24 and 25 are within the human comfort minimum working distance (100 metres) of Facilities Building 2 and the mixed-purpose courts, and occupants of affected buildings may be able to perceive vibration impacts at times when vibration intensive equipment is in use. A <50 kN (1–2 tonne) vibratory roller and handheld jackhammer are required for the sewer connection works for the public toilet block.

Noise and vibration aspects will be managed via the measures identified in Table 7-2. A number of mitigation and management measures have been recommended. Where feasible and reasonable these must be applied to the Project to control and minimise the impacts during construction as far as practicable.

Recommendations during commencement of each work scenario:

- Select plant and equipment which is equivalent or quieter than that adopted in the assessment.
- Implement any additional mitigation measures as detailed in the Environmental

Management Plan (CEMP).

- Undertake noise and vibration monitoring during work to confirm impacts
- Appropriate information should be provided to the nearby receivers to detail the expected duration and timing of works as per the CEMP.

### **7.3.1 Hours of Operation**

Approved working hours on this project (CoA E68) are:

- 7:00am to 6:00pm Mondays to Fridays, inclusive
- 8:00am to 1:00pm Saturdays
- At no time on Sundays or public holidays.

Under CoA E69 works may be also undertaken between 1:00 pm to 6:00 pm on Saturday.

Under CoA E72, 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:

- 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
- in continuous blocks not exceeding three hours, with a minimum respite from those activities and works of not less than one hour.

On becoming aware of the need for emergency works, the Proponent must notify the AA, the ER and the EPA of the need for that work. The Proponent will use best endeavours to notify all noise and/or vibration sensitive receivers of the likely impact and duration of the works.

### **7.3.2 Out of Hours Work Approval**

Per the requirements of MCoA E73, out of hours (OOHW) can occur under strict conditions. For all OOH works required, an OOHW Permit will be submitted to the ER and AA for endorsement prior to works occurring including noise assessment. Refer to the OOHW protocol in Appendix A3.

### **7.3.3 Construction Noise and Vibration Monitoring**

Noise and vibration monitoring will be carried out in accordance with the decision flowchart included in Appendix A1 and as outlined below.

#### **Noise and Vibration Monitoring**

Noise monitoring will be undertaken at the commencement of each new work activity and periodically throughout the construction period to verify the predicted noise levels. Exceedance of predicted levels will be managed in accordance with the CEMP. Noise and/or vibration monitoring may also be carried out in response to a complaint.

Continuous vibration monitoring with alarms (ie audible and visible / SMS) will be undertaken at the nearest sensitive receivers (including heritage listed properties) whenever vibration generating activities need to take place inside the safe-working distances.

Attended monitoring of construction noise levels will be undertaken as follows:

- Where a change in methodology, plant or equipment is anticipated to result in an increase in construction noise impact which is greater than that predicted in the CNVIS
- Where appropriate in response to a noise related complaint(s) (determined on a case-by-case basis)
- Noise and Vibration monitoring to be undertaken as required by the CNVIS

Observations will be recorded by the person carrying out the monitoring during the monitoring event. Monitoring will generally be undertaken in publicly accessible locations, unless private access is granted by the owner/resident, and will consider the safety of the personnel undertaking the noise monitoring.

All environmental noise monitoring will be taken with the following meter settings:

Time Constant: Fast (i.e. 125 milliseconds)

- Frequency Weightings: A-weighting
- Sample period: 15 minutes.

The recorded levels will be compared against the levels identified in the CNVIS.

### **Calibration, QA and competency**

Australian Standard AS 1055 Acoustics - Description and measurement of environmental noise provides a good practice guide for noise measurements.

All monitoring will be undertaken by competent personnel, appropriately trained and experienced in undertaking noise measurements.

Noise monitoring equipment will be Type 1 instruments as specified in AS/NZS IEC 61672.1:2019 Electroacoustics: sound level meters specifications, calibrated in accordance with manufacturer specifications and / or relevant Australian Standards. The calibration of the monitoring equipment will be checked in the field before the noise measurement period. Records of monitoring equipment calibration (including current calibration certificates) will be maintained by the contractor.

## **7.4 Non-Aboriginal Heritage**

In the event unidentified heritage finds are uncovered during works, works in proximity to the find will cease and the unidentified finds procedure contained in Appendix A5 will be implemented.

## **7.5 Aboriginal Heritage**

In the event unidentified heritage finds are uncovered during works, works in proximity to the find will cease and the unidentified finds procedure contained in Appendix A5 will be implemented.

## **7.6 Biodiversity**

There are no trees proposed for removal because of the project. Prior to the commencement of works a project arborist will be appointed to provide on-going advice for the works within identified sensitive areas and will include as a minimum:

- Inspect the set up of tree protection prior to the commencement of work.
- Ensure tree protection measures meet the requirements of AS4970(2007) *Protection of Trees on Development Sites*.  
Provide advice on methods to minimise the extent of encroachment within the protection zones of trees.
- Provide advice on long term tree health such as watering regimes, fertiliser application and mulching.
- Provide advice on non-destructive digging techniques within tree protection zones.
- Provide advice on stop works within a tree protection zone and make recommendations on refinements to the work methodology.
- Review adequacy of site training and induction material regarding tree protection zones.

- Assess and report on any significant roots that require removal prior to their removal.
- Undertake regular monitoring and site inspections during construction to monitor tree health and recommend additional tree care if there are signs of stress.

Tree protection zones and ground protection measures will be implemented within the newly constructed Rozelle Parklands as detailed in Table 7-2 and in accordance with, *The Australian Standard, Protection of Trees on Development Sites (AS4970 2009)* which defines a Tree Protection Zone as follows:

- The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.

The protection of trees on the site will be carried out in consultation with an arborist with a minimum Australian Qualifications Framework (AQF) Level 5 qualification in arboriculture. Tree removal, pruning and maintenance work will be carried out by an arborist with a minimum AQF Level 3 qualification in accordance with AS 4373-2007 Pruning of Amenity Trees and the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998) and advice provided by an arborist with a minimum AQF Level 5 qualification in arboriculture (or equivalent).

Recently planted trees that are impacted by Stage 4 works will be relocated within the parklands by an arborist/landscaper.

## **7.7 Soil and Water**

Soil and water aspects will be managed via the measures as detailed in Table 7-2.

Key soil and water control measures will include:

- Controlling erosion before controlling sediment – sediment is only generated when erosion occurs
- Minimising the area of soil disturbance and therefore the area exposed to erosion
- Diversion of ‘clean’ run-off from offsite around or through the worksite without it contacting exposed soils or mixing with ‘dirty’ onsite water
- Progressive rehabilitation and/or stabilisation of completed areas to minimise erosion hazard
- Inspection and maintenance of all erosion and sediment controls in sound working order.
- Completing work and stabilising disturbed areas quickly and progressively. Temporary stabilisation measures would be used if permanent stabilisation is delayed by construction activities or by unsuitable site conditions.

### **7.7.1 Maintenance of erosion and sediment controls**

Erosion and sediment control measures would be maintained in a functioning condition until individual areas have been revegetated or the areas are stabilised with the finished facility enhancements.

Erosion and sediment control measures would be inspected daily and recorded weekly, including any required actions detailed on the Environment Inspection Checklist. This may include marked up photos of the relevant site controls and areas to ensure they are installed or repaired in the recommended manner and locations.

### **7.7.2 ESCP Preparation**

An initial site progressive ESCP will be prepared which shows the erosion and sediment controls to be established for work sites and the ancillary site. This will be submitted to TfNSW for approval prior



to the commencement of work activities.

The ESCP will be progressively and regularly updated throughout Stage 4 works. These amendments and progressive revisions of the ESCP will be undertaken as the site conditions change as works progress onsite. The Progressive ESCP will identify risk areas/ activities and be prepared prior to new areas/ activities commencing. The ESCP will be updated to address any identified deficiencies in the adequacy of the existing control measures and review the appropriateness of the design parameters used for BLUE BOOK calculations.

## **7.8 Contamination**

Fill material, including soil containing heavy metals, hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) and asbestos, was previously identified at Rozelle Parklands during construction of Stage 2 of the project. This fill has been retained within Rozelle Parklands beneath soil or hardstand capping layers. The areas of retained soil contamination are shown in Appendix A of the Long Term EMP (LTEMP).

Hydrocarbon-impacted (including apparent free-phase product) perched groundwater has been identified within a narrow band of alluvium sand on the GC02 sub-site. The alluvium sand is underlain by alluvium clay and is situated at a depth of between approximately 2.5 and 3.5 metres below ground level. GC02 sub-site underlies the footprint of the Facilities Building and the full extent of the GC02 sub-site is shown in Appendix A of the Long Term EMP (LTEMP).

Known contamination will need to be managed in accordance with the approved LTEMP. All excavation works must be carried out in accordance with the approved LTEMP. Mitigation measures relating to works that are likely breach cap/marker layer or encounter hydrocarbon impacted-groundwater in the GC02 sub-site (such a piling for the Facilities Building 2) are outlined in the LTEMP and have also been included in the environmental safeguards provided in Table 7.1

Any unexpected contaminated material, including asbestos, that is encountered during Stage 4 works, will be managed and disposed of in accordance with the Unexpected Contamination and Asbestos Procedure and in accordance with the measures described in Section 7.11.

## **7.9 Lighting**

As no night works are anticipated for Stage 4 works, the construction sites will not be lit and therefore no light spillage to residential properties (none of which are located in close proximity to the construction sites) is anticipated. Operational lighting is dealt with in the Urban Design and Landscape Plan (Rev N).

## **7.10 Waste**

Construction waste generated by the Work will be managed in accordance with the management measures outlined in Table 7-2.

## **7.11 Sustainability**

The Project is currently investigating opportunities to use low emission construction materials and locally produced materials where feasible and cost effective. These opportunities will continue to be investigated and reported on in compliance tracking

Opportunities to optimise resource efficiency and waste management and the use of locally sourced materials and prefabricated assets will continue to be investigated and this will be reported on in compliance reports. These works will be consistent with the sustainability outcomes outlined in the approved UDLP.

No opportunities to reduce operational greenhouse gas emissions were considered feasible during detailed design due to the small scale of the works. However, investigations into reduction of operational greenhouse gas emissions will continue to be investigated during construction and implemented where feasible and cost effective. These will be reported on in compliance reports.

## 7.12 Environmental Safeguards

Environmental management and mitigation measures relevant to the project are outlined in Table 7-2. These should be implemented to minimise impacts and ensure all commitments and requirements of the project approval are met. These specific management and mitigation measures have been developed to address the requirements of the CoA, REMMs and SERs.

Table 7-2 Environmental Safeguards

| ID             | Measure/Requirement  | Reference     | Evidence                                 |
|----------------|--|---------------|--|
| <b>General</b> |  |               |  |
| MMG01          | Training will be provided to relevant project personnel, including relevant subcontractors on all project aspects applicable to the Stage 3 works, including inductions, toolboxes or targeted training.   | Best Practice | Induction records<br>Toolbox talk record |
| MMG02          | <p>All employees, contractors and subcontractors will receive a project induction prior to commencing work on site. The environmental component, covered in either the induction or toolboxes, will include (as a minimum):</p> <ul style="list-style-type: none"> <li>• Existence and requirements of this EMP</li> <li>• Sensitive areas on the Project</li> <li>• Heritage items on the project and management requirements for individuals</li> <li>• Relevant legislation and guidelines</li> <li>• Nominated construction hours, restrictions and general requirements for OOHW</li> </ul> | Best Practice | Induction records                        |

| ID  | Measure/Requirement  | Reference                     | Evidence                 |
|---|--|-------------------------------|--------------------------|
|   | <ul style="list-style-type: none"> <li>• Management of discovery of previously unidentified contaminated material</li> <li>• Complaints reporting and recording</li> </ul>   |                               |                          |
| MMG03   | The appropriate fire-fighting equipment will be provided onsite and in vehicles to ensure that safety of public and property including Fire-extinguishers and Fire Blankets  | Best practice                 | Inspection Records       |
| <b>Establishment and operation of ancillary site(s)</b> |  |                               |                          |
| AFMM01  | Undertake ancillary establishment activity works during standard construction hours  | CoA E68                       | Weekly Inspection Record |
| AFMM02  | <p>The extent of the ancillary site to be delineated by boundary screening, security fencing and signage that must include the CSSI name and application number, as well as the Project phone number.</p> <p>The boundary screening must also minimise visual, noise and air quality impacts on adjacent sensitive receivers (which also includes the park users).</p> | CoA C25<br>CoA C26<br>CoA A45 | Weekly Inspection Record |
| AFMM03  | All fuels, chemicals and liquids are to be stored away from the existing and newly constructed stormwater drainage systems and would be stored in an impervious bunded area  | REMM HR2<br>REMM HR3          | Weekly Inspection Record |
| AFMM04  | Safe pedestrian and cyclist access will be maintained around the ancillary site during construction and operation of the ancillary site(s). In circumstances   | CoA E57<br>REMM TT12          | Weekly Inspection Record |

| ID                        | Measure/Requirement  | Reference                        | Evidence   |
|---------------------------|--|----------------------------------|--|
|                           | where pedestrian and cyclist access is restricted due to construction activities, traffic management will be implemented to ensure the safe passage of pedestrians and cyclists during construction hours.   |                                  |  |
| <b>Traffic and access</b> |  |                                  |  |
| MMTT01                    | Maintain access to all utilities and properties during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.  | CoA E46<br>REMM TT14<br>REMM PL2 | Weekly Inspection Record   |
| MMTT03                    | Construction vehicles (including staff vehicles) will be managed to: <ul style="list-style-type: none"> <li>• minimise parking on public roads</li> <li>• minimise idling and queuing on public roads</li> </ul>   | CoA E52                          | Weekly Inspection Record<br>Traffic Management Plan<br>Construction Parking and Access Strategy (CPAS) |
| MMTT05                    | Safe pedestrian and cyclist access will be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted due to construction activities, traffic management will be implemented to ensure the safe passage of pedestrians and cyclists during construction hours. | CoA E57<br>REMM TT12             | Weekly Inspection Record<br>Traffic Management Plan  |
| MMTT06                    | Minimise periods of time during which roads, footpaths and shared user paths would be closed.  | Best Practice                    | Weekly Inspection Record<br>Traffic Management Plan  |

| ID                            | Measure/Requirement  | Reference     | Evidence                 |
|-------------------------------|--|---------------|--------------------------|
| MMTT07                        | Traffic controllers will actively manage pedestrian and cyclist movements when the shared user path is temporarily closed or restricted                                    | Best Practice | Traffic Management Plan  |
| MMTT08                        | Notify affected communities about temporary traffic and access disruptions   | Best Practice | Project Notification     |
| MMTT09                        | A road dilapidation report will be completed prior to construction   | CoA E62       | Road Dilapidation Report |
| <b>Air Quality Management</b> |  |               |                          |
| MMAQ01                        | Construction activities with the potential to generate dust will be modified or ceased during unfavourable weather conditions to reduce the potential for dust generation. | REMM AQ4      | Visual inspection        |
| MMAQ02                        | Ensure that all loads with the potential to produce dust or gaseous emissions are covered when materials are being transported to and from site.                           | REMM AQ15     | Visual inspection        |

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| MMAQ03 | Measures to reduce potential dust generation, such as limiting disturbed areas, stabilisation, appropriate storage of materials, the use of water carts, sprinklers, dust screens and surface treatments, will be implemented within project sites as required | REMM AQ5<br>REMM AQ7<br>REMM AQ8<br>REMM AQ13<br>REMM AQ19<br>REMM AQ20<br>REMM AQ23 | Weekly Inspection Record |
|--------|--|--|--------------------------|

| ID     | Measure/Requirement   | Reference     | Evidence                 |
|--------|---|---------------|--------------------------|
| MMAQ04 | Roads and impervious surfaces will be swept daily to minimise sediment deposit and the potential for dust.  | Best Practice | Weekly Inspection Record |
| MMAQ05 | All construction vehicles and plant will be inspected regularly and maintained to ensure that they comply with relevant emission standards.   | REMM AQ9      | Inspection Record        |
| MMAQ06 | Engine idling will be minimised when plant is stationary, and plant will be switched off when not in use to reduce emissions.   | REMM AQ10     | Inspection Record        |
| MMAQ07 | Dust and air quality complaints will be managed in accordance with the overarching complaints handling process for the project. Appropriate corrective actions will be taken to reduce emissions in a timely manner.  | Best Practice | Weekly Inspection Record |
| MMAQ08 | Site inspections will be carried out to monitor dust and emissions compliance with implemented measures. The inspections, required actions and ongoing issues will be recorded and actioned appropriately within agreed timeframes by relevant project personnel.                       | Best Practice | Weekly Inspection Record |
| MMAQ09 | At the commencement of establishment of project ancillary facilities, controls such as wheel washing systems and rumble grids will be installed at all site exits to prevent deposition of loose material on sealed surfaces outside project sites to reduce potential dust generation. | REMM AQ25     | Weekly Inspection Record |



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| MMAQ10                     | Storage of materials that have the potential to result in dust generation will be minimised within the project sites at all times.  | REMM AQ8            | Weekly Inspection Record   |
| MMAQ11                     | The use of mains electricity is available from distribution boards and power supply points already constructed as part of the Parklands. These will be favoured over diesel or petrol-powered generators where practicable to reduce site emissions | REMM AQ11           | G1 Specification   |
| MMAQ12                     | The potential for dust generation will be considered during the handling of loose materials. Equipment will be selected and handling protocols developed to minimise the potential for dust generation  | REMM AQ14           | Weekly Inspection Record   |
| <b>Noise and vibration</b> |   |                     |  |
| MMNV01                     | All works to be undertaken in the approved construction hours specified in Section 7.3 of this CEMP   | COA E68 to E77      | Induction<br>Toolbox talks<br><br>Weekly<br>inspection<br>record |
| MMNV02                     | Prior to works commencing, a CNVIS will be prepared.  | Appendix A6 of CEMP | CNVIS  |

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| MMNV03 | Training will be provided to project personnel, including relevant sub-contractors, on noise and vibration requirements and the location of sensitive receivers during inductions and toolbox talks.   | Appendix A6 of CEMP | Induction<br>Toolbox talks |
| MMNV04 | Noise generating works in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution. | CoA E80             | Weekly Inspection Record   |
| MMNV05 | Delivery vehicles will be fitted with straps rather than chains for unloading, wherever possible.  | CNVIS               | Weekly Inspection Record   |
| MMNV06 | Truck drivers will avoid compression braking in close proximity to residential receivers   | CNVIS               | Weekly Inspection Record   |
| MMNV07 | Prior to arriving on site, drivers will be advised of designated vehicle routes to construction sites within the Parklands, parking locations, acceptable delivery hours specific to the site and other relevant practices (i.e. no extended periods of engine idling)   | CNVIS               | Induction<br>Toolbox talks |
| MMNV08 | Where reasonable and feasible, noise and vibration impacts will be reduced through the selection of less noise intensive equipment and methods.  | CNVIS               | Weekly Inspection Record   |
| MMNV09 | Shut down plant/machinery, including lighting towers, when not in operation.   | CNVIS               | Weekly Inspection Record   |

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| MMNV10 | Avoid dropping materials from a height and dampen or line metal trays, as necessary.   | CNVIS   | Weekly Inspection Record |
| MMNV11 | Ensure equipment is operated in the correct manner   | CNVIS   | Weekly Inspection Record |
| MMNV12 | Equipment with non-tonal/broadband reversing alarms will be used wherever practicable. Non-tonal alarms on plant and equipment will be used for out of hours works, where reasonable and feasible. Audible alarms to be set to the minimum volume necessary to adequately perform their function.  | CNVIS   | Weekly Inspection Record |
| MMNV13 | Use existing obstacles/structures to shield sensitive receivers from noise such as noise walls; and consideration of site topography when situating plant.   | CNVIS   | Weekly Inspection Record |
| MMNV14 | <p>Unless otherwise permitted in accordance with CoA E73, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver will only be carried out:</p> <ul style="list-style-type: none"> <li>• Between 8:00 am and 6:00 pm Monday to Friday</li> <li>• Between 8:00 am and 1:00 pm Saturday</li> <li>• If continuously, then not exceeding three (3) hours with a minimum respite from those activities and works of not less than one (1) hour between each block.</li> </ul> <p>Where reasonable and feasible works will be carried out during standard construction hours when near residential receivers.</p> | CoA E72 | Weekly Inspection Record |

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| MMNV15 | Portable noise barriers will be used around particularly noisy equipment such as concrete saws and drilling, where feasible and reasonable. Portable noise barriers should be used especially if construction work is required to occur outside of daytime hours and in close proximity to residential receivers. | CNVIS | Weekly Inspection Record |
| MMNV16 | Where predicted noise levels are above the NMLs, implement additional mitigation measures as outlined in Section 7.2 and Appendix D of the CNVIS.   | CNVIS | Weekly Inspection Record |
| MMNV17 | If construction works are required to be carried out outside of daytime hours, noise intensive equipment including concrete saw and drilling/auger works would be restricted to occur before mid-night  | CNVIS | Weekly Inspection Record |
| MMNV18 | Where there are complaints regarding noise, review and implement additional control measures, where feasible and reasonable.  | CNVIS | Weekly Inspection Record |
| MMNV19 | Noise monitoring will be undertaken at the commencement of each new work activity and periodically throughout the construction period to verify the predicted noise levels. Exceedance of predicted levels will be managed in accordance with the CEMP.   | CNVIS | Weekly Inspection Record |

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| MMNV20 | Attended noise monitoring will be undertaken upon receipt of a complaint, unless monitoring results at or near the receiver for the activity have been collected recently and are within the predicted noise levels. Measured noise levels will be compared to predicted noise levels to confirm that all appropriate mitigation measures have been implemented in accordance with the Construction Noise and Vibration Guideline (Transport for NSW, 2022)  | CNVIS        | Weekly Inspection Record<br>Monitoring Record   |
| MMNV21 | Continuous vibration monitoring with alarms (ie audible and visible / SMS) will be undertaken at the nearest sensitive receivers (including heritage listed properties) whenever vibration generating activities need to take place inside the safe-working distances. In the event that the vibration testing and monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. | CNVIS        | Weekly Inspection Record<br>Monitoring Record   |
| MMNV22 | Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owner 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.                        | E83<br>CNVIS | Monitoring Record   |
| MMNV33 | Regular communication to be carried out with other approved CSSI and SSI projects under construction in close proximity to ensure that measures are in place to manage cumulative noise and vibration impacts.   | E67          | Bays Project Traffic and Cumulative Impacts Coordination Meeting (with SMW, WHT, Ports Authority and Contractors) |

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| MMNV34                         | 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.   | E91  | Site Safety Surveillance<br>Inspection Records |
| MMNV35                         | To manage potential risk with property damage. TfNSW is required to carry out vibration monitoring and has implemented buffer zones with various works. It should be noted that this project is not carrying out any tunnelling and dewatering as part of the project. In the event that damage occurs to a property as a result of the construction of the project, the damage will be appropriately rectified. Any disputes between a property or infrastructure owners regarding damage and rectification will be referred to the Independent Property Impact Assessment Panel for resolution as these works fall under the IPIAP terms of reference. | REMM PL13  | Monitoring Records<br>IPIAP terms of reference |
| MMNV36                         | Any damage resulting from the Project will be rectified by the Proponent at its expense and to the reasonable requirements of the owner within 3 months of completion of the post-dilapidation surveys or as agreed with the affected owner.   | CoA E108   | Monitoring Records<br>Condition Survey Reports |
| <b>Aboriginal heritage</b>     |  |  |  |
| MMAH01                         | Stop work immediately and restrict access if potential Aboriginal cultural heritage is discovered. Notify the Supervisor and TfNSW.  | COA E157<br>REMM AH1<br>TfNSW Unexpected finds procedure | Unexpected Find<br>Procedure                   |
| <b>Non-Aboriginal heritage</b> |  |  |  |

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|-----------------------|--|-----------------------|------------------------------------|
| MMNAH01               | Any items of potential heritage conservation significance or human remains discovered during construction will be managed in accordance with an Unexpected Heritage Finds and Humans Remains Procedure developed for the project in accordance with relevant guidance provided by the Heritage Council of NSW, the Heritage NSW and the TfNSW Unexpected finds procedure and will be implemented for the duration of construction. | REMM NAH08            | Unexpected Find Procedure          |
| MMNAH02               | Any excavations, intrusive works or other operations that have the potential to impact areas of known heritage, cultural or archaeological items must ensure works are performed in accordance with the heritage assessment and regulatory requirements (which may include a dilapidation survey and/or supervision of works by a competent person and/or vibration monitoring)  | REMM NAH06            | Heritage assessment                |
| <b>Soil and water</b> |  |                       |                                    |
| MMSW01                | Weather conditions and forecasts (including rainfall prediction maps) will be monitored daily and relevant information provided to the site Superintendent/ Foremen to allow for adequate planning for significant rain events.  | Best Practice         | Weather Records                    |
| MMSW02                | Progressive Erosion and Sediment Control Plans will be developed for Stage 4 works. Erosion and sediment control measures will be implemented at all work sites will be installed: <ul style="list-style-type: none"> <li>• Prior to soil disturbance occurring</li> <li>• Prior to the commencement of any works</li> </ul>   | CoA E180<br>REMM SW03 | Erosion and sediment control plans |

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|--------|---|---------------|---|
|        | <ul style="list-style-type: none"> <li>• To minimise sediment moving off-site</li> <li>• To minimise sediment laden water entering any watercourse, drainage lines, or drain inlets</li> </ul> <p>To minimise the amount of material transported from site to surrounding pavement surfaces</p> |               |   |
| MMSW03 | Sediment fencing or suitable alternative sediment controls will be provided downslope of any disturbed areas.   | Best Practice | Erosion and sediment control plans<br>Weekly Inspection records |
| MMSW04 | Sediment controls will be installed around stormwater inlet pits where appropriate and where they will not cause or exacerbate flooding.  | Best Practice | Weekly Inspection records                                       |
| MMSW05 | There will be no release of sediment-laden water into drainage lines and/or waterways.  | Best Practice | Weekly Inspection records                                       |
| MMSW06 | The extent of ground disturbance and exposed soil will be minimised to the greatest extent practicable to minimise the potential for erosion.   | REMM SW05     | Erosion and sediment control plans<br>Site Inspections          |
| MMSW07 | Disturbed ground and exposed soils will be temporarily stabilised prior to extended periods of site inactivity to minimise the potential for erosion.   | REMM SW06     | Erosion and sediment control plans                              |
| MMSW08 | Disturbed ground and exposed soils will be permanently stabilised and proposed landscaped areas will be suitably profiled and vegetated as soon as possible following disturbance to minimise the potential erosion.  | REMM SW07     | Erosion and sediment control plans                              |



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| MMSW09 | Where drainage systems are to be upgraded or replaced during the project, existing systems will be left in place and remain operational during the process wherever possible  | REMM FD12 | Erosion and sediment control plans<br>Site Inspections |
| MMSW10 | Runoff generated from the project construction and operational facilities and discharges from water treatment facilities will be managed to mitigate risk of overloading the receiving drainage system  | REMM FD13 | Erosion and sediment control plans<br>Site Inspections |
| MMSW11 | Entry points to the stormwater used by or immediately downgradient from the project sites will be inspected regularly for blockages and cleaned as required to maintain performance.  | REMM FD14 | Site Inspections<br>Weekly Inspection Records          |
| MMSW12 | Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be undertaken in accordance with relevant guidelines and designed by a suitably qualified and experienced person. | E188      | Erosion and sediment control plans<br>Site Inspections |

**Contamination**

|       |   |   |                             |
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| MMC01 | Inform all personnel who may undertake subsurface work that hydrocarbons, PAHs, heavy metals and asbestos may be present within soil across the site, and induct all personnel in the identification and management of previously identified contaminated sites, the locations of capped contaminated material, the extent of the geotextile and plastic mesh marker layer. | LTEMP   | Induction<br>Toolbox record |
| MMC02 | Prepare a Safe Work Method Statement in accordance with the contamination control measures outlined in Table 5.1 of the LTEMP   | LTEMP   | SWMS                        |
| MMC03 | Vehicles and machinery will be properly maintained to minimise the risk of fuel/oil leaks.  | REMM SW01<br>REMM CM07<br>Construction Soil and Water Management Plan | Best practice               |
| MMC04 | An Emergency Spill Plan will be developed that will include measures to avoid spillages of fuels, chemicals or fluids, and measures to be implemented in the event of a spill.  | REMM SW01<br>Construction Soil and Water Management Plan              | Induction                   |
| MMC05 | If an incident (e.g. spill) occurs, the Environmental Incident Procedure (Transport for NSW, 2023) is to be followed and the Environment Manager notified immediately   | REMM SW01<br>Construction Soil and Water Management Plan              | Incident Report             |
| MMC06 | The storage of dangerous goods and hazardous materials will occur in accordance with suppliers' instructions and relevant Australian Standards and legislation including the: <ul style="list-style-type: none"> <li>• Work Health and Safety Act 2011 (NSW)</li> <li>• Storage and Handling of Dangerous Goods</li> </ul>  | REMM SW01<br>Construction Soil and Water Management Plan              | Weekly Inspection records   |

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|       | <p>Code of Practice (WorkCover NSW 2005)</p> <ul style="list-style-type: none"> <li>Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (NSW EPA 1997).</li> </ul> <p>Storage methods may include bulk storage tanks, chemical storage cabinets/containers or impervious bunds.</p>   |  |   |
| MMC07 | The discovery of previously unidentified contaminated material will be managed in accordance with an Unexpected Contamination and Asbestos Procedure  | CoA E184<br>REMM CM06<br>Unexpected Contamination and Asbestos Procedure | Unexpected contamination and asbestos procedure |
| MMC08 | For major civil/utility works likely to breach capping/marker layer, the progress and status on completion of the works will be inspected by the Transport for NSW Project Engineer. The inspections will be carried out on a daily basis during works and at completion of works.  | LTEMP  | Daily inspection diary                          |
| MMC09 | Any contaminated material that is disturbed by Stage 4 works must be disposed off-site under appropriate waste classification or be placed/maintained beneath the marker layer and/or hardstand cap. The marker layer and/or cap shall be subsequently reinstated.  | LTEMP  | Waste Tracking Register                         |
| MMC10 | Upon completion of work that breaches the cap, validation of the containment/recapping shall be conducted by a suitably qualified environmental specialist. Records demonstrating that the re-capping has been adequately installed to the correct thickness and integrity shall be maintained these records should include details of material validation and location of the re-capping | LTEMP  | Specialist's memo report                        |

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| MMC11 | During any subsurface works within the mapped extent of GC02 sub-site, monitoring of any open excavations using a photo-ionisation detector (PID) to assess the presence of volatile compounds in ambient air, must be undertaken. PID monitoring shall be recorded by site personnel and submitted for review on a daily basis. If a PID concentration of 15 ppm (or higher) in ambient outdoor air is recorded, controls must be modified or an occupational hygienist must be engaged to assess risk level to workers.   | LTEMP | Monitoring results                                  |
| MMC12 | Where any level of odours are present, half-face respirators fitted with an A1P2 and/or E1 cartridge that filters both particulates and organics should be used by construction personnel.  | LTEMP | SWMS  |
| MMC13 | <p>The exposure of excavated surfaces must be minimised, to reduce the odours and exposure to chemical vapours, by:</p> <ul style="list-style-type: none"> <li>• Undertaking excavation activities in favourable weather conditions (i.e. low wind and heat), where practicable</li> <li>• Covering exposed surfaces overnight or during periods of low excavation act</li> <li>• Minimising exposed surface area of stockpiles and excavation cuts</li> <li>• Undertaking periodic vapour monitoring during excavation works</li> <li>• Applying odour suppressants such as “Biosolve” to reduce odours</li> <li>• Disposing of any odorous material to a</li> </ul> | LTEMP | Weekly inspection record<br>Waste Tracking Register |

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|       | licenced landfill facility as soon as practicable   |                        |                          |
| MMC14 | <p>The duration of exposure of excavated surfaces must be minimised, to reduce the potential of any surface water entering work areas.</p> <p>If dewatering of shallow excavations is required due to rainfall or groundwater ingress, these works must be carried out by a licenced waste management contractor and pumped water should be collected in appropriate drums or tankers for off-site disposal. The Waste Tracking Register (specified in WMM09) must document the disposal of this water at an appropriately licenced facility.</p> | LTEMP                  | Waste Tracking Register  |
| MMC15 | Groundwater is not to be extracted for any purposes other than for monitoring (if required). The Waste Tracking Register (specified in WMM09) must document the disposal of groundwater at an appropriately licenced facility.  | LTEMP                  | Waste Tracking Register  |
| MMC16 | Material Safety Data Sheets for dangerous goods and hazardous substances will be stored on site prior to their arrival.   | REMM OpHR9<br>REMM HR4 | Weekly Inspection Record |
| MMC17 | Management measures to reduce the potential for spills, reduce potential spill volumes and prevent any contamination will be developed and implemented for activities such as vehicle refuelling, servicing, maintenance or washdown, where there is a potential for spills and contamination.  | REMM OpHR8<br>REMM HR3 | Weekly Inspection Record |

|                         |   |  |                          |
|-------------------------|---|--|--------------------------|
| MMC18                   | Secure, bunded areas will be provided around storage areas for oils, fuels and other hazardous liquids. Impervious bunds will be of sufficient capacity to contain at least 110 per cent of the volume of the largest stored container.   | REMM OpHR7<br>REMM HR2                         | Weekly Inspection Record |
| MMC19                   | Transport of dangerous goods and hazardous substances will be conducted in accordance with relevant legislation and codes, including the Dangerous Goods (Road and Rail Transport) Regulation 2014 (NSW) and the Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission 2008).                            | REMM HR5                                       | Waste Tracking Register  |
| <b>Biodiversity</b>     |   |  |                          |
| MMB01                   | An unexpected threatened species finds procedure, developed in accordance with the requirements of Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011), will be implemented to ensure that if flora or fauna are identified within an area to be cleared, the procedure would minimise the potential for impacts. | REMM B1<br>Unexpected threatened species finds | Toolbox record           |
| MMB02                   | Any newly planted shrubs or groundcovers within the construction site footprints for the Woks will be relocated elsewhere within the parklands  | REMM B7  | Weekly Inspection record |
| MMB03                   | Provide tree protection where required at the direction of the arborist, for any newly planted trees located in proximity to Stage 4 works  | REMM B7  | Weekly Inspection record |
| <b>Waste Management</b> |   |  |                          |

|       |   |   |                                 |
|-------|---|---|---------------------------------|
| WMM01 | <p>Waste will be managed in accordance with the Waste Avoidance and Resource Recovery Act 2001 to ensure that resource management options are considered against a hierarchy of:</p> <ul style="list-style-type: none"> <li>• Avoidance of unnecessary resource consumption</li> <li>• Resource recovery (including reuse, recycling, reprocessing, and energy recovery), and</li> <li>• Disposal.</li> </ul> <p>Resource recovery will be applied to the management of construction waste and will include:</p> <ul style="list-style-type: none"> <li>• Recovery of resources for reuse – reusable materials generated by the project will be segregated for reuse on site, or off site where possible, including the reuse of the major waste streams (VENM)</li> </ul> <p>Recovery of resources for recycling – recyclable resources (such as metals, plastics and other recyclable materials) generated during construction and demolition will be segregated for recycling and sent to an appropriate recycling facility for processing where volumes offer this opportunity.</p> | <p>Best Practice<br/>REMM RW2<br/>REMM RW4<br/>REMM RW5</p> | <p>Weekly Inspection Record</p> |
| WMM02 | <p>The generation of waste will be minimise where practical (e.g. minimising packaging)</p>   | <p>Best Practice</p>  | <p>Weekly Inspection Record</p> |

|       |  |                            |  |
|-------|--|----------------------------|--|
| WMM03 | <p>The import, storage, treatment, processing, reprocessing or disposal of waste will comply with the Protection of the Environment Operations (Waste) Regulation, 2014 including:</p> <ul style="list-style-type: none"> <li>• Waste to be classified in accordance with the NSW EPA's Waste Classification Guideline</li> <li>• Retention of records and disposal docket audit purposes.</li> <li>• The import, storage, treatment, processing, reprocessing or disposal of waste</li> </ul> | Best Practice              | <p>Weekly Inspection Record</p> <p>Waste records and disposal dockets</p> <p>Waste Tracking Register</p> |
| WMM04 | <p>Worksites will be free of litter and good standards of housekeeping will be maintained throughout critical utility works. Regular inspections will be undertaken by the Site Supervisor and Environmental Manager to ensure a high standard is maintained</p>   | Best Practice              | Weekly Inspection Record   |
| WMM05 | <p>Where spoil is to be stockpiled, stockpiles will be managed and segregated to avoid cross contamination.</p> <p>Spoil stockpiles will be provided with appropriate environmental controls and managed to reduce potential impacts associated with dust generation, erosion and sedimentation.</p>   | Best Practice<br>REMM RW11 | Weekly Inspection Record   |
| WMM06 | <p>Haulage sub-contractors will be appropriately licenced to transport the classified waste type</p>   | Best Practice              | Licence verification record  |



|       |  |                           |  |
|-------|--|---------------------------|--|
| WMM07 | Avoid the production of hazardous waste, by avoiding the procurement and use of hazardous chemicals where alternatives are available and minimise the risk of spills and leaks through implementation of adequate controls   | Best Practice             | Weekly Inspection Record                                   |
| WMM08 | <p>Waste will only be exported to a site licensed by the EPA or to any other place that can lawfully accept the storage, treatment, processing, reprocessing or disposal of the classified waste type. Prior to waste being taken to a waste facility, the Environmental Manager will review and approve the proposed waste facility.</p> <p>Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the <i>Protection of the Environment Operations Act 1997</i>, if such a licence is required in relation to that waste.</p> | Best Practice<br>CoA E203 | Waste Tracking Register                                    |
| WMM09 | The discovery of previously unidentified contaminated material will be managed in accordance with an unexpected contamination and asbestos management procedure.   | REMM RW10                 | Unexpected contamination and asbestos management procedure |
| WMM10 | A waste tracking register will be developed that meets the waste tracking requirements under Part 4 of the Protection of the Environment Operations (Waste) Regulation 2014.   | Best Practice             | Waste Tracking Register                                    |

|       |   |               |                         |
|-------|---|---------------|-------------------------|
| WMM11 | Options identified for the off-site reuse of waste will comply with relevant NSW EPA resource recovery exemptions and requirements. | Best Practice | Waste Tracking Register |
|-------|---|---------------|-------------------------|

## 8. Compliance Management

The key roles and responsibilities for the Rozelle Parklands Facilities Enhancement Works are described below.

### 8.1 Roles & Responsibilities

#### 8.1.1 Environment Manager

The Environmental Manager will undertake the role of Environmental Site Representative (ESR) as required by Clause 3.3 of TfNSW Specification G36 for the following critical site activities:

- when a construction site is being established;
- when there are new activities at a site that have an environmental management aspect; and
- if there are any concerns/incidents requiring investigation.

The environmental responsibilities of the Environmental Manager include, but are not limited to, the following:

- Overall responsibility for the implementation of environmental matters for the Rozelle Parklands facilities enhancements
- Development, implementation, monitoring and updating of the CEMP in accordance with ISO14001
- Report to Project Manager and other senior managers on the performance and implementation of the CEMP
- Ensure management reviews of the CEMP are undertaken as required, documented and actions implemented
- Ensure environmental risks of the project are identified and appropriate mitigation measures implemented
- Identify where environmental measures are not meeting the targets set and where improvement can be achieved
- Ensure environmental protocols are in place and managed
- Ensure environmental compliance
- Obtain, implement and update all environmental licences, approvals and permits as required
- Liaise with the ER, AA and other government authorities as required
- Manage environmental document control, reporting, inductions and training
- Manage environmental reporting within the project team and to the TfNSW and regulatory authorities
- Preparing monthly reports outlining the project works undertaken and the achievements that have been met, as well as identifying those areas where improvements were made
- Oversee site monitoring, inspections (weekly) and audits
- Manage all subcontractors and consultants with regards to environmental matters,

including assessing their environmental capabilities and overseeing the submission of their environmental documents

- Prepare and/or distribute environment awareness notes
- Develop and facilitate induction, toolbox talks and other training programs regarding environmental requirements for all site personnel
- Determine when an incident has occurred, notify TfNSW and relevant authorities in the event of an environmental incident and manage close-out
- Stop activities where there is an actual or immediate risk of harm to the environment, or to prevent environmental non-conformities, and advise the Project Manager and Superintendent
- Assist the Communications Manager to resolve environment-related complaints.
- Follow any directions given by the ER.

### **8.1.2 Project Manager**

The environmental responsibilities of the Project Manager include (but are not limited to) the following:

- Sign off on and approve the contents of this CEMP on behalf of the Contractor
- Ensure all works comply with relevant regulatory and project requirements
- Ensure the requirements of this CEMP are fully implemented
- Plan construction works in a manner that avoids or minimises impact to environment
- Support the project environmental policy
- Liaise with TfNSW, ER and other government authorities as required
- Participate and provide guidance in the regular review of this EMP and supporting documentation
- Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this CEMP
- Ensure construction personnel manage construction works in accordance with statutory and approval requirements
- Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements
- Ensure that complaints are investigated to ensure effective resolution
- Stop work immediately if an unacceptable impact on the environment has or is likely to occur
- Ensure that environmental protection and safeguards remains an integral element of all project planning and activities
- Support the Construction Environmental Manager in achieving the project environmental objectives
- Ensure environmental management procedures and protection measures are implemented.

### **8.1.3 Superintendent / Foreman**

The environmental responsibilities of the superintendent include (but are not limited to) the following:

- Communicate with all personnel and subcontractors regarding compliance with the CEMP and site-specific environmental issues

- Ensure all site workers attend an environmental induction prior to the commencement of works
- Co-ordinate the implementation of the CEMP
- Co-ordinate the implementation and maintenance of pollution control measures
- Identify and deploy resources required for implementation of the CEMP

- Support the Construction Environmental Manager in achieving the project environmental objectives, including on ground implementation of the EWMS and ESCP
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the construction Environmental Manager or delegate
- Co-ordinate action in emergency situations and allocate required resource
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager and Environmental Manager
- Follow any directions given by the ER.

#### **8.1.4 Communication Manager**

The environmental responsibilities of the Communications Manager include, but are not limited to, the following:

- Ensure that all community consultation activities are carried out in line with the Communications Strategy (contractor prepare and TfNSW approve)
- Report any environmental issues to the Environmental Manager raised by stakeholders or members of the community (contractor reports to TfNSW)
- Communicate general project progress, performance and issues to stakeholders including the community (contractor prepares for TfNSW approval)
- Maintain the 24 hour complaints hotline (contractor and TfNSW)
- Maintain the complaint register (contractor and TfNSW).

#### **8.1.5 Site Engineers**

The environmental responsibilities of the site / project engineers include (but are not limited to) the following:

- Provide input into the preparation of environmental planning documents as required
- Ensure that instructions are issued and adequate information provided to employees that relate to environmental risks on-site
- Ensure that Stage 4 works are carried out in accordance with the requirements of the CEMP and supporting documentation, including the implementation of all environmental controls
- Identify any environmental risks
- Identify resource needs for implementation of CEMP requirements and related documents
- Ensure that complaints are investigated to ensure effective resolution
- Take action in the event of an emergency and allocate the required resources to minimise the environmental impact
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the Superintendent and Environmental Manager.
- Follow any directions given by the ER.

#### **8.1.6 Wider Team (including Subcontractors)**

The environmental responsibilities of the wider project team (including subcontractors) include (but are not limited to) the following:

- Comply with the relevant requirements of the CEMP, or other environmental management guidance as instructed by a member of the project's management

- Participate in the mandatory project/site induction program
- Report any environmental incidents to the foreman immediately or as soon as practicable if reasonable steps can be adopted to control the incident
- Undertake remedial action as required to ensure environmental controls are maintained in good working order
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager, Superintendent or Environmental Manager
- Follow any directions given by the ER.

## **8.2 Training**

All employees and contractors will undergo training relating to environmental impacts and management issues. The induction training will be site and/or activity specific addressing the relevant elements related to environmental management.

The Environment Manager or delegate will coordinate project environmental training requirements in conjunction with other training and development activities (e.g. cultural awareness training).

### **8.2.1 Environmental Induction**

All personnel (including sub-contractors) 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.

Visitors to site for purposes such as deliveries and undertaking inspections will be required to be accompanied by inducted personnel at all times.

The environmental component of the induction must cover all elements of the CEMP and require TfNSW environmental representative's review and acceptance prior to its implementation.

A record of all environment inductions will be maintained and kept on-site. The Environment Manager may authorise amendments to the induction at any time in consultation with the TfNSW environmental representative. Possible reasons for changes to the induction may be Project modifications, legislative changes or amendments to this CEMP.

An Induction Register is kept on site as part of the training register in the safety management system.

### **8.2.2 Toolbox talks, training and awareness**

Toolbox talks will be one method of raising awareness and educating personnel on issues related to all environmental aspects of Stage 4 works.

Frequent toolbox talks will be delivered to site personnel and tailored to specific environmental issues relevant to upcoming works, which may include (but are not limited to):

- Erosion and sedimentation control
- Dewatering
- Hours of work
- Emergency and spill response
- Aboriginal and non-Aboriginal heritage
- Management of newly planted vegetation and landscaped area
- Dust control
- Noise and vibration
- Housekeeping and waste
- Dealing with members of the public and working within an operational parkland setting

Toolbox talk attendance is mandatory for all site personnel and attendees of toolbox talks are required to sign an attendance form and the records maintained.

A Training Register is kept on site as part of the safety management system.

### **8.2.3 Daily Pre-start Meetings**

The pre-start meeting is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect Stage 4 works, coordination issues with other trades, hazards and other information that may be relevant to the day's work. The Foreman 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.

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 on site as part of the safety management system.

## **8.3 Communications**

### **8.3.1 Internal Communication**

Regular meetings will be scheduled with the Environmental Representative, relevant TfNSW environmental staff and the contractor to communicate ongoing environmental performance and to identify any issues to be addressed. This will include weekly site meetings with the project team to discuss upcoming activities and potential environmental risks and management requirements. Internal communications will also occur in toolbox talks, pre-start meetings and targeted awareness sessions as specified above.

### **8.3.2 External Communications**

The contractor is to report monthly on the ongoing environmental performance of the Project works to the TfNSW Environment Representative, as well as the project Environmental Representative. Communication will be in accordance with the Communications Strategy.

The Project Manager and the Superintendent are contactable at all times works are carried out. They have the authority to halt the progress of Stage 4 works if necessary. They are the key emergency response personnel during an environmental site emergency.

A community representative (Communications Officer) would also be available for all times that works are being undertaken to coordinate enquiries and complaints. Any communications, including interactions on or around the work site, with community members should be made known to the Communications Officer for recording. Questions or requests for information from the community should be referred to the Communications Officer to resolve.

### **8.3.3 Complaints management**

The Community Communications Strategy developed for the Project outlines the procedure for receiving complaints, feedback and enquiries from the community. All complaints will be managed in accordance with this Strategy.

All community inquiries and complaints related to Stage 4 Works will be referred to the 24-hour community information line (1800 660 248) or [RozParklandsWork@fordcivil.com.au](mailto:RozParklandsWork@fordcivil.com.au)

The telephone number, a postal address and email address will be 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
- Name, address, contact telephone number of complainant/enquirer (if no such details were



provided, a note to that effect) and the complainants permission to provide their personal details to other Government agencies to allow them to undertake their regulatory duties

- The nature of the complaint
- Action taken in response including follow up with the complainant/enquirer and resolution reached
- If no action taken, reasons why.
- Any monitoring undertaken as a result of the complaint.
- Confirmation from the complainant that the matter has been satisfactorily resolved

This information will be included in a Complaints Register with information to be shared between the contractor and TfNSW where relevant to Stage 4 works. The information contained within the register will be managed by TfNSW and made available to the DPHI and EPA upon request.

In accordance with CoA A22, the contractor must also provide the ER with the complaints register on a daily basis.

Attempts will be made to resolve all complaints in accordance with the community engagement strategy. An initial response to complaints will be provided within 2 hours of a complaint being received. A further detailed response, including steps taken to resolve the issue(s) that lead to the complaint, will be provided within 10 days. All complaints will be closed off in the stakeholder database. At all times the stakeholder will be kept informed of when they will receive a response.

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

Within one working day of receiving a complaint, a written report would be provided to TfNSW, this would outline the complaint and action taken to remedy the problem. A final report which would include proposed measures to prevent reoccurrence would be submitted to TfNSW within five working days. Complaints that require escalation will be managed in accordance with the escalation procedure in the Communications Strategy.

## 8.4 Emergency and Incident Reporting

In the event of an environmental incident, the TfNSW Environmental Incident Procedure (TfNSW, 2023) will be implemented.

In accordance with MCoA A40 and A41, 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. In accordance with MCoA A42, all written requirements of the Secretary or relevant public authority, which may be given at any point in time, to address the cause or impact of an incident must be complied with, within any timeframe specified by the Secretary or relevant public authority.

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:

- a) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
- b) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations).

In accordance with MCoA A43, if statutory notification is given to the EPA as required under the POEO Act in relation to the CSSI, such notification must also be provided to the Secretary within 24 hours after the notification was given to the EPA.

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 would be reported to TfNSW as outlined in the TfNSW Environmental Incident Procedure (TfNSW, 2023).

The Contractor will provide all records of the environmental incidents and regulatory action to TfNSW Project team.

## **8.5 Non-conformances**

A non-conformance is the failure to comply with the Environmental Management System (EMS), but does not include non-compliances as defined in Section 8.6

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 2.2, this CEMP has been prepared in accordance with the contractor EMS.

Non-conformances may be identified through compliance tracking, management review (refer to Section 9.3), environmental auditing (refer to Section 8.8) or incident management (refer to Section 8.4). Any member of the contractor team, the ER, the AA, ESM (or delegate), TfNSW Project Manager, TfNSW ESM (or delegate) or a representative of a public authority may raise a non-conformance or improvement opportunity.

Where non-conformances/improvement opportunities are identified, they will be communicated to the ESR (or delegate). This will then be recorded on an environmental action list that will be issued to the relevant contractor personnel for action as an NCR. Actions will be assigned an implementation priority in a collaborative way by the ESR (or delegate) based on 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 ESR (or delegate) 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.

Non-conforming activities may be stopped, if necessary, by the ESR or Project/Site Engineers following consultation with the Construction Manager or delegate. The ER and the AA may also stop works in these circumstances, in which case the non-conformance will be recorded and actioned as above. The works will not recommence until corrective/preventative actions have been closed out.

## **8.6 Non-compliances**

A non-compliance is defined as an occurrence, set of circumstances or development that is a breach of this approval but is not an incident (SSI 7485), including failure to implement the CEMP. Potential and actual non-compliances will be classified in line with Table 2 of the TfNSW Environmental Incident Procedure (TfNSW, 2023). After becoming aware of a non-compliance, the contractor will notify TfNSW immediately of becoming aware of a non-compliance and TfNSW will notify DPHI within seven days.. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

The notification must identify 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. The ER will also include non-compliances within the Environmental Representative Monthly Report.

The ER, AA, TfNSW Project Manager, TfNSW Environment Representative or a representative of a public authority may raise a non-compliance or improvement opportunity. Where non-compliances are identified, they will be communicated to the Environmental Site Representative (ESR) (or delegate) and a NCR will be raised. This will then be recorded on the project database. An environmental action list will be developed and issued to the relevant site representative personnel (refer 8.1 Roles & Responsibilities) for implementation and close out. Actions will be assigned an implementation priority in a collaborative way by the ESR (or delegate) 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 ESR (or delegate) will close out the non-compliance.

Non-complying activities may be stopped, if necessary, by the Environmental Manager or Project / Site Engineer following consultation with the Construction Manager or delegate. The ER/AA may also stop works in these circumstances. Works will not commence until a corrective / preventative action has been closed out. Procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management are also documented in the Compliance Tracking Program.

It is noted that a non-compliance is defined differently to a non-conformance (refer Section 8.5 above).

## **8.7 Monitoring and inspection**

### **8.7.1 Environmental Monitoring**

Monitoring will be undertaken to validate the impacts predicted for Stage 4 works and, to measure the effectiveness of environmental controls and implementation of this CEMP.

Noise and vibration monitoring will be implemented in accordance with the process identified in Appendix A6 of the CEMP to check compliance against the CNVIS and upon receipt of a complaint.

Monitoring of any open excavations using a photo-ionisation detector (PID) will be undertaken in accordance with the PID manufacturer's instructions.

Visual inspection of the construction sites and the ancillary site will be undertaken daily by site personnel and weekly formal environmental inspection will be undertaken and documented on a weekly inspection checklist to identify potential risk management requirements, areas of improvement and maintenance requirements.

### **8.7.2 Environmental Inspections**

Site inspections of work activities that have the potential to impact the environment will be carried out daily by the site supervisor, as well as weekly, and prior and post rainfall by the Environment Manager (or delegate) to ensure work activities comply with environmental management measures and requirements, as detailed in **Section 8**.

The Site Supervisor will record inspection compliances and non-compliances in their daily diary and inspection reports will be prepared by the Environment Manager (or delegate) and provided to the TfNSW Environment Representative when requested.

Any actions from site inspections will be closed out within the agreed timeframes.

### **Environmental Representative and TfNSW inspections**

The ER and TfNSW staff will undertake regular inspections of works sites, and in particular critical activities of the Project. Inspections by the ER and/or TfNSW Project staff would typically occur on a weekly or fortnightly basis depending on the complexity and anticipated risks associated with the stage of works. Deficiencies and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed.

| Item  | Frequency  | Standards                                  | Reporting   | Responsibility                    |
|---|--|--|---|-----------------------------------|
| Visual environmental site inspection of construction/ancillary sites  | Daily  | Daily checklist                            | Completed inspection checklist  | Site Supervisor                   |
| Environmental site inspections including traffic and parking arrangements, air quality, erosion and sediment controls, new/modified hazards and risks | Weekly   | Weekly environmental inspection checklist  | Completed inspection checklist  | Environment Manager (or Delegate) |
| Environmental Representative (ER) site inspections (DPHI, TfNSW will be invited to participate in these inspections)                                  | Fortnightly (or as agreed with the ER)   | CoA A21                                    | ER Inspection report/notes<br><br>Monthly ER Report to DPHI and TfNSW | ER                                |
| Plant/equipment inspections including maintenance and emissions   | Regularly or in accordance with manufacturer's specifications  | POEO Act                                   | Plant and vehicle inspection logs                                     | Mechanical foreman                |
| Pre and post rainfall inspections   | Prior to and following rainfall events >20mm   | Pre and post rainfall inspection checklist | Completed inspection checklist  | Environment Manager (or delegate) |
| Acoustic Advisor (AA) site inspections  | Regularly in accordance with CoA A26(e), or as requested by the Secretary or Community Complaints Mediator | CoA A26                                    | As part of the Monthly AA Report to DPHI and TfNSW                    | AA                                |

## 8.8 Auditing

Audits will be undertaken to assess the effectiveness of environmental controls, compliance with this Plan, CoA and other relevant approvals, licences and guidelines.

Audit requirements are detailed in Table 8-1.

### Audits

Internal auditing will be undertaken generally on a six-monthly basis throughout the Stage 4 works. The purpose of auditing is to verify compliance with:

- This Plan
- Approval requirements (MCoAs, REMMs, & SERs)
- Any relevant legal and other requirements (e.g. licenses, permits, regulations, TfNSW contract documentation)

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.

Table 8-1 Rozelle Parkland Facilities Enhancement audits

| No. | Audit          | Requirement   | Timing   | Responsibility    | Recipient                   |
|-----|----------------|---|--|-------------------|-----------------------------|
| 1   | Internal audit | Verify compliance with approval and legal requirements, TfNSW specifications and construction documentation | The first audit within three months of the commencement of construction. A final audit within five working days of contract completion date. | TfNSW Environment | TfNSW Project Manager       |
| 2   | ER Audits      | Verify compliance with approval and legal requirements, TfNSW specifications and construction documentation | Within 6 months of commencement.   | ER                | TfNSW Environmental Manager |

## 8.9 Reporting

Prior to, during and following completion of construction, various reports will be prepared to fulfil TfNSW's and other reporting needs, and requirements under the Project approval. Table 8.2 sets out the reporting requirements applicable to the Project, timing of the reporting, who is responsible for managing preparation of the reports and the intended recipient(s).

Table 8-2 Rozelle Parklands CEMP Environmental Reporting Requirements

|   | 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.  | Environmental Manager                  | TfNSW                          |
| 2 | ER inspection report          | Report of site environmental performance following routine inspections.   | Within seven days following the end of each month for the duration of the ER's engagement                        | Environmental Representative           | TfNSW /DPHI                    |
| 3 | Environmental risk assessment | Conducted for each construction stage, Project changes and significant issue, i.e. construction for Stage 4 works   | Prior to construction during development of CEMP and as required thereafter.                                     | Environmental Manager, Project Manager | TfNSW                          |
| 4 | Monitoring results            | Report on monitoring data recorded and potential exceedances against criteria.  | As required  | Environmental Manager                  | TfNSW                          |
| 5 | Acoustic Advisor reports      | Report of actions and decisions for which the Acoustic Advisor is responsible.  | Monthly, within seven days following the end of each month for the duration of the Acoustic Advisor's engagement | Acoustic Advisor                       | Planning Secretary, EPA, TfNSW |

|    |  |   |  |                                    |                                  |
|----|--|---|--|------------------------------------|----------------------------------|
| 6  | Incident report                              | Any incidents that occur must be notified to TfNSW  | Immediately after becoming aware   | Environmental Manager              | TfNSW                            |
| 7  | Incident Report                              | Any incidents, as defined by the SSI-7485 Approval, that occur must be notified to the Planning Secretary   | Immediately after becoming aware   | TfNSW                              | Planning Secretary               |
| 8  | Non-compliance notification                  | Any non-compliances that occur must be notified to the Planning Secretary within seven days after becoming aware of any non-compliance. The notification must identify the CSSI (SSI7485), 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 | Within seven days after becoming aware of the non-compliance                     | Environmental Manager and TfNSW    | Planning Secretary               |
| 9  | 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                                 | Environmental Manager              | Acoustic Advisor, ER, TfNSW, EPA |
| 10 | Waste Avoidance and Resource Recovery Report | Information related to waste generated and recycled   | Annual within one-month from 1 July and actual completion date                   | Environmental Manager              | TfNSW                            |
| 11 | Complaints reporting                         | Reporting of all received complaints in accordance with the Communications Strategy   | Daily to ER. Upon request to DPHI in accordance with CoA B10. To EPA as required | Communications Officer             | TfNSW DPHI                       |
| 12 | Compliance audit reports                     | Verify compliance with approval and legal requirements, TfNSW specifications and construction documentation   | Timing of audits set out in Table 8-1  | TfNSW Environmental Manager and ER | TfNSW                            |

|    |  |                                    |  |                             |                                     |
|----|--|------------------------------------|--|-----------------------------|-------------------------------------|
| 13 | Pre-Operation Compliance Report                            | In accordance with CoA A34 and A35 | One month prior to the commencement of operation                   | TfNSW Environmental Manager | DPHI                                |
| 14 | Construction Compliance Reports                            | In accordance with CoA A33         | Every six months from the date of the commencement of construction | TfNSW Environmental Manager | DPHI                                |
| 15 | Construction Parking and Access Strategy Monitoring Report | In accordance with CoA E54         | Quarterly  | Environmental Manager       | TfNSW<br>DPHI<br>Inner West Council |



## 9. Review and improvement

### 9.1 Continuous improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

### 9.2 Environmental records

The Environmental Manager 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
- Correspondence with public authorities
- Induction and training records
- Reports on environmental incidents, other environmental non-conformances, complaints and follow-up action
- Community engagement information
- Minutes of CEMP and construction environmental management system review meetings and evidence of any action taken
- EWMS
- Waste Tracking Register
- Community Complaints Register

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 Environmental Manager or delegate (in consultation with the Construction Manager), has the authority to change this Plan and any of the environmental management documentation. Any update of this Plan will require endorsement of the TfNSW Environmental Representative and depending on the change, the Environmental Representative.

A copy of the updated plan and changes will be distributed to all relevant stakeholders as follows:

### **9.3 Management review**

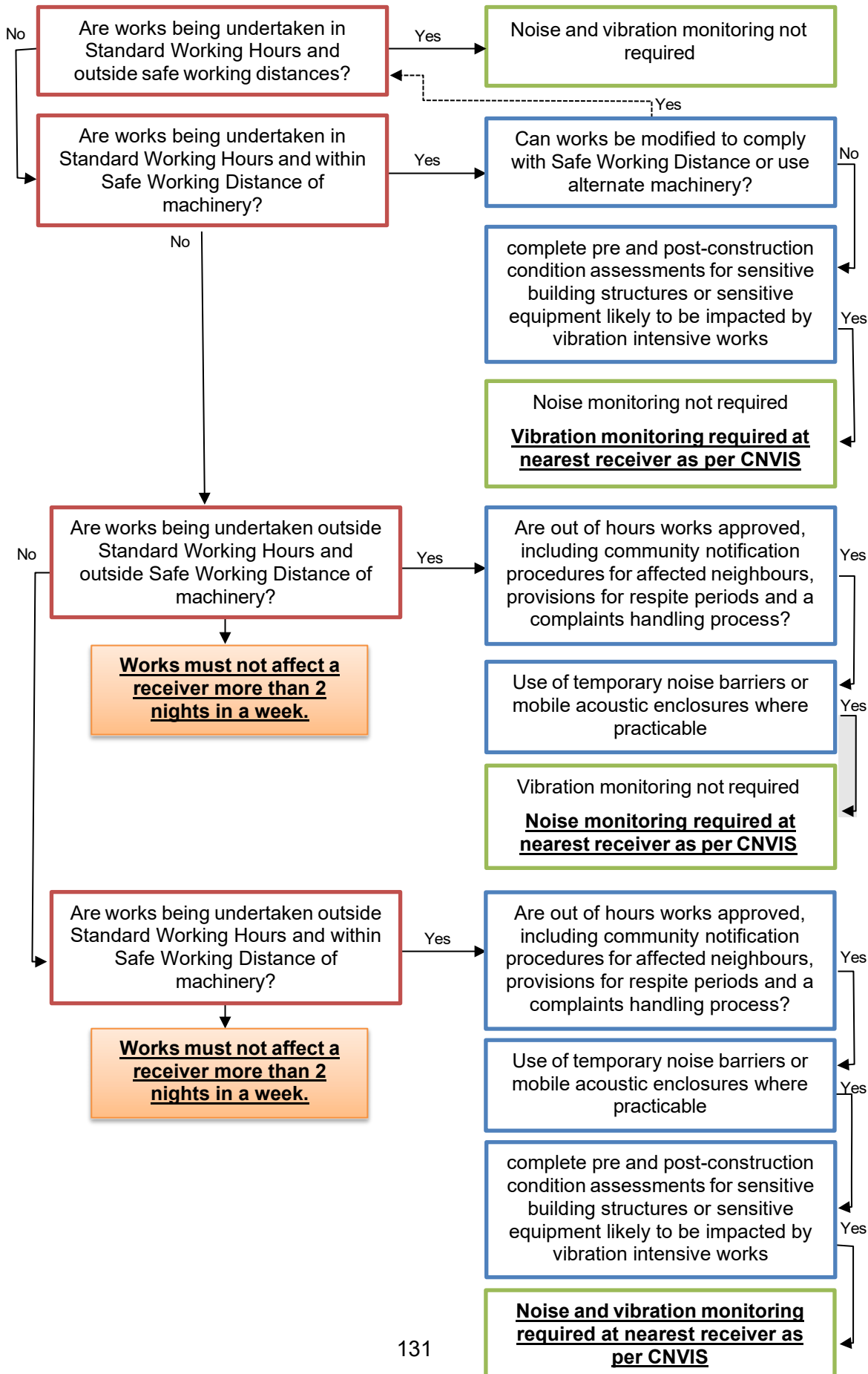
Management reviews will be undertaken as part of the continual improvement process. The reviews will be initiated by the Environmental Manager and include relevant project team members and stakeholders. The purpose of the management reviews is:

- Identification of areas of opportunity for improved environmental performance
- Analysis of the causes of nonconformities and deficiencies, including those identified in environment inspections and audits
- Verification of the effectiveness of corrective and preventative actions
- Highlighting any changes in procedures resulting from process improvement.

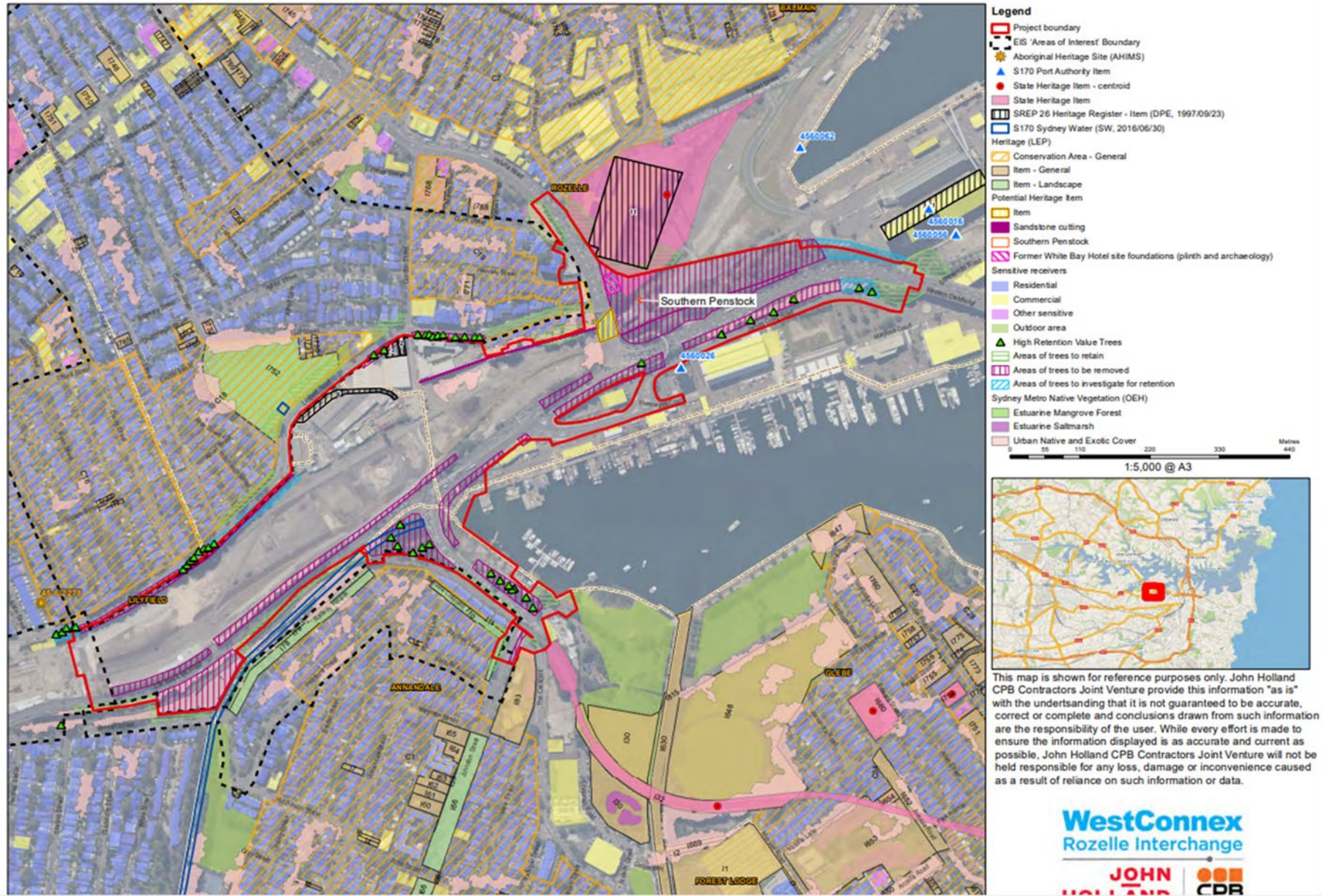
Those reviews would be undertaken as necessary with TfNSW and the Contractor both present.

The outcomes of environmental reviews may trigger amendments to this CEMP and related documentation, 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 project documents.

# Appendix A1 – Noise and Vibration Monitoring Flowchart



# Appendix A2 – Sensitive Area Plans



## **Appendix A3 – Out-of-hours Works Protocol**

*Note that any reference to John Holland CPB or JHCPB now relates to TfNSW for the purposes of this document.*

JHCPB Joint Venture

# Out-of-Hours Work Protocol

RIC-JHC-PLN-00-PL-290-003

|                       |  |
|-----------------------|--|
| <b>Project</b>        | Design and Construction of Rozelle Interchange Project |
| <b>Design Lot No.</b> | 00-PL-290  |
| <b>Document No.</b>   | RIC-JHC-PLN-00-PL-290-003                              |
| <b>Revision Date</b>  | 30 July 2019   |

## Document Approval

| Rev | Date       | Prepared by                      | Reviewed by                       | Approved by | Remarks                        |
|-----|------------|----------------------------------|-----------------------------------|-------------|--------------------------------|
| A   | 22/03/2019 | Natalie Jongbloed                | Charles Scarf                     | N/A         | Draft for RMS review           |
| B   | 10/04/2019 | Alison Kriegel                   | Jacinta Fuller                    | N/A         |                                |
| C   | 13/05/2019 | Zoe McLaughlin                   | Alison Kriegel                    | N/A         | Updated to address AA comments |
| 00  | 21/05/2019 | Alison Kriegel                   | Alison Kriegel                    | N/A         | For DPE submission             |
| 01  | 10/07/2019 | Stephan Mitchell<br>Katie Baxter | Alison Kriegel /<br>Charles Scarf | N/A         | In response to DPE Comments    |
| 02  | 30/07/2019 | Alison Kriegel                   | Charles Scarf                     |             | In response to DPE Comments    |

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## Glossary/Abbreviations

| Abbreviation/Term  | Definition  |
|--------------------|---|
| AA                 | Acoustics Advisor   |
| CNVG               | Roads and Maritime Construction Noise and Vibration Guideline   |
| CNVIS              | Construction Noise and Vibration Impact Statement               |
| CoA                | Condition of Approval   |
| DPE                | NSW Department of Planning and Environment                      |
| EPA                | NSW Environment Protection Authority                            |
| EPL                | Environment Protection Licence                                  |
| ER                 | Environmental Representative                                    |
| ICNG               | Interim Construction Noise Guidelines (DECC, 2009)              |
| JHCPB              | John Holland CPB Contractors Joint Venture                      |
| NML                | Noise management level  |
| NVMP               | Noise and Vibration Management Plan                             |
| OOHW               | Out-of-Hours Work   |
| POEO Act           | <i>Protection of the Environment Operations Act 1997</i>        |
| Project            | Design and Construction of the Rozelle Interchange Project      |
| Protocol, the      | Out-of-Hours Work Protocol (this document)                      |
| REMM               | Revised environmental management measure                        |
| Roads and Maritime | Roads and Maritime Services                                     |
|                    |   |
| Secretary, the     | The Secretary of the NSW Department of Planning and Environment |
| TfNSW              | Transport for NSW   |



## 1. Introduction

This Out-of-Hours Work Protocol (herein referred to as the Protocol) for the Rozelle Interchange Project (the Project) has been prepared in accordance with conditions of approval (CoA) E73(d) and E77. It defines the process for assessment and approval of work undertaken outside of standard construction working hours (out-of-hours work, OOHW) that is not subject to an Environment Protection Licence (EPL).

All works covered by Infrastructure Approval 7485 are intended to be performed subject to an EPL. In the event OOHW are required that will not be undertaken subject to an EPL the Secretary Environmental Representative (ER) and Acoustic Advisor (AA) will be notified as soon as possible and prior to implementing the planning and consultation requirements of this Protocol. Notification will include details of the works, including; location and duration, with further details to be included in the OOHW Permit. A copy of the current EPL premise boundary is available on the Project Website (<https://www.westconnex.com.au>).

OOHW that is not subject to an EPL has the potential to exceed relevant noise management levels (NMLs) determined in accordance with the approach outlined in the Interim Construction Noise Guidelines (DECC, 2009) (ICNG). As OOHW has the potential to impact on the amenity of adjacent sensitive receivers, the work requires assessment and approval prior to commencement.

In accordance with CoA E70, tunnelling activities, haulage of spoil, delivery of materials, works within an acoustic shed and tunnel fit out works are permitted to be carried out 24 hours a day, seven days a week, and are not subject to this Protocol.

CoA E77 requires that this Protocol is prepared in consultation with the AA and the EPA and approved by the Secretary. REMM NV5 also requires that this Protocol be developed in consultation with the EPA, Department of Planning and Environment and endorsed by the AA.

In accordance with CoA E77 and REMM NV5, this Protocol has been prepared in consultation with the AA, who endorsed this Protocol on 24 May 2019. JHCPB contacted the EPA on 8 April 2019 to advise that the NVMP (including this Protocol) would be provided for their review on 9 April 2019. EPA advised on 9 April 2019 that the NVMP would not be reviewed by the EPA, and any EPA noise management expectations would be specified in the Project's Environmental Protection License (EPL).

Consultation and approval with Department of Planning and Environment (the Secretary) has occurred through the review process of this Protocol, prior to commencement of the works.

## 2. Construction hours

The CoA defines the approved working hours for the Project. The standard construction working hours for the Project are defined in CoA E68 and E69 as being:

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

In accordance with CoA E73(d), this Protocol defines the process for the assessment and approval of work that is not subject to an EPL and needs to occur outside of the time periods stipulated above (i.e. needs to occur during an OOHW period).

This Protocol will apply to the two following OOHW periods:

- OOHW Period 1:
  - › Monday to Friday: 6pm to 10pm;
  - › Saturday: 7am to 8am and 6pm to 10pm; and
  - › Sunday and Public Holidays: 8am to 6pm;
- OOHW Period 2:
  - › Monday to Friday: 10pm to 7am;
  - › Saturday: 10pm to 8am; and
  - › Sunday and Public Holidays: 6pm to 7am.

### 2.1. Minister's Conditions of Approval

The CoA relevant to this Protocol are listed in Table 1 below. A reference is also included to indicate where the CoA is addressed in this Protocol or other Project documents.

Table 1 Minister's Conditions of Approval requirements

| CoA No. | Condition Requirements  | Document Reference  | How addressed  |
|---------|---|---|--|
| E73     | Notwithstanding Conditions E68 to E72 works may be undertaken outside the hours specified under those conditions in the following circumstances:<br>(d) works approved under an Out-of-Hours Work Protocol for works not subject to an EPL as required by Condition E77;  | Section 3 of this Protocol  | Section 3 of this Protocol addresses that any out of hour works are to be undertaken in line with this protocol. |
| E75     | Out-of-hours works that are regulated by an EPL as per Condition E73(c) or through the Out-of-Hours Work Protocol as per Condition E77 include:<br>(a) works which could result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 "Risk Management – Principles and Guidelines"; or<br>(b) where the relevant road network operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to road network operational performance; or<br>(c) where the relevant utility service operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to the operation and integrity of the utility network; or<br>(d) where the TfNSW Transport Management Centre (or other road authority) has advised the Proponent in writing that a road occupancy licence is required and will not be issued for the works or activities during the hours specified in Condition E68 and Condition E69; or<br>(e) where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required.<br>Note: Other out-of-hours works can be undertaken with the approval of an EPL, or through the project's Out-of-Hours Work Protocol for works not subject to a EPL. | Section 3 of this Protocol  | Section 3 of this Protocol outlines the type of works relevant to this out of hours works Protocol.              |
| E76     | In order to undertake out-of-hours work described in Condition E75, the Proponent must identify appropriate respite periods for the out-of-hours works in consultation with the community at each affected location. This consultation must include (but not be limited to) providing the community with:<br>(a) a schedule of likely out-of-hours work for a period no less than three (3) months;<br>(b) the potential works, location and duration;<br>(c) the noise characteristics and likely noise levels of the works; and<br>(d) likely mitigation and management measures.<br>The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour works must be provided to the AA, EPA and the Secretary.   | Section 7 of this Protocol<br>Communication Strategy<br>Section 8.5.2 of the NVMP | Section 7 and 8 of this Protocol outline respite periods and community consultation requirements.                |
| E77     | An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of works which are outside the hours defined in Conditions E68 and  | This Protocol   | This protocol identifies a process for works which are outside the hours   |

| CoA No. | Condition Requirements  | Document Reference  | How addressed   |
|---------|---|---|---|
|         | E69, and that are not subject to an EPL. The Protocol must be approved by the Secretary prior to commencement of the works. The Protocol must be prepared in consultation with the EPA and AA. The Protocol must:   |   | defined in Conditions E68 and E69 and that are not subject to an EPL. Section 1 identifies the consultation undertaken. |
|         | (a) provide a process for the consideration of out-of-hours works against the relevant noise and vibration criteria, including the determination of low and high-risk activities;   | Section 4 of this Protocol                                  | Section 6 of this Protocol defines low and high risk activities.  |
|         | (b) provide a process for the identification of mitigation measures for residual impacts, including respite periods in consultation with the community at each affected location, consistent with the requirements of Condition E76   | Sections 5 and 7 of this Protocol<br>Communication Strategy | Section 5 and 7 of this Protocol outlines the mitigation measures for residual impacts and consultation requirements.   |
|         | (c) identify procedures to facilitate the coordination of out-of-hours works approved by an EPL to ensure appropriate respite is provided;  | Section 4.4 of this Protocol                                | Section 4. of this Protocol outlines procedures to ensure appropriate respite is provided.                              |
|         | (d) identify an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where:<br>(i) low risk activities can be approved by the ER in consultation with the AA, and<br>(ii) high risk activities that are approved by the Secretary; and  | Sections 6 and 8 of this Protocol                           | Section 6 and 8 of this Protocol outline the approval process.  |
|         | (e) identify Department, EPA and community notification arrangements for approved out of hours works, which maybe detailed in the Communication Strategy.   | Section 7 of this Protocol<br>Communication Strategy        | Section 7 of this Protocol identifies notification arrangements for approved out of hours works.                        |
| E82     | Mitigation measures must be applied when the following residential ground-borne noise levels are exceeded:<br>(a) evening (6:00 pm to 10:00 pm) — internal LAeq (15 minute): 40 dB(A); and<br>(b) night (10:00 pm to 7:00 am) — internal LAeq (15 minute): 35 dB(A).<br>The mitigation measures must be outlined in the Construction Noise and Vibration Management Sub-plan, including in any Out-of-Hours Work Protocol, required by Condition E77. | Section 5.3 of the NVMP.                                    | Tunnelling activities are not subject to this Protocol. CoA assessment of GBN is not applicable.                        |

## 2.2. Revised Environmental Management Measures

Table 2 lists the revised environmental management measures (REMMs) for the Project that are relevant to this Protocol. This includes relevant references to where the commitment has been addressed in this Protocol and/or other Project documents.

*Table 2 Revised environmental management measures relevant to this Protocol*

| Ref # | Commitment  | Reference to where addressed       |
|-------|---|------------------------------------|
| NV5   | An out-of-hours works protocol will be developed for the construction of the project. The protocol will include:  | This Protocol                      |
|       | <ul style="list-style-type: none"> <li>▪ Details of works required outside standard construction hours, including justification of why the activities are required outside standard construction hours</li> </ul>   | Section 3 of this Protocol         |
|       | <ul style="list-style-type: none"> <li>▪ Measures that will be implemented to manage potential impacts associated with works outside standard construction hours</li> </ul>   | Section 5 of this Protocol         |
|       | <ul style="list-style-type: none"> <li>▪ Location and activity specific noise and vibration impact assessment process(es) that will be followed to identify potentially affected receivers, clarify potential impacts and select appropriate management measures</li> </ul> | Section 4 of this Protocol         |
|       | <ul style="list-style-type: none"> <li>▪ Details of the approval process (internal and external) for works proposed outside standard construction hours</li> </ul>  | Sections 6 and 8 of this Protocol  |
|       | The protocol will be included in the CNVMP, prepared in consultation with NSW Department of Planning and Environment and the NSW EPA, endorsed by the Acoustics Advisor for the project and implemented during construction of the project.                                 | Section 8 of this Protocol<br>NVMP |

### 3. OOHW Assessment Process

#### 3.1. OOHW Justification

Construction work associated with the Project will be undertaken in accordance with the assessment and management approach outlined in the ICNG and the Roads and Maritime Construction Noise and Vibration Guideline (CNVG).

The ICNG outlines the standard construction hours for the Project and requires that work proposed outside of these hours must be appropriately justified. These requirements are reflected in CoA E68 to E72 for the Project. In general, OOHW undertaken on public infrastructure projects, such as on road construction projects where the OOHW is necessary to sustain the operational integrity of roads, is considered justified in the ICNG.

As per CoA E75, OOHW not subject to an EPL (works items that are not scheduled activities under the POEO Act and are outside of the EPL premise boundary) that are regulated through this Protocol include:

- Works which could result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 “Risk Management – Principals and Guidelines”,
- Where the relevant road network operator has advised JHCPB in writing that carrying out the works and activities could result in a high risk to road network operational performance,
- Where the relevant utility service operator has advised JHCPB in writing that carrying out the works and activities could result in a high risk to the operation and integrity of the utility network,
- Where the Transport for New South Wales (TfNSW) Transport Management Centre (or other road authority) has advised JHCPB in writing that a road occupancy licence is required and will not be issued for the works or activities during the hours specified in CoAs E68 and E69, and
- Where Sydney Trains (or other rail authority) has advised JHCPB in writing that a Rail Possession is required.

#### 3.2. OOHW Permit

For any proposed OOHW, the following process will be carried out:

1. An OOHW Permit will be prepared that summarises the activities, equipment required, location and duration and includes a detailed justification for works (in accordance with Section 3.1),
2. The OOHW Permit will be submitted to the Environment Team, who will undertake a noise and vibration assessment for the OOHW (refer to Section 4). Predicted noise impacts and appropriate mitigation measures will be determined as per Section 5 of this Protocol.
3. The JHCPB Environment and Suitability Manager will determine whether the justification for the OOHW works is satisfactory.
4. Approval of the OOHW Permit will follow the process outlined in Section 6 of this Protocol,
5. Community consultation and notification will be undertaken in accordance with the Communication Strategy, as outlined in Section 7 of this Protocol, and
6. Monitoring will be undertaken in accordance with Section 9 of this Protocol and the Project’s Construction Noise and Vibration Monitoring Program.

## 4. OOHW Noise and Vibration Assessment

### 4.1. Noise

To manage potential impacts from noise and vibration during OOHW, JHCPB's noise and vibration specialists have developed tools that enable the prediction and assessment of potential noise and vibration impacts resulting from proposed OOHW in specific work areas (refer to Section 7.3 of the NVMP for information regarding the prediction tools). These prediction tools provide assistance in managing noise and vibration impacts on sensitive receivers, based on the specific work areas and types of construction machinery operating in the work area. The tools will identify the potentially affected sensitive receivers, the predicted impacts and any additional mitigation measures required. To minimise cumulative noise impacts, the prediction tools will also consider any other OOHW that is planned during the proposed OOHW.

The results of the OOHW noise assessment, including the selection of reasonable and feasible management measures from the NVMP, ICNG and CNVG, will be considered by the JHCPB construction team and the Environment and Sustainability Manager. This will be used to determine the appropriate approval pathway for the OOHW. Ongoing monitoring and validation of predictive outputs will be undertaken as detailed in the NVMP. Monitoring and validation are to be undertaken in accordance with Section 5.

### 4.2. Vibration

If vibration intensive activities are proposed as OOHW and have the potential to impact on sensitive receivers or structures, they will be assessed for compliance with minimum working distances as defined in relevant Construction Noise and Vibration Impact Statements (CNVISs) (refer to Section 7.2 of the NVMP) including:

- Cosmetic structural damage impacts,
- Disturbance to building occupants due to vibration.

Ongoing monitoring and validation of predictive outputs will be undertaken as detailed in the NVMP.

### 4.3. Ground-borne Noise

When assessing works under the Protocol, impacts to receivers will consider cumulative impacts if the receiver is also affected by tunnelling ground-borne noise at residential levels identified in CoA E82; 40dB(A) 6pm-10pm and 35dB(A) 10pm-7am. Inputs to the assessment will use validated ground-borne noise predictions using the tools detailed in the NVMP.

### 4.4. Highly Noise Intensive Works

In accordance with CoAs E72 and E73, except as permitted by an EPL or approved under this Protocol, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver will be undertaken:

- Between the hours of 8:00 am and 6:00 pm Monday to Friday,
- Between the hours of 8:00 am and 1:00 pm Saturday, and
- In continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.

'Continuous' includes any period during which there is less than one-hour respite between recommencing any of the work that are the subject of the condition.

For OOHW subject to this Protocol that involves the use of highly noise intensive equipment:

- Highly noise intensive equipment will be used prior to 10 pm where reasonable and feasible,

- Where the above cannot be achieved, the equipment will be used prior to midnight where reasonable and feasible, and
- JHCPB will consider use of alternative respite periods to minimise noise impacts, such as reduced respite periods to try and complete highly noise intensive works as early in the night as possible.

In accordance with CoA E76, to identify the appropriate respite periods for work proposed under this Protocol, JHCPB will consult with the AA and the community at each affected location. The affected locations will be identified from the Project's noise prediction tool outputs for the proposed OOHW. The outcomes of the consultation and the noise prediction tool outputs will also be used to identify appropriate mitigation measures to be implemented for the proposed OOHW. The process for stakeholder consultation for OOHW is further detailed in Section 7.

#### 4.5. Coordination of OOHW approved by an EPL

As part of the noise and vibration assessment process, JHCPB will consider any other OOHW permitted by the Project's EPL that may be underway during the proposed OOHW. This will ensure cumulative noise impacts are minimised and the appropriate respite and/or mitigation measures are identified for potentially affected sensitive receivers.



## 5. OOHW Noise and Vibration Management and Mitigation Measures

Following the noise assessment process as described in Section 4, the most appropriate reasonable and feasible management measures will be determined in accordance with the CNVG. Table 3 and Table 4 detail the relevant additional mitigation measures from the CNVG to be applied during OOHW.

Table 3 Triggers for additional mitigation measures – airborne noise

| Predicted airborne LAeq(15min) noise level at receiver |                 |                  | Additional mitigation measures     |                   |
|--|-----------------|------------------|------------------------------------|-------------------|
| Perception   | dB(A) above RBL | dB(A) above NML– | Type <sup>1</sup>                  | Mitigation levels |
| <b>All hours</b>                                       |                 |                  |                                    |                   |
| 75 dB(A) or greater                                    |                 |                  | N, V, RO                           | HA NML            |
| <b>OOHW period 1<sup>2</sup></b>                       |                 |                  |                                    |                   |
| Noticeable   | 5-10            | <5               | --                                 | NML               |
| Clearly audible  | 10- 20          | 5-15             | N, R1, DR                          | NML + 5           |
| Moderately intrusive                                   | 20-30           | 15-25            | V, N, R1, DR                       | NML + 15          |
| Highly intrusive                                       | >30             | >25              | V, N, R1, DR, SN                   | NML + 25          |
| <b>OOHW period 2<sup>3</sup></b>                       |                 |                  |                                    |                   |
| Noticeable   | 5-10            | <5               | N                                  | NML               |
| Clearly audible  | 10-20           | 5-15             | V, N, R2, DR                       | NML + 5           |
| Moderately intrusive                                   | 20-30           | 15-25            | V, N, SN, R2, DR                   | NML + 15          |
| Highly intrusive                                       | >30             | >25              | AA <sup>4</sup> , V, N, SN, R2, DR | NML + 25          |

Note: 1. AA: alternative accommodation, V: verification, N: notification, DR: duration respite, R1: respite period 1, R2: respite period 2, RO: respite offer, SN: receiver specific contact (individual letter / email, phone call, and/or individual briefing session)  
2. OOHW Period 1 refers to Mon-Fri (6pm-10pm), Sat (7am-8am & 1pm-10pm), Sun/Pub Hol (8am-6pm).  
3. OOHW Period 2 refers to Mon-Fri (10pm-7am), Sat (10pm-8am), Sun/Pub Hol (6pm-7am).  
4. Temporary relocation to be offered where construction works are planned to extend over more than two consecutive nights at that impact classification

Table 4 Triggers for additional mitigation measures - vibration

| Predicted vibration level at receiver      | Additional mitigation measures |                        |
|--|--------------------------------|------------------------|
|  | Type <sup>1</sup>              | Apply to               |
| <b>OOHW period 1<sup>2</sup></b>           |                                |                        |
| Predicted vibration exceeds maximum levels | V, N, RO, RP, SN               | All affected receivers |
| <b>OOHW period 2<sup>3</sup></b>           |                                |                        |
| Predicted vibration exceeds maximum levels | AA <sup>4</sup> , V, N, RP, SN | All affected receivers |

Note: 1. AA: alternative accommodation, RP: respite period, RO: respite offer, V: verification, N: notification, SN: receiver specific contact (individual letter / email, phone call, and/or individual briefing session)  
2. OOHW Period 1 refers to Mon-Fri (6pm-10pm), Sat (7am-8am & 1pm-10pm), Sun/Pub Hol (8am-6pm).  
3. OOHW Period 2 refers to Mon-Fri (10pm-7am), Sat (10pm-8am), Sun/Pub Hol (6pm-7am).  
4. Temporary relocation to be offered where construction works are planned to extend over more than two consecutive nights at that impact classification

It should be noted that the sensitive receivers may have personal circumstances, which means that the approach to specific additional mitigation measures in Table 3 may not be suitable. The Public Liaison Manager has the authority to amend the approach for specific sensitive receivers by taking into account the personal circumstances that may apply.

In accordance with CoA A26(e) and A26(c), the AA will regularly monitor and review the implementation of this OOHV protocol, including the nominated mitigation measures, and will consider and recommend any necessary improvements that may be made to avoid or minimise adverse noise and vibration impacts. This will ensure that appropriate noise and vibration mitigation measures are applied throughout the delivery of the Project. Refer to Section 3.3 of the CEMP for further details on the role and responsibilities of the AA.

## 6. Approval of OOHW not subject to an EPL

*Refer to Annexure A for a flow chart of the approval process for OOHW not subject to an EPL.*

When it is identified that OOHW are required and are not subject to an EPL, the engineer responsible for the work will submit an OOHW Permit to the JHCPB Environment Team. This OOHW Permit will include details of the proposed activity and justification for the need to carry out the work as OOHW.

Following this, the noise and vibration assessment process as described in Section 4 will be undertaken by a member of the JHCPB Environment Team for the proposed OOHW. The outcomes of the noise and vibration assessment, including relevant management measures, will be forwarded to the JHCPB Environment and Sustainability Manager and Public Liaison Manager, who, in consultation with the AA, will review the level of risk associated with the activity, the predicted impacts and the management measures to be implemented.

The proposed OOHW will be considered to be low risk if it can be classified in accordance with the following criteria:

1. OOHW assessed to meet the perception classification of Noticeable.
2. OOHW assessed to meet the perception classification of Clearly Audible and above at any one residential receiver for a maximum of:
  - a. Two consecutive evenings or nights, in a calendar week,
  - b. Three evenings or nights in a calendar week, and
  - c. A maximum of 10 evenings or nights in a calendar month.

The effect of the above facilitates two nights in a row and at least one period off before the third period that week.

In accordance with CoA E77(d)(i), the Environmental Representative ER has the authority to approve low risk OOHW activities in consultation with the AA.

If the duration limitations outlined above cannot be achieved, the proposed OOHW will be considered to be high risk. In this instance, the assessment of the proposed OOHW and the OOHW Permit will be issued to the Secretary for review and approval.

Applications for 'high risk' work for approval by the Secretary (CoA E77(d)(ii)) will include a noise assessment that comprises either a Construction Noise and Vibration Impact Statement (CNVIS) or noise modelling outputs and relevant management measures. The form of noise assessment required for each application will be determined based on the nature of the works (type, duration etc).

Following approval by the ER (in consultation with the AA) or the Secretary, the approved OOHW Permit will be provided to the relevant construction team by the JHCPB Environment and Sustainability Manager. On receipt of the approved OOHW Permit, any standard and additional mitigation measures that relate to the OOHW will be:

- Implemented prior to OOHW (such as specific conditions that relate to the community),
- Communicated to relevant workforce and site personnel before each shift to introduce/reinforce work restrictions, management measures and expected workforce behaviour, and
- Implemented during OOHW and monitored by the JHCPB Environment Team to confirm/validate the noise predictions.

Prior to, and during the OOHW, the AA will verify that the above approach has been followed and advise opportunities for improvement in accordance with CoA A26(e) and CoA A26(c), respectively.

Following the OOHW, JHCPB will review any lessons learnt and monitoring data to help inform future OOHW activities and mitigation measures and minimise impacts.

## **7. OOHW Stakeholder Consultation and Communication**

The Public Liaison Team will use a range of communication tools to provide clear, effective and timely information to the predicted affected sensitive receivers and stakeholders. The method of communication will be chosen based on the nature of works and the potential impacts.

In accordance with CoA E77 (e), copies of OOHW notifications would be provided to DPE and EPA on a monthly basis. As required by the Communication Strategy, these OOHW notifications would also be available on the WestConnex website. All community consultation would be carried out in accordance with the Communication Strategy and as required by this Protocol.

Where required by the CNVG, JHCPB will notify potentially affected sensitive receivers and other stakeholders of planned OOHW. In accordance with the requirements of the Environmental Protection License (EPL), all OOHW notification shall be undertaken not less than 5 calendar days and not more than 14 calendar days before the work is to be carried out. As discussed in Section 4.3, JHCPB will identify appropriate respite periods for OOHW in consultation with the community at each affected location. This consultation will be conducted in accordance with the Communication Strategy and CoA E76. It will include the provision of the following information to affected receivers:

- A schedule of likely out-of-hours work for a period of no less than three (3) months,
- A description of the potential works, location and duration,
- The noise characteristics and likely noise levels of the works, and
- Likely mitigation and management measures.

The outcomes of the community consultation, the identified respite periods and the scheduling of the likely OOHW will be provided to the AA, EPA and the Secretary.

## **8. External Approval Authorities for OOHW**

### **8.1. DPE**

In accordance with CoA E77 (d)(ii), if the proposed OOHW (that is not subject to an EPL) includes high risk activities (refer to Section 6), approval of the OOHW will be sought from the Secretary.

### **8.2. Environmental Representative and Acoustics Advisor**

In accordance with CoA E77 (d)(i), if the proposed OOHW (that is not subject to an EPL) only includes low risk activities (refer to Section 6), the OOHW can be approved by the ER, in consultation with the AA.

## **9. OOHW Monitoring**

### **9.1. Noise and Vibration Monitoring**

Noise and vibration monitoring of OOHW will be conducted and documented in accordance with the Project's Construction Noise and Vibration Monitoring Program (refer to Annexure B of the NVMP).

## 10. OOHW Exceedances / Non-conformances

### 10.1. Management response

Where monitored noise and vibration levels are found to be above modelling predictions or vibration goals, the following actions will be undertaken:

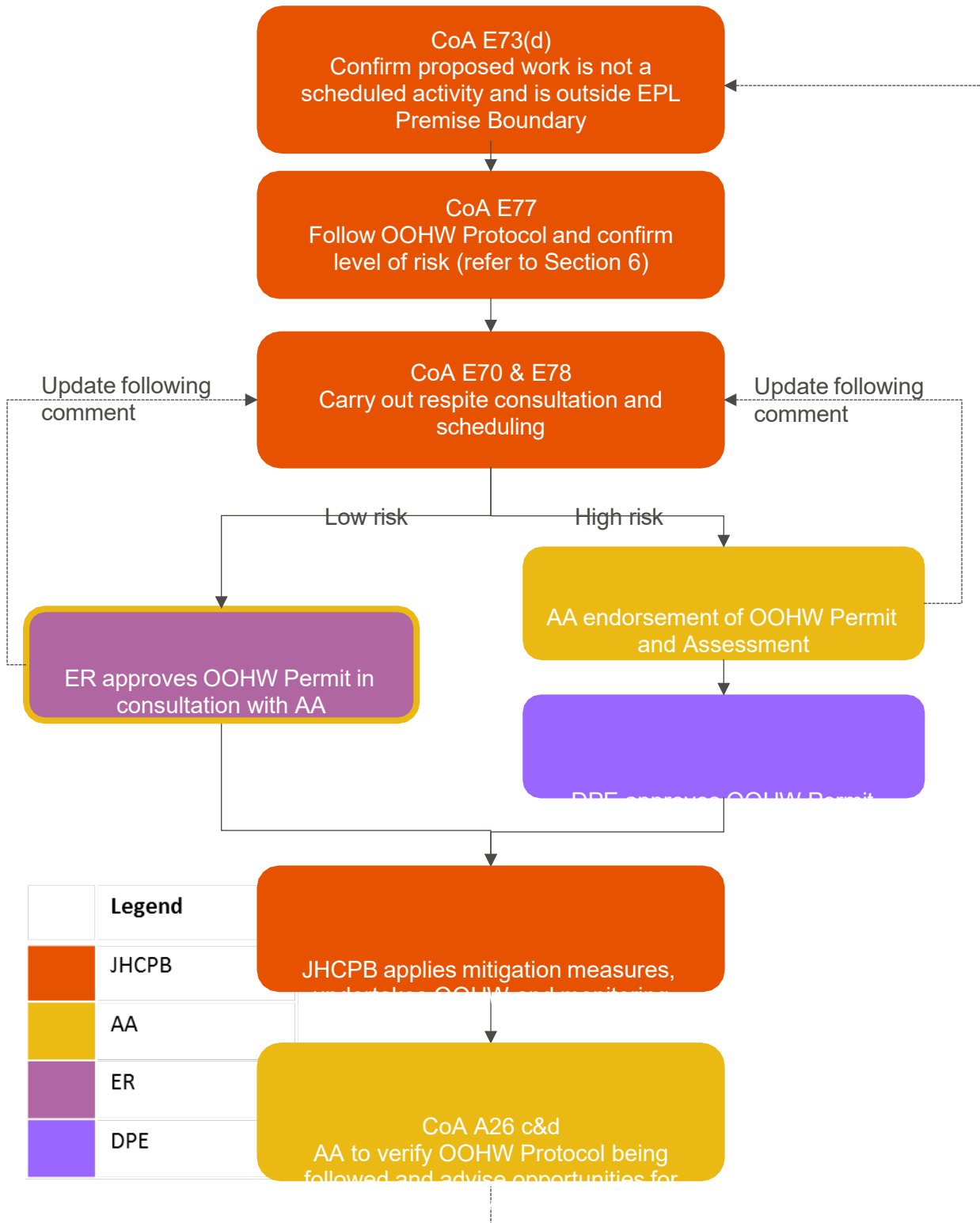
- Cease the noise and/or vibration generating source which causes the exceedance,
- Confirm the monitored levels are not being impacted by other noise or vibration sources,
- Confirm if the exceedance is due to an uncharacteristically loud/vibratory piece of equipment,
- Identify if the equipment can be swapped out for another piece of equipment or alternative equipment or plant, or if additional mitigation can be included in the site design,
- Confirm that the modelling reflects the actual activity being undertaken,
- Implement other feasible and reasonable measures which may include reducing plant size, modifying time of works, changing operational settings (such as turning off the vibratory function of the machine), and utilising alternative construction methodology or a combination of these,
- Refine the noise modelling assessment process based on the learnings. For example, if noise or vibration predictions are lower/higher than expected, OOHW scheduling would be updated accordingly to comply with the numbers of nights permitted to be worked per week,
- Continue work where impacts can be reduced, and
- Communicate lessons learnt to relevant personnel.

Previously recorded non-conformances will be considered prior to the approval of further OOHW permits.

### 10.2. Reporting

Noise and vibration complaints will be reported in accordance with the Project Communication Strategy and any EPL requirements.

## Annexure A JHCPB Rozelle Interchange OOHW Protocol Approval Flow Chart





## **Appendix A4 – Heritage Unexpected Finds Procedure**

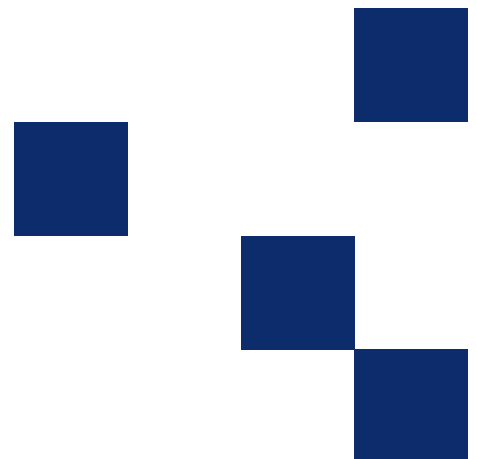
**Annexure B Roads and Maritime Standard Management  
Procedure: Unexpected Heritage Items**



# STANDARD MANAGEMENT PROCEDURE

## Unexpected Heritage Items

March 2015



## About this release

|                         |                                     |
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| Final   | 1 November 2011 | First Draft  |
| 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.   |

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**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).

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# Unexpected heritage items procedure

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## 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), *Aboriginal 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 undertaken prior to on site project work commencing. In some case, 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 all 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*<sup>1</sup>.

- 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<sup>2</sup>; an approval issued under the *Heritage Act 1977*; the Minister for Planning's conditions of project approval; or safeguards (apart from 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<sup>3</sup> 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:

---

<sup>1</sup> RMS' heritage obligations are incorporated into the conditions of heritage approvals.

<sup>2</sup> 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.

<sup>3</sup> 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).



*“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”<sup>4</sup>.*

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

### **IMPORTANT!**

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

If any impact is expected to an Aboriginal object, an Aboriginal Heritage Impact Permit (AHIP) is usually required from the Office of Environment and Heritage (OEH)<sup>5</sup>. Also, when a person becomes aware of an Aboriginal object they must notify the Director-General of OEH about its location<sup>6</sup>. 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”<sup>7</sup>.*

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.

<sup>4</sup> Section 5(1) *National Park and Wildlife Act 1974*.

<sup>5</sup> Except when Part 3A, Division 4.1 of Part 4 or Part 5.1 of the *EP&A Act* applies.

<sup>6</sup> This is required under s89(A) of the *National Park and Wildlife Act 1974* 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.

<sup>7</sup> Section 4(1) *Heritage Act 1977*.

## 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<sup>8</sup>. Also, when a person discovers a relic they must notify the NSW Heritage Council of its location<sup>9</sup>. 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* 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 1977* 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).

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

As a simple example, a pre-contact archaeological Aboriginal burial would be protected under the *National Park and Wildlife Act 1974*, while a historic (non-Aboriginal) archaeological burial within a cemetery would be protected under the *Heritage Act 1977*. For these cases, the relevant heritage approval and notification requirements described in the above sections 3.1 and 3.2 would apply. In addition to the *National Park and Wildlife Act 1974*, finding Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under s20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth).

<sup>8</sup> Except when Part 3A, Division 4.1 of Part 4 or Part 5.1 of the *EP&A Act* applies.

<sup>9</sup> 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.

 **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.

However, where it is suspected that less than 100 years has elapsed since death, the human skeletal remains come under the jurisdiction of the State Coroner and the *Coroners Act 2009* (NSW). Such a case would be considered a 'reportable death' and under legal notification obligations set out in s35(2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old<sup>10</sup> regardless of ancestry (ie both Aboriginal and non-Aboriginal remains). Public health controls may also apply.

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

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<sup>10</sup> Under s19 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.

| <b>Role</b>  | <b>Definition/responsibility</b>   |
|--|--|
| 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 <i>Procedure for Aboriginal Cultural Heritage Consultation and Investigation</i> .     |
| 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 <i>Procedure for Aboriginal Cultural Heritage Consultation and Investigation</i> .               |
| 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).<br>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. |

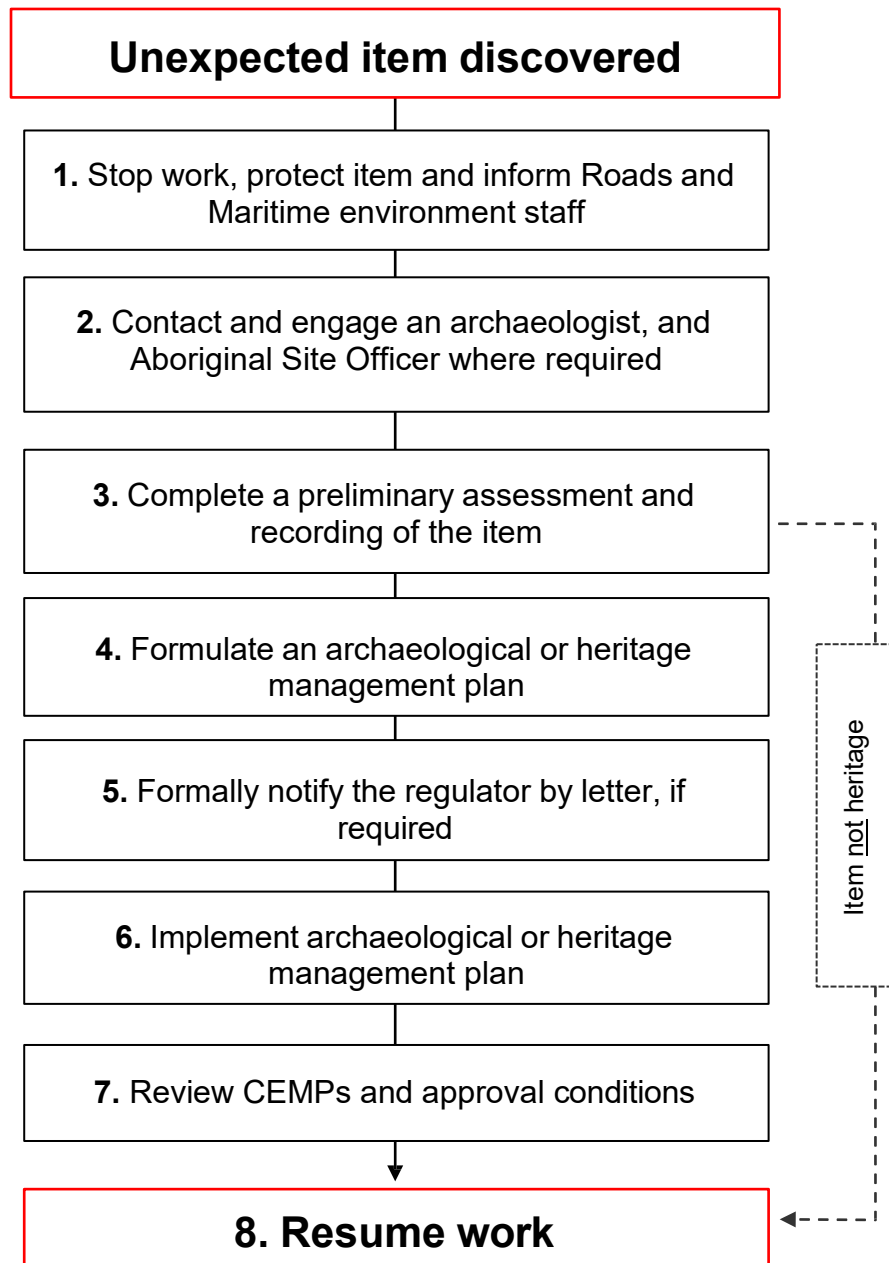
## 5. Acronyms

The following acronyms are relevant to this procedure.

| <b>Acronym</b> | <b>Meaning</b>  |
|----------------|---|
| 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   |
|----------|---|----------------|--|
| <b>1</b> | <b>Stop work, protect item and inform Roads and Maritime environment staff</b>  |                |  |
| 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            | <b>Appendix A</b><br>(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   | <b>Appendix B</b><br>(Unexpected Heritage Item Recording Form 418)<br><b>Appendix C</b><br>(Photographing Unexpected Heritage items) |



| Step | Task   | Responsibility | Guidance & Tools                                  |
|------|--|----------------|---|
| 1.5  | <p>Is the item likely to be bone?</p> <p>If <b>yes</b>, 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.</p> <p>If <b>no</b>, proceed to next step.</p>   | PM or WS-RMD   | <b>Appendix E</b><br>(Uncovering Bones)           |
| 1.6  | <p>Is the item likely to be:</p> <p>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</p> <p>b) An Aboriginal object? (An Aboriginal object may include a shell midden, stone tools, bones, rock art or a scarred tree).</p> <p>If <b>yes</b>, proceed directly to Step 1.8</p> <p>If <b>no</b>, proceed to next step.</p>  | PM or WS-RMD   | <b>Appendix A</b><br>(Identifying heritage items) |
| 1.7  | <p>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).</p> <p>If <b>yes</b>, 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 <b>yes</b>, works may proceed without further disturbance to the item. Complete Step 1.8 within 24 hours.</p> <p>If works cannot avoid further disturbance to the item, works must not recommence at this time. Complete the remaining steps in this procedure.</p> | PM or WS-RMD   | <b>Appendix A</b><br>(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)            | <b>Appendix D</b><br>(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 <i>Heritage Act</i> , the <i>National Parks and Wildlife Act</i> or the <i>Planning and Assessment Act</i> ).<br><br>Does RMS have an approval, permit or appropriate safeguard in place to impact on the item?<br><br>If <b>yes</b> , work may recommence in accordance with the approval, permit or safeguard. There is no further requirement to follow this procedure.<br><br>If <b>no</b> , 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 <i>Environmental Incident Classification and Reporting Procedure</i> . 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 |
| <b>2</b> | <b>Contact and engage an archaeologist and, where required, an Aboriginal site officer</b>   |                               |   |
| 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.<br><br>OR   | PM or WS-RMD (A; RES; SES(H)) | Also see <b>Appendix D</b><br>(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.   |                             | <u>Buyways</u>   |
| 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<br>(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<br>(RES)       | <b>Appendix C</b><br>(Photographing<br>Unexpected Heritage<br>items) |
| <b>3</b> | <b>Preliminary assessment and recording of the find</b>   |                             |  |
| 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 ( <i>eg the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'</i> ). 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-<br>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-<br>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 ( <i>eg the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'</i> ). Any such advice should be provided in writing ( <i>eg via email</i> ) 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)       | <b>Appendix D</b><br>(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      |  |
| <b>4</b> | <b>Prepare an archaeological or heritage management plan</b>   |                  |  |
| 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            | <b>Appendix F</b><br>(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 ( <i>eg Aboriginal Cultural Heritage Assessment Report</i> ). This will outline if the unexpected item is consistent with previous heritage/project approval(s)   | A/RES/PM         | <b>Appendix F</b><br>(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)/<br>WS-RMD |   |
| <b>5</b> | <b>Notify the regulator, if required.</b>  |                          |   |
| 5.1      | Review the archaeological or heritage management plan to confirm if regulator notification is required. Is notification required?<br><br>If <b>no</b> , proceed directly to Step 6<br><br>If <b>yes</b> , proceed to next step.  | PM/RES/SES(H)/<br>WS-RMD |   |
| 5.2      | If notification is required, complete the template notification letter.  | PM or WS-RMD             | <b>Appendix G</b><br>(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)/<br>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).<br>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                   | <b>Appendix D</b><br>(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                   |   |
| <b>6</b> | <b>Implement archaeological or heritage management plan</b>   |                                |   |
| 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<br>(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<br>(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    |                  |
| <b>7</b> | <b>Review CEMPs and approval conditions</b>   |                 |                  |
| 7.1      | Check whether written notification is required to be sent to the regulator before recommencing 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              |                  |
| <b>8</b> | <b>Resume work</b>  |                 |                  |
| 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*<sup>11</sup>.

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<sup>11</sup> [http://www.health.nsw.gov.au/policies/pd/2008/pdf/PD2008\\_022.pdf](http://www.health.nsw.gov.au/policies/pd/2008/pdf/PD2008_022.pdf)

## 10. List of appendices

The following appendices are included to support this procedure.

|            |   |
|------------|---|
| Appendix A | Identifying Unexpected Heritage items       |
| Appendix B | Unexpected Heritage Item Recording Form 418 |
| Appendix C | Photographing Unexpected Heritage Items     |
| Appendix D | Key Environment Contacts                    |
| Appendix E | Uncovering Bones                            |
| Appendix F | Archaeological Advice Checklist             |
| Appendix G | Template Notification Letter                |

## 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).



**Wood stave water pipe**



**Tram tracks**



**Retaining wall**



**Cistern**

**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).



Alignment pin



Survey tree



Alignment stone



Survey tree



Milestone



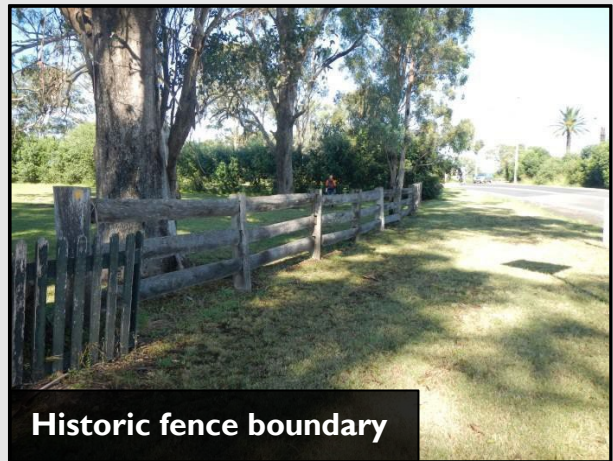
**Top left hand corner continuing clockwise:** Alignment Pin (Great Western Highway, Wentworth Falls); Survey tree (MR7, Albury); Survey tree (Kidman Way, Darlington Point, Murrumbidgee); Survey tree (Cobb Highway, Deniliquin); Milestone (Great Western Highway, Kingswood, Penrith); Alignment Stone (near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



**Remnant Bridge Piers**



**Mine Shaft**



**Historic fence boundary**



**Dairy shed**

**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



**This form is to be filled in by a project manager (or their delegate) or a team leader – Road and Maintenance Division, on the discovery of an unexpected heritage item during construction or maintenance works.**

|  |                          |   |  |
|--|--------------------------|---|--|
| <b>Date:</b>   |                          | <b>Recorded by:</b><br>(Include name and position)  |  |
| <b>Project name:</b>   |                          |   |  |
| <b>Description of works being undertaken</b><br>(eg Removal of failed pavement by excavation and pouring concrete slabs in 1m x 1m replacement sections).                |                          |   |  |
| <b>Description of exact location of item</b><br>(eg Within the road formation on Parramatta Road, east bound lane, at the corner of Johnston Street, Annandale, Sydney). |                          |   |  |
| <b>Description of item found</b> (What type of item is it likely to be? Tick the relevant boxes).  |                          |   |  |
| <b>A. A relic</b>  | <input type="checkbox"/> | 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>B. A 'work, building or structure'</b>  | <input type="checkbox"/> | 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.  |  |
| <b>C. An Aboriginal object</b>   | <input type="checkbox"/> | An 'Aboriginal object' may include stone tools, stone flakes, shell middens, rock art, scarred trees and human bones.   |  |
| <b>D. Bone</b>   | <input type="checkbox"/> | Bones can either be human or animal remains.<br><b>Remember that you must contact the local police immediately by telephone if you are <u>certain</u> that the bone(s) are <u>human remains</u>.</b>                                      |  |
| <b>E. Other</b>  | <input type="checkbox"/> |   |  |

|   |  |
|---|--|
| <p><b>Provide short description of item</b><br/>(eg Metal tram tracks running parallel to road alignment. Good condition. Tracks set in concrete, approximately 10cms (100 mm) below the current ground surface).</p>   |  |
| <p><b>Sketch</b><br/>(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).</p>   |  |
| <p><b>Action taken</b> (Tick either A or B)</p>   |  |
| <p>A. Unexpected item <b>would not</b> be further impacted on by works <input type="checkbox"/></p>   |  |
| <p><b>Describe how works would avoid impact on the item.</b> (eg The tram tracks will be left <i>in situ</i>, and recovered with road paving).</p>  |  |
| <p>B. Unexpected item <b>would be</b> further impacted on by works <input type="checkbox"/></p>   |  |
| <p><b>Describe how works would impact on the item.</b> (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).</p>  |  |
| <p><b>Important:</b><br/>It is a statutory offence to disturb Aboriginal objects and historic relics (including human remains) without an approval. All works affecting objects and relics must cease until an approval is sought.<br/>Approvals may also be required to impact on certain works. Contact your regional environment staff for guidance.</p> |  |
| <p><b>Project manager / works supervisor signature</b></p>  |  |

## Appendix C

### Photographing unexpected heritage items

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

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.

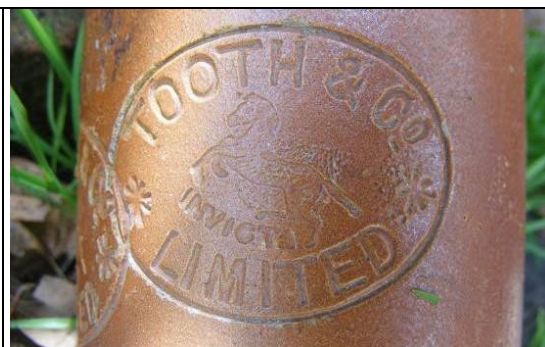
**Figure 1:** Telford road uncovered on the Great Western Highway (Leura) in 2008.

#### 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 D

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

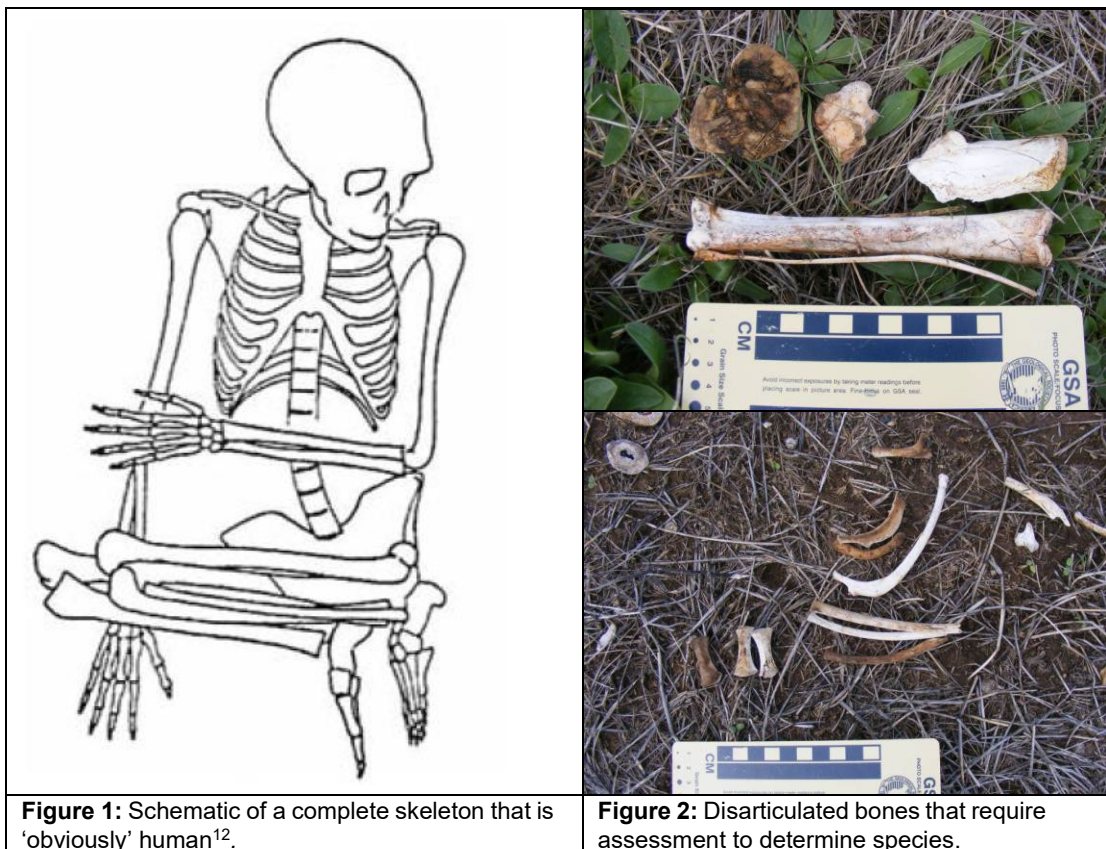
**Hand icon** All matters relating to uncovering bones and RMS' human remains notification obligations should involve RMS regional environment and heritage staff. They will guide Project Managers through occurrences of uncovering bones.

This appendix provides Project Managers with advice (1) on what to do on first uncovering bones (2) the range of human skeletal 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<sup>12</sup>.

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

<sup>12</sup> After Department of Environment and Conservation NSW (2006), *Manual for the identification of*

*Aboriginal Remains: 17.*



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.

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

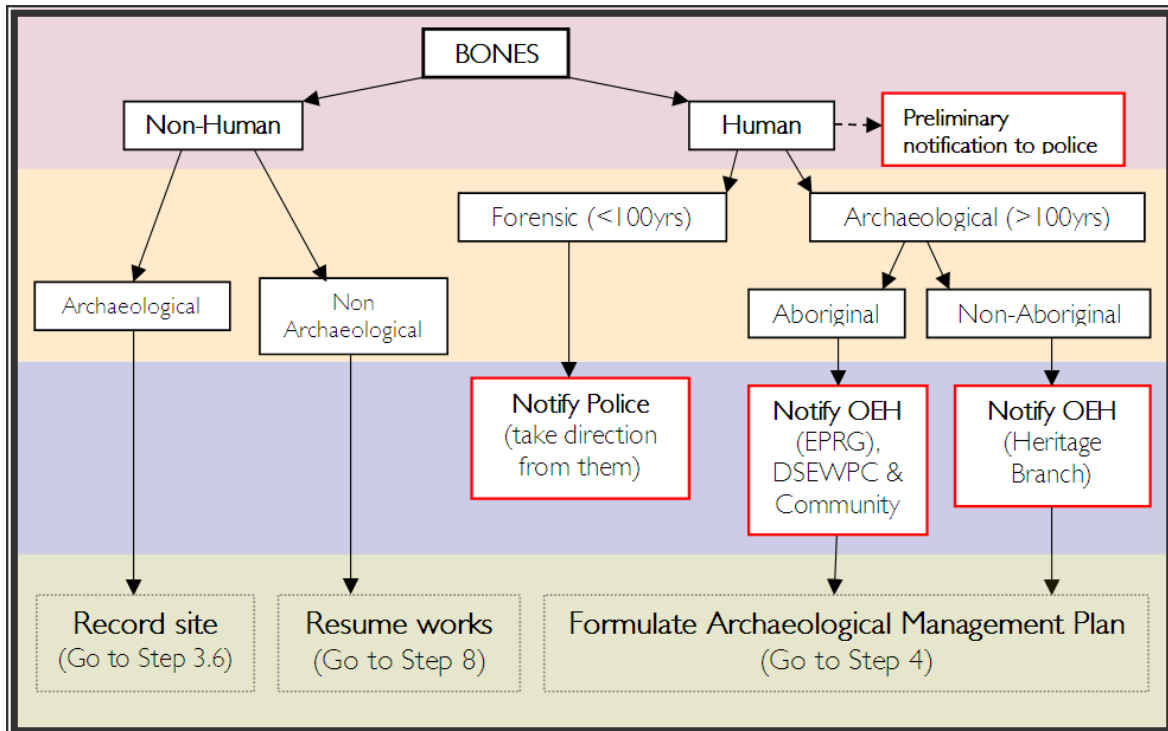
The OEH and the RMS Aboriginal Cultural Heritage Advisor (ACHA) must be notified immediately. The ACHA must contact and inform the relevant Aboriginal community stakeholders who may request to be present on site. Relevant stakeholders are determined by the RTA's *Procedure for Aboriginal Cultural Heritage 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)<sup>13</sup>. 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

<sup>13</sup> 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 archaeologist must advise the Project Manager of an appropriate archaeological or heritage management plan as soon as possible after site inspection (see Step 4). An archaeological or heritage management plan can include a range of activities and processes, which differ depending on the find and its significance. In discussions with the archaeologist the following checklist can be used by the Project Manager and the archaeologist as a prompt to ensure all relevant archaeological issues are considered when developing this plan. This will allow the project team to receive clear and full advice to move forward quickly and in the right direction. Archaeological and/or heritage advice on how to proceed can be received in a letter or email outlining all relevant archaeological and/or heritage issues.

|   | Required | Outcome/notes |
|---|----------|---------------|
| <b>Assessment and investigation</b>   |          |               |
| • Assessment of significance  | Yes/No   |               |
| • Assessment of heritage impact   | Yes/No   |               |
| • Archaeological excavation   | Yes/No   |               |
| • Archival photographic recording   | Yes/No   |               |
| <b>Heritage approvals and notifications</b>   |          |               |
| • 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   |               |
| <b>Stakeholder consultation</b>   |          |               |
| • Aboriginal stakeholder consultation requirements and how it relates to RTA <i>Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI)</i> .  | Yes/No   |               |
| • Advice from regional environmental staff, Aboriginal Cultural Heritage Advisor, Roads and Maritime heritage team.   | Yes/No   |               |
| <b>Artefact/ heritage item management</b>   |          |               |
| • Retention or conservation strategy (eg items may be subject to long conservation and interpretation)<br>• Disposal strategy (eg former road pavement)<br>• Short term and permanent storage locations (interested third parties should be | Yes/No   |               |

#### Roads & Maritime Services

|   |        |  |
|---|--------|--|
| consulted on this issue).   |        |  |
| • Control Agreement for Aboriginal objects.                                   | Yes/No |  |
| <b>Program and budget</b>   |        |  |
| • Time estimate associated with archaeological or heritage conservation work. |        |  |
| • Total cost of archaeological/heritage work.                                 |        |  |

---

## **Appendix G**

Template notification letter

[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].



## Appendix A5 – Unexpected Contamination and Asbestos Procedure

The steps to be followed in the event that contaminated material is encountered during construction are outlined below. Indicators of contamination in soils include:

- Discolouration of the soil, including staining and horizontal layers of discolouration
- Odours from soil
- Oily sheen on water leaving soils.

### **Step 1. Potential contaminated soil/material encountered during construction activities**

If potential contaminated soil/material is encountered during excavation/construction activities:

- **Cease work** in the immediate/affected area
- Foreman/ Site Supervisor will immediately notify the TfNSW Senior Environment Officer and the ER
- Install environmental controls around the site to contain the contaminated material, including diversion of water to minimise potential spread via surface water runoff
- If it is determined that there is a risk of environmental harm from the potential contamination, the EPA will be notified immediately in accordance with the TfNSW Environmental Incident and Classification Procedure
- Recommence works in an alternate area where practicable.

### **Step 2. Environmental management and work health safety management**

Prior to any contamination investigation, management or remediation activities, appropriate Safe Work Method Statements (SWMS) and EWMS will be prepared by Environment Manager and reviewed by the TfNSW Project Manager, TfNSW Senior Environment and Sustainability Officer.

Personal Protective Equipment (PPE) will be worn as per the relevant Safety Data Sheet/s. This may include, but not be limited to:

- Eye goggles
- Face mask
- Rubber boots
- Rubber gloves
- Work clothes (i.e. long sleeve shirt/pants and steel capped boots).

### **Step 3. Undertake a site/area contamination investigation**

Environment Manager will assess the situation and if considered necessary, commission a suitably qualified contamination specialist to undertake a contamination investigation in the area of the find.

The material will be classified in accordance with the Waste Classification Guidelines (EPA, 2014).

If necessary, the Environment Manager will liaise with the relevant authorities to determine the appropriate management options.

The Environment Manager (in consultation with specialists) will determine the appropriate management measures to be implemented. This may include leaving contamination undisturbed, capping of contamination, treatment or off-site disposal.

Material to be disposed of off-site will be transferred to an appropriately licensed waste facility.

If the material is determined to be acid sulfate soil or potential acid sulfate soil, the management procedures outlined in the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998) will be followed and EWMS will be prepared.

#### **Step 4. Remedial action**

Remedial actions will be incorporated into specific Remediation Action Plans (RAPs). RAPs will be prepared by a suitably qualified and experienced person and in accordance with all guidelines under the *Contaminated Land Management Act* (NSW).

RAPs will be verified by a Contaminated Land Specialist and submitted to the TfNSW Senior Environment Officer for approval prior to commencement of remediation.

Relevant EWMS or SWMS will be reviewed and updated when required.

#### **Step 5. Recommence works**

Recommence works once remedial works have been implemented and sampling has validated that the remediation strategy has been successful. The TfNSW Senior Environment and Sustainability Officer will grant approval to recommence works.

## Asbestos Management Procedure

The following Asbestos Management Procedure will be adopted in the event that potential asbestos containing material (ACM) or actual asbestos is uncovered during the Early Works. Implementation of this procedure will ensure that asbestos is managed in such a way as to avoid harm to site personnel, visitors and the community.

### 1.1 Asbestos Finds Procedure

Asbestos management for both friable and non-friable asbestos, will be undertaken as follows:

**Step 1** – Cease works in the area potentially impacted by ACM as soon as it is safe to do so and move to the upwind side of the area, or away from the area.

**Step 2** – Assess the potential immediate risk to human health posed by the unexpected find and move away from the area if required.

**Step 3** – Delineate an exclusion zone around the affected area using fencing and/or appropriate barriers and signage. Keep soil/ACM damp to minimise / prevent the release of fibres to air.

**Step 4** – Notify the TfNSW Senior Environment Officer to assess the unexpected find and determine what further assessment and/or remediation works are required. Implement the incident reporting procedure.

**Step 5** – Project Manager in consultation environmental consultant to implement RAP.

**Step 6** – TfNSW to confirm remedial actions have been successful and confirm works may proceed.

### 1.2 Asbestos Removal

Asbestos removal will be undertaken by suitably qualified personnel and/ or subcontractors who are licensed by SafeWork NSW.

### Asbestos Removal Control Plan (ARCP)

An Asbestos Removal Control Plan (ARCP) is to be prepared prior to removal of asbestos containing material in accordance with the *Work Health and Safety Regulation 2017* (Regulation 464). The ARCP will be developed prior to undertaking any asbestos removal works. The aim of the plan is to outline the specific methods and processes that will be used to ensure the removal is safe and effective.

Additionally, Safe Works Method Statements (SWMS) will also be generated for individual ACM related activities.

#### Identification Friable Asbestos

- Requires Class A License

- Any amount of friable asbestos, ACM, asbestos contaminated dust or debris (ACD) or non- friable asbestos.

#### *Licensed Non-friable asbestos*

- Requires class B license
- Greater than 10 metres squared of Non-Friable (bonded) asbestos or ACM
- ACD that is associated with removal to 10 square metres or more of non-friable asbestos or ACM.

#### *Unlicensed Asbestos*

- No license required
- 10 meters squared or less of Non–Friable (bonded) asbestos or ACM
- ACD that is not more than a minor contamination and is associated with the removal of 10 square meters or less of non-friable asbestos or ACM.

#### *Asbestos Removal from soil*

- May require Class A or Class B license depending on type (Friable or Non-Friable) Asbestos-contaminated soil comprising non-attached pieces of asbestos cement products and other material containing asbestos uncovered in soil.

### **Notification**

Prior to the commencement of licensed asbestos removal works, notification to SafeWork NSW is required. SafeWork NSW requires a minimum of 5 days' notice prior to the removal of asbestos and the notification will include:

- Name, registered business name, ABN, license number and business contact details of the licensed asbestos removalist
- Name and business contact details of the Supervisor who will oversee the removal work
- Client name and contact details
- Name, including registered business or corporate name, of the person with management or control of the workplace
- Workplace address, including specific location if a large workplace
- Kind of workplace where removal work will be performed (workplace type and scope of work)
- Date of notification
- Start date of the removal work and an estimation of how long it will take
- Nature of asbestos to be removed – friable or non-friable
- Type of asbestos, e.g. asbestos-contaminated sheeting, vinyl tiles, lagging, gaskets, etc.
- For friable asbestos (not restricted to soils) the mechanism by which the area will be enclosed
- Estimated quantity of asbestos to be removed

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- Number of workers who will perform the removal work and details of their competency to carry out the removal work.

### **Site Establishment and Signage**

The boundaries of the 'Asbestos Works Area' and the 'Asbestos Removal Site' must be determined and defined by the nominated asbestos removal supervisor. All stakeholders must agree on the asbestos removal boundaries before any asbestos removal work commences. In determining the asbestos removal boundaries, consideration shall be given to:

- The use and suitability of various types of enclosures and asbestos removal methods; and
- The impacts of the asbestos removal work, including potential exposures in the surrounding region. In determining the distance between barriers and the asbestos work area a risk assessment should take account of:
- Whether the ACM are friable or non-friable
- Activity around the asbestos work area (other workers, visitors, neighbours, the public, etc.)
- The methods of ACM removal
- Any existing barriers (walls, doors, etc.)
- The quantity of ACM to be removed
- The type of barrier used (e.g. boarding or tape).

The asbestos removal site boundary must be clearly and securely delineated to ensure persons do not enter inadvertently or without authority. Signage must warn persons that asbestos removal work is being carried out, of the dangers of exposure to asbestos and of PPE and other site entry requirements. All boundary delineation and warning/danger signs must remain in place until a clearance to re-occupy has been granted. All warning/danger signage must comply with *AS 1319 Safety signs for the occupational environment*. These signs will be weatherproof, constructed of light-weight material and adequately secured

In circumstances where the erection of fencing or barricades is not feasible, such as on concrete hard stand or within a building, tape may be used as a barrier to define an asbestos work area (for some types of asbestos removal work of short duration). If a sign is not feasible, tape with the words 'asbestos hazard' repeated along its length may be used instead to delineate and communicate the hazard.

### **Removal Methods**

The removal methods for identified asbestos will be determined by the ARCP upon identification on site. No removal will occur until the ARCP is approved by TfNSW.

### **Clearance**

Following removal of asbestos / ACM, the licensed asbestos removalist will arrange for a clearance inspection of the area to facilitate the issue of a clearance certificate

and allow construction to recommence in the affected area. The clearance inspection is conducted by:

- an independent licensed asbestos assessor, for work that was carried out by a Class A licensed asbestos removalist
- an independent competent person, for asbestos work that is not required to be carried out by a Class A licensed asbestos removalist.

To be independent, the licensed asbestos assessor must not be involved in the removal of asbestos for that specific job and is not involved in a business or undertaking involved in the removal of the asbestos for that specific job.

A clearance certificate will be issued if the independent licensed asbestos assessor or competent person is satisfied that the asbestos removal area and the immediate area are free from visible asbestos contamination. Entry to the area will be permitted following confirmation of certification.

## **Waste Disposal**

Asbestos waste will be disposed of as soon as reasonably practicable. Asbestos waste will be disposed at a waste disposal site in accordance with NSW EPA guidelines (including Waste Classification Guidelines (EPA, 2014)) and relevant industry codes of practice.

All ACM materials disposed offsite will be recorded on waste tracking form(s) and documented within the project waste management register. Additionally, disposal of ACM in excess of 10 square metres or 100kg will be tracked using the NSW EPA Waste locate system.

### **Asbestos waste transported by trucks**

The transportation of asbestos waste by trucks must comply with the following requirements;

- Transporter must have the appropriate EPA license to transport asbestos waste
- Asbestos contaminated soils are wetted down
- Any part of any vehicle in which a person transports asbestos waste is covered, and leak proof during transportation
- Bonded asbestos materials must be securely packaged during transportation
- Friable material is kept in a sealed container during transportation

## **Records**

The contractor will maintain a register of any unexpected contamination finds, including a map of all contaminated and/or remediated sites. The register will be made available to the TfNSW Environment and Sustainability Officer on request for inclusion in Project Monthly Reports.

## **Appendix A6 – Construction Noise and Vibration Impact Statement 11 January 2024**



# Rozelle Parklands Enhancements

## Construction Noise and Vibration Impact Statement

### Transport for NSW

Client Office Address

Prepared by:

#### SLR Consulting Australia

Tenancy 202 Submarine School, Sub Base  
Platypus, 120 High Street, North Sydney NSW  
2060, Australia

SLR Project No.: 610.031535.00001

11 January 2024

Revision: 1.0



## Revision Record

| Revision | Date            | Prepared By         | Checked By     | Authorised By  |
|----------|-----------------|---------------------|----------------|----------------|
| 1.0      | 11 January 2024 | Nicholas Vandenberg | Aaron McKenzie | Aaron McKenzie |
|          |                 |                     |                |                |
|          |                 |                     |                |                |
|          |                 |                     |                |                |
|          |                 |                     |                |                |

## Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Transport for NSW (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



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## 1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Transport for NSW (TfNSW) to prepare a construction noise and vibration impact statement (CNVIS) for the proposed construction works associated with the Rozelle Parklands Enhancements (the Project).

This report assesses the potential construction noise and vibration impacts associated with the work located at the Rozelle Parklands. An explanation of the specialist acoustic terminology used in this report is provided in **Appendix A**.

## 2.0 Project Description

As part of the Rozelle Interchange project for the M4-M5 Link project, Rozelle Parklands Enhancement works are proposed to enhance facilities in the parklands.

The key elements of the project include:

- A second facilities building intended to be used as change rooms, toilets, storage and with provisions for a canteen facility
- Two multi-purpose courts to accommodate a range of sports including netball, basketball and tennis
- Installation and commissioning of lighting towers over the AFL/cricket oval and soccer oval (piling works and conduits have been undertaken during Stage 2 of the project)
- Additional toilet block adjacent to the playground area
- Utility works including protection and/or adjustment of existing utilities and installation of new utilities.

The Rozelle Parklands is a main design element of the project as described in the Urban Design and Landscape Plan. As per CoA 134, staging of the parklands is anticipated in the plan to maximise progressive public access and use of the park, with Stage 2 and 3 becoming operational whilst construction of Stage 4 is undertaken. Completion of Stage 4 is independent of the opening of the motorway.

### 2.1 Scope of this CNVIS

The focus of this CNVIS is the construction works associated with the construction of a new sports facilities building, multi-use courts, a new toilet block and installation of new lighting towers.

The assessment considers works on the work to be limited to standard daytime hours only.

The details of work activities are outlined in **Section 5.1**. The work areas are bound by residential, commercial and other sensitive receivers.

## 3.0 Existing Environment

The existing ambient noise environment was described in Appendix J (technical working paper: Noise and vibration) of the M4-M5 Link EIS. This section provides details of the existing ambient noise environment specifically relating to the project. The NCAs used are consistent with the NCAs described in the EIS and are shown in **Figure 1** with the receiver classifications and noise monitoring locations.

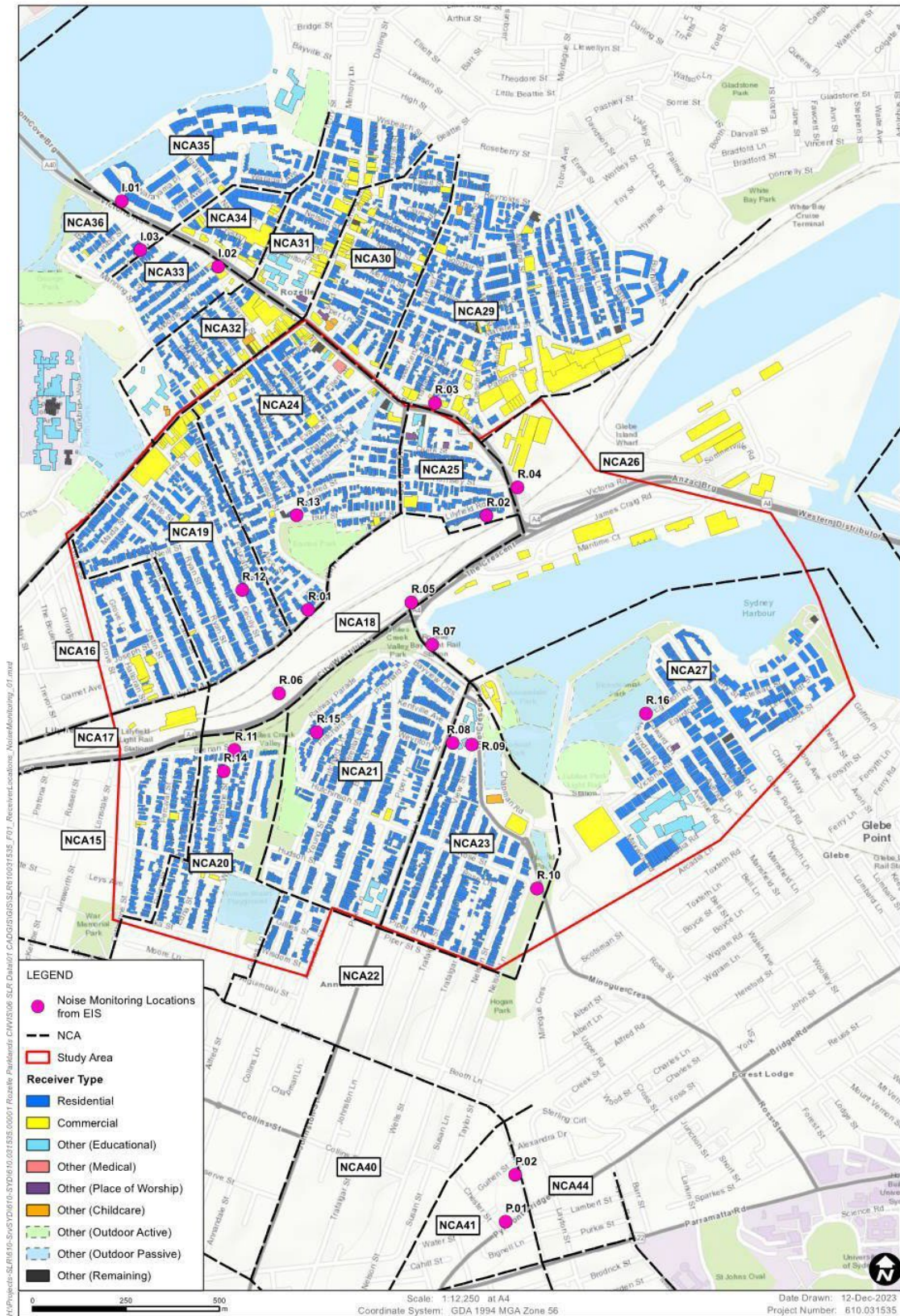
### 3.1 Ambient Noise Levels

Ambient noise levels have been referenced from the baseline noise survey undertaken as part of the M4-M5 Link EIS. The ambient noise levels relevant to the proposed works are summarised in **Table 1**.

**Table 1 Ambient Noise Levels**

| Noise Monitoring Location | Rating background Level (RBL) dBA<br>ICNG defined time periods |                |                   |
|---------------------------|--|----------------|-------------------|
|                           | Daytime period   | Evening period | Night-time period |
| R.01                      | 54   | 52             | 44                |
| R.02                      | 51   | 51             | 45                |
| R.09                      | 49   | 45             | 36                |
| R.14                      | 44   | 42             | 35                |
| R.15                      | 48   | 48             | 42                |
| R.16                      | 49   | 49             | 42                |

**Figure 1 Receiver Classifications and Noise Monitoring Locations**



## 4.0 Assessment Criteria

### 4.1 Construction Noise and Vibration Guidelines

The standards and guidelines relevant to the Project are listed in **Table 2**. These guidelines aim to protect the community and environment from excessive noise and vibration impacts during construction of projects.

**Table 2 Construction Noise and Vibration Standards and Guidelines**

| Guideline/Policy Name  | When Guideline is Used   |
|--|--|
| Interim Construction Noise Guideline (ICNG) (DECC, 2009)   | Assessment of airborne noise impacts on sensitive receivers  |
| <i>Construction Noise and Vibration Guideline (Roads) (CNVG) (Transport for NSW, 2023)</i>                                   | Assessment and management protocols for airborne noise, ground-borne noise and vibration impacts for construction of road projects         |
| <i>Road Noise Policy (RNP) (DECCW, 2011)</i>   | Assessment of construction traffic impacts   |
| <i>BS 7385 Part 2-1993 Evaluation and measurement for vibration in buildings Part 2, BSI, 1993</i>                           | Assessment of vibration impacts (structural damage) to non-heritage sensitive structures   |
| <i>DIN 4150:Part 3-2016 Structural vibration – Effects of vibration on structures, Deutsches Institute fur Normung, 1999</i> | Screening assessment of vibration impacts (structural damage) to heritage sensitive structures, where the structure is found to be unsound |
| <i>Assessing Vibration: a technical guideline (AVTG) (DEC, 2006)</i>   | Assessment of vibration impacts on sensitive receivers   |

### 4.2 Interim Construction Noise Guideline

The NSW Interim Construction Noise Guideline (ICNG) is used to assess and manage impacts from construction noise on residences and other sensitive land uses in NSW.

The ICNG contains procedures for determining project specific Noise Management Levels (NMLs) for sensitive receivers based on the existing background noise in the area. The 'worst-case' noise levels from construction of a project are predicted and then compared to the NMLs in a 15-minute assessment period to determine the likely impact of the project.

The NMLs are not mandatory limits, however, where construction noise levels are predicted or measured to be above the NMLs, feasible and reasonable work practices to minimise noise emissions are to be investigated.

#### Residential Receivers

The ICNG approach for determining NMLs at residential receivers is shown in **Table 3**.

**Table 3 ICNG NMLs for Residential Receivers**

| Time of Day   | NML<br>LAeq(15minute)           | How to Apply   |
|---|---------------------------------|--|
| Standard Construction Hours:<br><br>Monday to Friday<br>7:00 am to 6:00 pm<br><br>Saturday<br>8:00 am to 1:00 pm<br><br>No work on Sundays or public holidays | Noise affected<br>RBL1 + 10 dB  | The noise affected level represents the point above which there may be some community reaction to noise <ul style="list-style-type: none"> <li>Where the predicted or measured LAeq(15minute) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level</li> <li>The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.</li> </ul>   |
|   | Highly Noise Affected<br>75 dBA | The Highly Noise Affected (HNA) level represents the point above which there may be strong community reaction to noise <ul style="list-style-type: none"> <li>Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restructuring the hours that the very noisy activities can occur, taking into account: <ol style="list-style-type: none"> <li>Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools or mid-morning or mid-afternoon for works near residences</li> <li>If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.</li> </ol> </li> </ul> |
| Outside Standard Construction Hours   | Noise affected<br>RBL + 5 dB    | <ul style="list-style-type: none"> <li>A strong justification would typically be required for works outside the recommended standard hours</li> <li>The proponent should apply all feasible and reasonable work practices to meet the noise affected level</li> <li>Where all feasible and reasonable practises have been applied and noise is more than 5 dB above the noise affected level, the proponent should negotiate with the community.</li> </ul>  |

Note 1: The RBL is the Rating Background Level and the ICNG refers to the calculation procedures in the NSW *Industrial Noise Policy* (INP). The INP has been superseded by the NSW EPA *Noise Policy for Industry* (NPfl).

Work is recommended to be completed during Standard Construction Hours where possible. More stringent requirements are placed on work that is required to be completed outside Standard Construction Hours (ie during the evening or night-time), which reflects the greater sensitivity of communities to noise impacts during these periods.

### Sleep Disturbance

Infrastructure projects often require certain work to be completed during the night-time. Where night work is located close to residential receivers, there is potential for sleep



disturbance impacts.

The ICNG lists five categories of work that might need to be undertaken outside of Standard Construction Hours:

- The delivery of oversized equipment or structures that require special arrangements to transport on public roads
- Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm
- Maintenance and repair of public infrastructure where disruption to essential services or considerations of worker safety do not allow work within standard hours
- Public infrastructure work that shortens the length of the project and is supported by the affected community
- Work where a proponent demonstrates and justifies a need to operate outside the recommended standard hours.

Where construction work is planned to extend over more than two consecutive nights, the ICNG recommends that an assessment of sleep disturbance impacts should be completed. The ICNG refers to the NSW Environmental Criteria for Road Traffic Noise for assessing the potential impacts, which notes that to limit the level of sleep disturbance, the L1 level (or  $L_{Amax}$ ) should not exceed the existing  $L_{A90}$  background noise level by more than 15 dB.

## 4.2.1 Residential NMLs

### 4.2.1.1 Summary of Residential NMLs

The residential NMLs for NCAs within the project area are summarised in **Table 4** and are consistent with those in the M4-M5 Link EIS.

**Table 4 Residential NMLs**

| NCA   | Representative Background Monitoring Location | Noise Management Level       |                    |                    |                       | Sleep disturbance Screening Criteria (RBL+15dB) |
|-------|---|------------------------------|--------------------|--------------------|-----------------------|---|
|       |   | Standard Daytime (RBL +10dB) | Out of Hours –     |                    |                       |   |
|       |   |                              | Daytime (RBL +5dB) | Evening (RBL +5dB) | Night-time (RBL +5dB) |   |
| NCA15 | R.14  | 54                           | 49                 | 47                 | 40                    | 50  |
| NCA16 | R.01  | 64                           | 59                 | 57                 | 49                    | 59  |
| NCA19 | R.01  | 64                           | 59                 | 57                 | 49                    | 59  |
| NCA20 | R.14  | 54                           | 49                 | 47                 | 40                    | 50  |
| NCA21 | R.15  | 58                           | 53                 | 53                 | 47                    | 57  |
| NCA22 | R.15  | 58                           | 53                 | 53                 | 47                    | 57  |
| NCA23 | R.09  | 59                           | 54                 | 50                 | 41                    | 51  |
| NCA24 | R.01  | 64                           | 59                 | 57                 | 49                    | 59  |
| NCA25 | R.02  | 61                           | 56                 | 56                 | 50                    | 60  |
| NCA27 | R.16  | 59                           | 54                 | 54                 | 47                    | 57  |

## 4.2.2 'Other Sensitive' Land Uses and Commercial Receivers

Several non-residential land uses have been identified in the study area. The NMLs for 'other sensitive' receivers are shown in **Table 5**.

**Table 5 NMLs for 'Other Sensitive' Receivers**

| Land Use  | Noise Management Level<br>LAeq(15minute) (dBA)<br>(Applied when the property is<br>in use) |                 |
|---|--|-----------------|
|   | Internal   | External        |
| <b>ICNG 'Other Sensitive' Receivers</b>   |  |                 |
| Classrooms at schools and other educational institutions  | 45   | 55 <sup>1</sup> |
| Hospital wards and operating theatres   | 45   | 65 <sup>2</sup> |
| Places of worship   | 45   | 55 <sup>1</sup> |
| Active recreation areas<br>(characterised by sporting activities and activities which generate noise) | -  | 65              |
| Passive recreation areas<br>(characterised by contemplative activities that generate little noise)    | -  | 60              |
| Commercial  | -  | 70              |
| Industrial  | -  | 75              |
| <b>Non-ICNG 'Other Sensitive' Receivers</b>   |  |                 |
| Hotel – daytime & evening <sup>3</sup>  | 50   | 60 <sup>1</sup> |
| Hotel – night-time <sup>3</sup>   | 40   | 50 <sup>1</sup> |
| Child care centres – sleeping areas <sup>4</sup>  | 40   | 50 <sup>1</sup> |
| Library   | 45   | 55              |
| Aged Care   | Considered as Residential  |                 |

Note 1: It is assumed that these receivers have windows partially open for ventilation which results in internal noise levels being around 10 dB lower than the external noise level.

Note 2: It is assumed that these receivers have fixed windows which conservatively results in internal noise levels being around 20 dB lower than the external noise level.

Note 3: Criteria taken from AS2107.

Note 4: Criteria taken from Association of Australian Acoustical Consultants *Guideline for Child Care Centre Acoustic Assessment*.

### 4.2.3 Construction Traffic Noise Guidelines

The potential impacts from construction traffic associated with the proposal when travelling on public roads are assessed under the NSW EPA *Road Noise Policy* (RNP) and Roads and Maritime (now Transport) *Construction Noise and Vibration Guideline* (CNVG).

An initial screening test is first applied to evaluate if existing road traffic noise levels are expected to increase by more than 2.0 dB as a result of construction traffic. Where this is considered likely, further assessment is required using the RNP and Roads and Maritime (now Transport) *Noise Criteria Guideline* (NCG) base criteria shown in **Table 6**.

**Table 6 RNP/NCG Criteria for Assessing Construction Traffic on Public Roads**

| Road Category                                  | Type of Project/Land Use   | Assessment Criteria (dBA)     |                              |
|--|--|-------------------------------|------------------------------|
|  |  | Daytime<br>(7 am – 10 pm)     | Night-time<br>(10 pm – 7 am) |
| Freeway/<br>arterial/<br>sub-arterial<br>roads | Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments | LAeq(15hour) 60<br>(external) | LAeq(9hour) 55<br>(external) |
| Local roads                                    | Existing residences affected by additional traffic on existing local roads generated by land use developments                          | LAeq(1hour) 55<br>(external)  | LAeq(1hour) 50<br>(external) |

### 4.3 Construction Vibration Guidelines

The effects of vibration from construction work can be divided into three categories:

- Those in which the occupants of buildings are disturbed (**human comfort**). People can sometimes perceive vibration impacts when vibration generating construction work is located close to occupied buildings. Vibration from construction work tends to be intermittent in nature and the EPA's *Assessing Vibration: a technical guideline* (2006) provides criteria for intermittent vibration based on the Vibration Dose Value (VDV), as shown in **Table 7**. While the construction activities for the proposal are generally not expected to result in continuous or impulsive vibration impacts, criteria are provided in **Table 8**.
- Those where building contents may be affected (**building contents**). People perceive vibration at levels well below those likely to cause damage to building contents. For most receivers, the human comfort vibration criteria are the most stringent and it is generally not necessary to set separate criteria for vibration effects on typical building contents. Exceptions to this can occur when vibration sensitive equipment, such as electron microscopes or medical imaging equipment, are in buildings near to construction work. No such equipment has been identified in the study area.
- Those where the integrity of the building may be compromised (**structural/cosmetic damage**). If vibration from construction work is sufficiently high it can cause cosmetic damage to elements of affected buildings. Industry standard cosmetic damage vibration limits are specified in British Standard BS 7385 and German Standard DIN 4150. The limits are shown in **Table 9** and **Table 10**.

**Table 7 Human Comfort Vibration – Vibration Dose Values for Intermittent Vibration**

| Building Type  | Assessment Period | Vibration Dose Value <sup>1</sup> (m/s <sup>1.75</sup> ) |         |
|--|-------------------|--|---------|
|  |                   | Preferred  | Maximum |
| Critical Working Areas (eg operating theatres or laboratories)   | Day or night-time | 0.10   | 0.20    |
| Residential  | Daytime           | 0.20   | 0.40    |
|  | Night-time        | 0.13   | 0.26    |
| Offices, schools, educational institutions and places of worship | Day or night-time | 0.40   | 0.80    |
| Workshops  | Day or night-time | 0.80   | 1.60    |

Note 1: The VDV accumulates vibration energy over the daytime and night-time assessment periods, and is dependent on the level of vibration as well as the duration.

**Table 8 Human Comfort Vibration – Preferred and Maximum Weighted Root Mean Square Values for Continuous and Impulsive Vibration Acceleration (m/s<sup>2</sup>) 1–80 Hz**

| Location   | Assessment period | Preferred values |               | Maximum values |               |
|--|-------------------|------------------|---------------|----------------|---------------|
|  |                   | z-axis           | x- and y-axis | z-axis         | x- and y-axis |
| <b>Continuous vibration</b>                                      |                   |                  |               |                |               |
| Residential  | Daytime           | 0.010            | 0.0071        | 0.020          | 0.014         |
|  | Night-time        | 0.007            | 0.005         | 0.014          | 0.010         |
| Offices, schools, educational institutions and places of worship | Day or night-time | 0.020            | 0.014         | 0.040          | 0.028         |
| Workshops  | Day or night-time | 0.04             | 0.029         | 0.080          | 0.058         |
| <b>Impulsive vibration</b>                                       |                   |                  |               |                |               |
| Residential  | Daytime           | 0.30             | 0.21          | 0.60           | 0.42          |
|  | Night-time        | 0.10             | 0.071         | 0.20           | 0.14          |
| Offices, schools, educational institutions and places of worship | Day or night-time | 0.64             | 0.46          | 1.28           | 0.92          |
| Workshops  | Day or night-time | 0.64             | 0.46          | 1.28           | 0.92          |

**Table 9 Cosmetic Damage – BS 7385 Transient Vibration Values for Minimal Risk of Damage**

| Group | Type of Building  | Peak Component Particle Velocity in Frequency Range of Predominant Pulse |   |
|-------|---|--|---|
|       |   | 4 Hz to 15 Hz  | 15 Hz and Above   |
| 1     | Reinforced or framed structures. Industrial and heavy commercial buildings              | 50 mm/s at 4 Hz and above  |   |
| 2     | Unreinforced or light framed structures. Residential or light commercial type buildings | 15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz                           | 20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above |

Note 1: Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values may need to be reduced by up to 50%.

**Table 10 Cosmetic Damage – DIN 4150 Guideline Values for Short-term Vibration on Structures**

| Group | Type of Structure  | Guideline Values Vibration Velocity (mm/s)   |             |              |                           |                       |
|-------|--|--|-------------|--------------|---------------------------|-----------------------|
|       |  | Foundation, All Directions at a Frequency of |             |              | Topmost Floor, Horizontal | Floor Slabs, Vertical |
|       |  | 1 to 10 Hz                                   | 10 to 50 Hz | 50 to 100 Hz | All frequencies           | All frequencies       |
| 1     | Buildings used for commercial purposes, industrial buildings and buildings of similar design   | 20   | 20 to 40    | 40 to 50     | 40                        | 20                    |
| 2     | Residential buildings and buildings of similar design and/or occupancy   | 5  | 5 to 15     | 15 to 20     | 15                        | 20                    |
| 3     | Structures that, because of their particular sensitivity to vibration, cannot be classified as Group 1 or 2 <b>and</b> are of great intrinsic value (eg heritage listed buildings) | 3  | 3 to 8      | 8 to 10      | 8                         | 20 <sup>1</sup>       |

Note 1: It may be necessary to lower the relevant guideline value markedly to prevent minor damage.

### 4.3.1 Heritage Buildings or Structures

Heritage listed buildings and structures should be considered on a case-by-case basis but as noted in BS 7385 should not be assumed to be more sensitive to vibration, unless structurally unsound. Where a heritage building is deemed to be sensitive, the more stringent DIN 4150 Group 3 guideline values in **Table 10** can be applied.

Heritage listed items identified in the study area are identified in the M4-M5 Link EIS.

### 4.3.2 Minimum Working Distances for Vibration Intensive Works

Minimum working distances for typical vibration intensive construction equipment are provided in the CNVG and are shown in **Table 11**. The minimum working distances are for both cosmetic damage (from BS 7385 and DIN 4150) and human comfort (from the NSW EPA *Assessing Vibration: a technical guideline*). They are calculated from empirical data which suggests that where work is further from receivers than the quoted minimum distances then impacts are not considered likely.

**Table 11 Recommended Minimum Working Distances from Vibration Intensive Equipment**

| Plant Item              | Rating/Description              | Minimum Distance                           |                                    |                     |
|-------------------------|---------------------------------|--|------------------------------------|---------------------|
|                         |                                 | Cosmetic Damage                            |                                    | Human Response      |
|                         |                                 | Residential and Light Commercial (BS 7385) | Heritage Items (DIN 4150, Group 3) | (NSW EPA Guideline) |
| Vibratory Roller        | <50 kN (1–2 tonne)              | 5 m  | 11 m                               | 15 m to 20 m        |
|                         | <100 kN (2–4 tonne)             | 6 m  | 13 m                               | 20 m                |
|                         | <200 kN (4–6 tonne)             | 12 m                                       | 25 m                               | 40 m                |
|                         | <300 kN (7–13 tonne)            | 15 m                                       | 31 m                               | 100 m               |
|                         | >300 kN (13–18 tonne)           | 20 m                                       | 40 m                               | 100 m               |
|                         | >300 kN (>18 tonne)             | 25 m                                       | 50 m                               | 100 m               |
| Small Hydraulic Hammer  | 300 kg (5 to 12 t excavator)    | 2 m  | 5 m                                | 7 m                 |
| Medium Hydraulic Hammer | 900 kg (12 to 18 t excavator)   | 7 m  | 15 m                               | 23 m                |
| Large Hydraulic Hammer  | 1,600 kg (18 to 34 t excavator) | 22 m                                       | 44 m                               | 73 m                |
| Vibratory Pile Driver   | Sheet piles                     | 2 m to 20 m                                | 5 m to 40 m                        | 20 m                |
| Piling Rig – Bored      | ≤ 800 mm                        | 2 m (nominal)                              | 5 m                                | 4 m                 |
| Jackhammer              | Hand held                       | 1 m (nominal)                              | 3 m                                | 2 m                 |

The minimum working distances are indicative and will vary depending on the particular item of equipment and local geotechnical conditions. The distances apply to cosmetic damage of typical buildings under typical geotechnical conditions.

## 5.0 Noise Assessment

The potential construction noise levels from the Project have been predicted using ISO 9613:2 algorithm in SoundPLAN noise modelling software. The model includes ground topography, buildings and representative noise sources from the Project.

### 5.1 Work Scenarios

Noise modelling scenarios have been determined based on key Project noise generating stages, supplied by the Project team. A detailed description of each work scenario is provided in **Table 12**.

A summary of construction work periods and schedule required for each scenario is shown in **Table 13**.

All works are proposed to occur during standard daytime hours.

**Table 12 Works Scenario Description**

| ID    | Location               | Scenario                                      | Description   |
|-------|------------------------|---|---|
| W.001 | Sports Facility        | Earthworks -Noise Intensive                   | General earthworks activities including: Delivery of materials, demolition of structures, utilities, compaction, etc. |
| W.002 |                        | Earthworks -Typical                           |   |
| W.003 |                        | Piling  | Bored piling works surrounding the sports building.   |
| W.004 |                        | Concrete works                                | Delivery and placement of concrete, tools, etc.   |
| W.005 |                        | Steel/roofing/fitout                          | Delivery of structural steel, lifting and installation, fitout, etc.  |
| W.006 |                        | landscaping                                   | Delivery of plants, tools, equipment.   |
| W.007 |                        | Compound Operation                            | Operation and use of the compound area including truck activities, deliveries, etc.                                   |
| W.008 | Multi use Sports Court | Earthworks – Noise Intensive                  | General earthworks activities including: Delivery of materials, demolition of structures, utilities, compaction, etc. |
| W.009 |                        | Earthworks – Typical                          |   |
| W.010 |                        | concrete works, construction of sports courts | Delivery and placement of concrete, tools, etc.   |
| W.011 |                        | Landscaping                                   | Delivery of plants, tools, equipment.   |
| W.012 | Sports field           | install light columns                         | Delivery and installation of light pole columns   |
| W.013 | Toilet Building        | Concrete works                                | Delivery and placement of concrete, tools, etc.   |
| W.014 |                        | Steel/roofing/fitout                          | Delivery of prefab structure, lifting and installation, fitout, etc.  |
| W.015 |                        | landscaping                                   | Delivery of plants, tools, equipment.   |



**Table 13 Scenarios and Periods of Work**

| ID    | Location               | Scenario                                      | Hours of Work |                      |                      |                    | Indicative Start Date | Likely Duration <sup>4</sup> |
|-------|------------------------|---|---------------|----------------------|----------------------|--------------------|-----------------------|------------------------------|
|       |                        |   | Standard      | Out-of-Hours Work    |                      |                    |                       |                              |
|       |                        |   | Day           | Day OOH <sup>1</sup> | Evening <sup>2</sup> | Night <sup>3</sup> |                       |                              |
| W.001 | Sports Facility        | Earthworks -Noise Intensive                   | ✓             | -                    | -                    | -                  | Feb 24                | 11 months                    |
| W.002 |                        | Earthworks - Typical                          | ✓             | -                    | -                    | -                  |                       |                              |
| W.003 |                        | Piling  | ✓             | -                    | -                    | -                  |                       |                              |
| W.004 |                        | Concrete works                                | ✓             | -                    | -                    | -                  |                       |                              |
| W.005 |                        | Steel/roofing/fitout                          | ✓             | -                    | -                    | -                  |                       |                              |
| W.006 |                        | landscaping                                   | ✓             | -                    | -                    | -                  |                       |                              |
| W.007 |                        | Compound Operation                            | ✓             | -                    | -                    | -                  |                       |                              |
| W.008 | Multi use Sports Court | Earthworks – Noise Intensive                  | ✓             | -                    | -                    | -                  |                       |                              |
| W.009 |                        | Earthworks – Typical                          | ✓             | -                    | -                    | -                  |                       |                              |
| W.010 |                        | concrete works, construction of sports courts | ✓             | -                    | -                    | -                  |                       |                              |
| W.011 |                        | Landscaping                                   | ✓             | -                    | -                    | -                  |                       |                              |
| W.012 | Sports field           | install light columns                         | ✓             | -                    | -                    | -                  |                       |                              |
| W.013 | Toilet Building        | Concrete works                                | ✓             | -                    | -                    | -                  |                       |                              |
| W.014 |                        | Steel/roofing/fitout                          | ✓             | -                    | -                    | -                  |                       |                              |
| W.015 |                        | landscaping                                   | ✓             | -                    | -                    | -                  |                       |                              |

Note 1: Daytime out of hours is 7 am to 8 am on Saturday, and 8 am to 6 pm on Sunday and public holidays.

Note 2: Evening is 6 pm to 10 pm Mondays to Saturdays.

Note 3: Night is 10 pm to 7 am for Mondays to Saturdays and 6 pm to 8 am for Sundays and public holidays.

Note 4: Where night work is proposed, it would be limited to two consecutive nights, as per the OOHW protocol.

### 5.1.1 Modelling Scenarios and Equipment

The assessment uses ‘realistic worst-case’ scenarios to determine the impacts from the noisiest 15-minute period that is likely to occur for each work scenario, as required by the ICNG. Sound power levels (LW) for the construction equipment used in the modelling are listed in **Appendix B**.

## 5.2 Predicted Noise Levels

The following overview is based on the predicted impacts at the most affected receivers and is representative of the worst-case noise levels that are likely to occur during construction.

The assessment shows the predicted ‘mitigated’ impacts based on the exceedance of the noise management levels, as per the categories in **Table 14**. Recommendations for

mitigation and management are provided in **Section 7.0**.

**Table 14 Exceedance Bands and Impact Colouring**

| Subjective Classification | Exceedance of Noise Management Level |               | Subjective Classification | Impact Colouring |
|---------------------------|--------------------------------------|---------------|---------------------------|------------------|
|                           | Daytime                              | Out of Hours  |                           |                  |
| Negligible                | No exceedance                        | No exceedance | Negligible                |                  |
| Noticeable                | -                                    | 1 to 5 dB     | Noticeable                |                  |
| Clearly Audible           | 1 to 10 dB                           | 6 to 15 dB    | Clearly Audible           |                  |
| Moderately Intrusive      | 11 to 20 dB                          | 16 to 25 dB   | Moderately Intrusive      |                  |
| Highly Intrusive          | > 20 dB                              | > 25 dB       | Highly Intrusive          |                  |

A summary of the number of buildings where NML exceedances were predicted for the various work scenarios is shown in **Table 15**. Maps of the predicted worst-case noise impacts are presented in **Appendix C**. For most construction activities, it is expected that the construction noise levels would frequently be lower than predicted, as the noise levels presented in this report are based on each scenario occurring at the work zone boundary which is the closest point to each receiver.

The assessment presents the combined predicted noise impacts for each scenario. Meaning, the worst-case result at each receiver is considered from all potential work areas where each scenario is to be undertaken.

The assessment is generally considered conservative as the calculations assume several items of construction equipment are in use at the same time within individual scenarios. In reality, there would frequently be periods when construction noise levels are much lower than the worst-case levels predicted as well as times when no equipment is in use and no noise impacts occur.

**Table 15 Overview of NML Exceedances**

| ID    | Scenario                                      | Location               | Number of Receivers |                                   |                    |        |         |                   |        |        |         |          |        |
|-------|---|------------------------|---------------------|-----------------------------------|--------------------|--------|---------|-------------------|--------|--------|---------|----------|--------|
|       |   |                        | HNA <sup>1</sup>    | With NML Exceedances <sup>2</sup> |                    |        |         |                   |        |        |         |          |        |
|       |   |                        |                     | Standard Daytime                  | Out-of-Hours Works |        |         |                   |        |        |         |          |        |
|       |   |                        |                     |                                   | Night-time         |        |         | Sleep Disturbance |        |        |         |          |        |
|       |   |                        | 1-10 dB             | 11-20 dB                          | >20 dB             | 1-5 dB | 6-15 dB | 16-25 dB          | >25 dB | 1-5 dB | 6-15 dB | 16-25 dB | >25 dB |
| W.001 | Earthworks -Noise Intensive                   | Sports Facility        | 3                   | 74                                | 4                  | -      | -       | -                 | -      | -      | -       | -        | -      |
| W.002 | Earthworks -Typical                           |                        | -                   | 2                                 | -                  | -      | -       | -                 | -      | -      | -       | -        | -      |
| W.003 | Piling  |                        | -                   | 5                                 | -                  | -      | -       | -                 | -      | -      | -       | -        | -      |
| W.004 | Concrete works                                |                        | -                   | 4                                 | -                  | -      | -       | -                 | -      | -      | -       | -        | -      |
| W.005 | Steel/roofing/fitout                          |                        | -                   | 2                                 | -                  | -      | -       | -                 | -      | -      | -       | -        | -      |
| W.006 | landscaping                                   |                        | -                   | 2                                 | -                  | -      | -       | -                 | -      | -      | -       | -        | -      |
| W.007 | Compound Operation                            |                        | -                   | 7                                 | -                  | -      | -       | -                 | -      | -      | -       | -        | -      |
| W.008 | Earthworks – Noise Intensive                  | Multi use Sports Court | 21                  | 47                                | 28                 | -      | -       | -                 | -      | -      | -       | -        |        |
| W.009 | Earthworks – Typical                          |                        | -                   | 20                                | -                  | -      | -       | -                 | -      | -      | -       | -        |        |
| W.010 | concrete works, construction of sports courts |                        | -                   | 28                                | -                  | -      | -       | -                 | -      | -      | -       | -        |        |
| W.011 | Landscaping                                   |                        | -                   | 21                                | -                  | -      | -       | -                 | -      | -      | -       | -        |        |
| W.012 | install light columns                         | Sports field           | -                   | 2                                 | -                  | -      | -       | -                 | -      | -      | -       | -        |        |
| W.013 | Concrete works                                | Toilet Building        | -                   | 6                                 | -                  | -      | -       | -                 | -      | -      | -       | -        |        |
| W.014 | Steel/roofing/fitout                          |                        | -                   | 4                                 | -                  | -      | -       | -                 | -      | -      | -       | -        |        |
| W.015 | landscaping                                   |                        | -                   | 4                                 | -                  | -      | -       | -                 | -      | -      | -       | -        |        |

Note 1: Highly noise affected, based on ICNG definition (i.e. predicted LAeq(15minute) noise at residential receiver is 75 dBA or greater).

Note 2: Based on worst-case predicted noise levels



The assessment of the predicted worst-case noise levels shows:

- ‘Moderately intrusive’ impacts associated with the earthworks associated with the sports facility and the multiuse sports court are predicted at the nearest residential receivers due to the use of noise intensive equipment such as the rock breaker.
- When noise intensive equipment is not in use, the noise levels are expected to be much less.
- ‘Clearly audible’ impacts are predicted at nearby receivers surrounding the works.
- Up to 21 receivers are predicted to be ‘highly noise affected’ during noise intensive activities due to the use of the rock breaker that may be required at times.

All appropriate feasible and reasonable construction noise mitigation measures will be applied to work where exceedances of the NMLs are predicted. Construction noise mitigation measures are discussed in **Section 7** and **Appendix D**.

## 6.0 Vibration Assessment

The potential impacts during vibration intensive work have been assessed using the CNVG minimum working distances for cosmetic damage and human response shown in **Table 11**.

The assessment identifies structures which are within the minimum working distances based the construction scenarios with vibration intensive equipment as shown in **Table 16**.

**Table 16 Vibration Intensive Equipment**

| ID    | Scenario                           | Location                       | Rating/Description                          | Minimum Distance   |   |   |
|-------|------------------------------------|--------------------------------|---|--|---|---|
|       |                                    |                                |   | Cosmetic Damage<br>Residential<br>and Light<br>Commercial<br>(BS 7385) | Heritage<br>Items<br>(DIN 4150,<br>Group 3) | Human<br>Response<br>(NSW EPA<br>Guideline) |
| W.001 | Earthworks<br>– Noise<br>Intensive | Sports<br>Facility<br>Building | Vibratory Roller - >300 kN<br>(13–18 tonne) | 20 m   | 40 m  | 100 m                                       |
|       |                                    | Multi-use<br>Courts            | Excavator – Breaker (5t)                    | 2 m  | 5 m   | 7 m   |
| W.008 | Earthworks<br>– Noise<br>Intensive | Multi-use<br>Courts            | Vibratory Roller - >300 kN<br>(13–18 tonne) | 20 m   | 40 m  | 100 m                                       |
|       |                                    |                                | Excavator – Breaker (5t)                    | 2 m  | 5 m   | 7 m   |

Buildings within the minimum working distances are shown in **Figure 2**.

**Figure 2 Vibration Assessment**



In the event that additional works are undertaken which require the use of other items of plant identified in **Table 11**, a vibration impact assessment must be conducted prior to the commencement of works.

Construction mitigation and management measures are discussed further in **Section 7.0**.

### **Cosmetic Damage Assessment**

The above figure shows that one building near to the works for the proposed Sports Facility Building are likely to be within the minimum working distances for cosmetic damage and mitigation will be required to be considered due to use of the Vibratory Roller. Buildings in other parts of the study area are generally sufficiently distant to be outside the minimum distance.

### **Human Comfort Vibration Assessment**

Certain receivers in the study area are also within the human comfort minimum working distances and occupants of affected buildings may be able to perceive vibration impacts at times when vibration intensive equipment is in use. Where impacts are perceptible, they would likely only be apparent for relatively short durations when vibration intensive equipment is nearby.

### **Heritage Structures**

Heritage buildings within the project area can be found in the M4-M5 Link EIS.

## 7.0 Mitigation and Management Measures

Noise and vibration from the Project may be apparent at the nearest receivers at certain times during the Project. The Project will apply all feasible and reasonable mitigation measures to minimise the impacts.

**Appendix D** presents the noise and vibration mitigation measures to be implemented for the Project. The following best-practice measures shown in **Table 17** must be implemented where feasible and reasonable to minimise the potential impacts from the work.

**Table 17 Mitigation and Management Measures**

| Mitigation              | Description  |
|-------------------------|--|
| Contractor management   | Training will be provided to project personnel, including relevant sub-contractors, on noise and vibration requirements and the location of sensitive receivers during inductions and toolbox talks.   |
|                         | Delivery vehicles will be fitted with straps rather than chains for unloading, wherever possible.  |
|                         | Truck drivers will avoid compression braking in close proximity to residential receivers.  |
| Noise source mitigation | Use the minimum sized equipment necessary to complete the work and where possible. Note predicted noise levels are based on the Sound Power level data presented in <b>Appendix B</b>  |
|                         | Trucks and mobile plant will use broadband reversing alarms for all OOHV, where feasible and reasonable.   |
|                         | Shut down plant/machinery, including lighting towers, when not in operation.   |
|                         | Avoid dropping materials from a height and dampen or line metal trays, as necessary.   |
|                         | Ensure equipment is operated in the correct manner.  |
| Path Control            | Portable noise barriers will be used around particularly noisy equipment such as concrete saws and drilling, where feasible and reasonable.<br>This is of particular importance when undertaking works in close proximity to residential receivers during the night-time period.       |
|                         | Use existing obstacles/structures to shield sensitive receivers from noise such as noise walls; and consideration of site topography when siting plant.  |
|                         | Provide signage with a 24-hour contact number.   |
| Community consultation  | Where predicted noise levels are above the NMLs, implement additional mitigation measures as outlined in <b>Section 7.2</b> and presented in <b>Appendix D</b> .   |
|                         | For night-time works, noise intensive equipment including concrete saw and drilling/auger works should be restricted to occur before mid-night noting that drilling/Auger works is not anticipated to be greater than 1 hour per location.   |
|                         | Where there are complaints regarding noise, review and implement additional control measures, where feasible and reasonable.   |
| Monitoring              | Noise monitoring will be undertaken at the commencement of each new work activity and periodically throughout the construction period to verify the predicted noise levels. Exceedance of predicted levels will be managed in accordance with the Environmental Management Plan (EMP). |



| Mitigation | Description  |
|------------|--|
|            | Continuous vibration monitoring with alarms (ie audible and visible / SMS) will be undertaken at the nearest sensitive receivers (including heritage listed properties) whenever vibration generating activities need to take place inside the safe-working distances. |
|            | Conduct noise and/or vibration monitoring in response to any formal complaints received.   |

## 7.1 Standard Mitigation Measures

The CNVG contains a number of standard measures for mitigation and managing construction impacts on infrastructure projects. The measures are presented in **Appendix D** and should be applied where feasible and reasonable to minimise the impacts from the works as far as practicable.

## 7.2 Additional Mitigation Measures

The CNVG also details the Additional Mitigation Measures Matrix (AMMM) that are to be implemented, where the construction noise levels are predicted to be above the NMLs. The approach, guided by the AMMM, is primarily aimed at pro-active engagement with affected sensitive receivers rather than additional noise reducing mitigation. The AMMM applies to all receiver types where these receivers are in-use.

The types of additional mitigation measures are listed in **Table 18** and described in **Appendix D**. The AMMM for construction noise are identified in **Table 19**.

**Table 18 Additional Mitigation Measures**

| Mitigation / Management Measure | Abbreviation |
|---------------------------------|--------------|
| Alternative accommodation       | AA           |
| Verification                    | V            |
| Individual briefings            | IB           |
| Notifications                   | N            |
| Respite period 1                | R1           |
| Respite period 2                | R2           |
| Duration Respite                | DR           |
| Phone calls and emails          | PC           |
| Specific notification           | SN           |

**Table 19 CNVG Additional Mitigation Measures Matrix – Airborne Construction Noise**

| Predicted Airborne (L <sub>Aeq, 15min</sub> )<br>Noise Level at Receiver                                |               |               | Additional Mitigation Measures |
|---|---------------|---------------|--------------------------------|
| Perception  | dBA above RBL | dBA above NML | Type <sup>1</sup>              |
| <b>All hours</b>  |               |               |                                |
| 75 dBA or greater   |               |               | N, V, PC, RO                   |
| <b>Approved Hours: Mon - Fri (7am - 6pm), Sat (8am - 6pm), Sun/Pub Hol (Nil)</b>                        |               |               |                                |
| Noticeable  | 5 to <10      | 0             | -                              |
| Clearly Audible   | 10 to <20     | <10           | -                              |
| Moderately Intrusive  | 20 to 30      | 10 to 20      | N, V                           |
| Highly Intrusive  | > 30          | > 20          | N, V                           |
| <b>OOHW Period 1: Mon - Fri (6pm - 10pm), Sat (7am - 8am &amp; 6pm - 10pm), Sun/Pub Hol (8am - 6pm)</b> |               |               |                                |
| Noticeable  | 5 to <10      | < 5           | -                              |
| Clearly Audible   | 10 to <20     | 5 to <15      | N, R1, DR                      |
| Moderately Intrusive  | 20 to 30      | 15 to 25      | V, N, R1, DR                   |
| Highly Intrusive  | > 30          | > 25          | V, IB, N, R1, DR, PC, SN       |
| <b>OOHW Period 2: Mon - Fri (10pm - 7am), Sat (10pm - 8am), Sun/Pub Hol (6pm - 7am)</b>                 |               |               |                                |
| Noticeable  | 5 to <10      | < 5           | N                              |
| Clearly Audible   | 10 to <20     | 5 to <15      | V, N, R2, DR                   |
| Moderately Intrusive  | 20 to 30      | 15 to 25      | V, IB, N, PC, SN, R2, DR       |
| Highly Intrusive  | > 30          | > 25          | AA, V, IB, N, PC, SN, R2, DR   |

Note 1 NML = Noise Management Level, HA = Highly Affected (>75 dBA – applies to residences only).

## 8.0 Conclusion and Recommendations

Noise emissions from the Project have been predicted to the surrounding receivers. Noise levels are expected to exceed the NMLs at the closest receivers surrounding work areas for some activities.

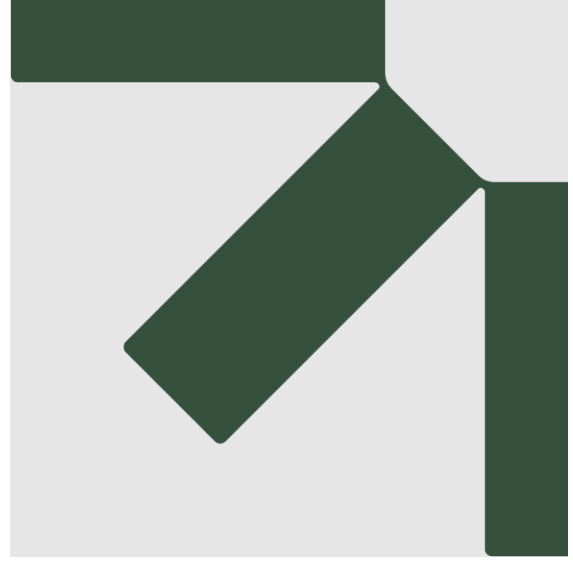
Where noise intensive work are proposed to occur, the closest receivers are predicted to exceed the NML by up to 20 dB at up to 28 locations, resulting in 'moderately intrusive' noise levels.

Where vibration intensive activities are proposed to occur, a number of properties have the potential to be within the safe working distances as shown in **Figure 2**

A number of mitigation and management measures have been recommended. Where feasible and reasonable these must be applied to the Project to control and minimise the impacts during construction as far as practicable.

Recommendations during commencement of each work scenario:

- Select plant and equipment which is equivalent or quieter than that adopted in the assessment.
- Implement any additional mitigation measures as detailed in the Environmental Management Plan (EMP).
- Undertake noise and vibration monitoring during work to confirm impacts.
- Appropriate information should be provided to the nearby receivers to detail the expected duration and timing of works as per the EMP.



# Appendix A Acoustic Terminology

## Rozelle Parklands Enhancements

### Construction Noise and Vibration Impact Statement

Transport for NSW

SLR Project No.: 610.031535.00001

11 January 2024

## Sound Level or Noise Level

The terms 'sound' and 'noise' are almost interchangeable, except that 'noise' often refers to unwanted sound.

Sound (or noise) consists of minute fluctuations in atmospheric pressure. The human ear responds to changes in sound pressure over a very wide range with the loudest sound pressure to which the human ear can respond being ten million times greater than the softest. The decibel (abbreviated as dB) scale reduces this ratio to a more manageable size by the use of logarithms.

The symbols SPL, L or LP are commonly used to represent Sound Pressure Level. The symbol LA represents A-weighted Sound Pressure Level. The standard reference unit for Sound Pressure Levels expressed in decibels is  $2 \times 10^{-5}$  Pa.

### 'A' Weighted Sound Pressure Level

The overall level of a sound is usually expressed in terms of dBA, which is measured using a sound level meter with an 'A-weighting' filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.

People's hearing is most sensitive to sounds at mid frequencies (500 Hz to 4,000 Hz), and less sensitive at lower and higher frequencies. Different sources having the same dBA level generally sound about equally loud.

A change of 1 dB or 2 dB in the level of a sound is difficult for most people to detect, whilst a 3 dB to 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change corresponds to an approximate doubling or halving in loudness. The table below lists examples of typical noise levels.

| Sound Pressure Level (dBA) | Typical Source                             | Subjective Evaluation |
|----------------------------|--|-----------------------|
| 130                        | Threshold of pain                          | Intolerable           |
| 120                        | Heavy rock concert                         | Extremely noisy       |
| 110                        | Grinding on steel                          |                       |
| 100                        | Loud car horn at 3 m                       | Very noisy            |
| 90                         | Construction site with pneumatic hammering |                       |
| 80                         | Kerbside of busy street                    | Loud                  |
| 70                         | Loud radio or television                   |                       |
| 60                         | Department store                           | Moderate to quiet     |
| 50                         | General Office                             |                       |
| 40                         | Inside private office                      | Quiet to very quiet   |
| 30                         | Inside bedroom                             |                       |
| 20                         | Recording studio                           | Almost silent         |

Other weightings (eg B, C and D) are less commonly used than A-weighting. Sound Levels measured without any weighting are referred to as 'linear', and the units are expressed as dB(lin) or dB.

### Sound Power Level

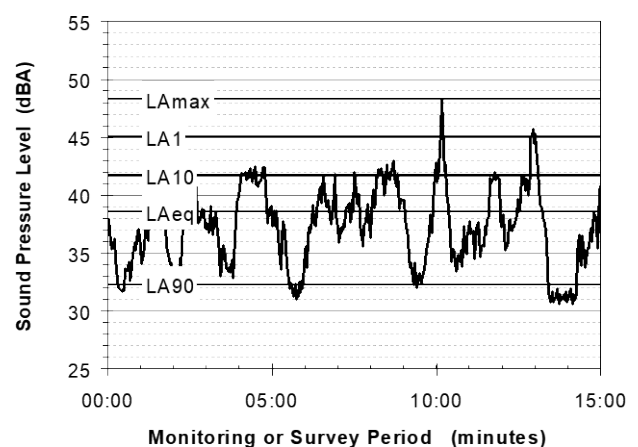
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit  $10^{-12}$  W.

The relationship between Sound Power and Sound Pressure is similar to the effect of an electric radiator, which is characterised by a power rating but has an effect on the surrounding environment that can be measured in terms of a different parameter, temperature.

### Statistical Noise Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels LAN, where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the LA1 is the noise level exceeded for 1% of the time, LA10 the noise exceeded for 10% of the time, and so on.

The following figure presents a hypothetical 15 minute noise survey, illustrating various common statistical indices of interest.



Of particular relevance, are:

LA1 The noise level exceeded for 1% of the 15 minute interval.

LA10 The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.

LA90 The noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level.

LAeq The A-weighted equivalent noise level (basically, the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.

### Frequency Analysis

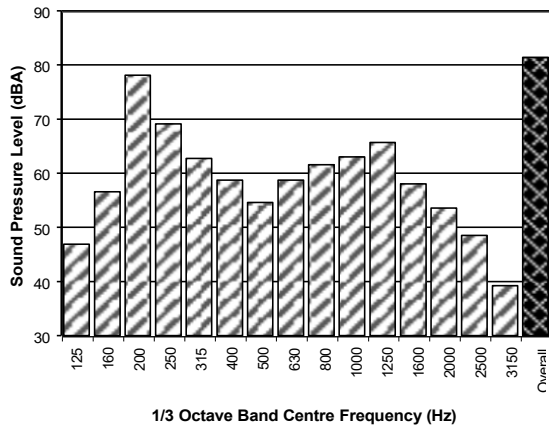
Frequency analysis is the process used to examine the tones (or frequency components) which make up the overall noise or vibration signal.

The units for frequency are Hertz (Hz), which represent the number of cycles per second.

Frequency analysis can be in:

- Octave bands (where the centre frequency and width of each band is double the previous band)
- 1/3 octave bands (three bands in each octave band)
- Narrow band (where the spectrum is divided into 400 or more bands of equal width)

The following figure shows a 1/3 octave band frequency analysis where the noise is dominated by the 200 Hz band. Note that the indicated level of each individual band is less than the overall level, which is the logarithmic sum of the bands.



### Annoying Noise (Special Audible Characteristics)

A louder noise will generally be more annoying to nearby receivers than a quieter one. However, noise is often also found to be more annoying and result in larger impacts where the following characteristics are apparent:

- **Tonality** - tonal noise contains one or more prominent tones (ie differences in distinct frequency components between adjoining octave or 1/3 octave bands), and is normally regarded as more annoying than 'broad band' noise.
- **Impulsiveness** - an impulsive noise is characterised by one or more short sharp peaks in the time domain, such as occurs during hammering.
- **Intermittency** - intermittent noise varies in level with the change in level being clearly audible. An example would include mechanical plant cycling on and off.
- **Low Frequency Noise** - low frequency noise contains significant energy in the lower frequency bands, which are typically taken to be in the 10 to 160 Hz region.

### Vibration

Vibration may be defined as cyclic or transient motion. This motion can be measured in terms of its displacement, velocity or acceleration. Most assessments of human response to vibration or the risk of damage to buildings use measurements of vibration velocity. These may be expressed in terms of 'peak' velocity or 'rms' velocity.

The former is the maximum instantaneous velocity, without any averaging, and is sometimes referred to as 'peak particle velocity', or PPV. The latter incorporates 'root mean squared' averaging over some defined time period.

Vibration measurements may be carried out in a single axis or alternatively as triaxial measurements (ie vertical, longitudinal and transverse).

The common units for velocity are millimetres per second (mm/s). As with noise, decibel units can also be used, in which case the reference level should always be stated. A vibration level  $V$ , expressed in mm/s can be converted to decibels by the formula  $20 \log (V/V_0)$ , where  $V_0$  is the reference level ( $10^{-9}$  m/s). Care is required in this regard, as other reference levels may be used.

### Human Perception of Vibration

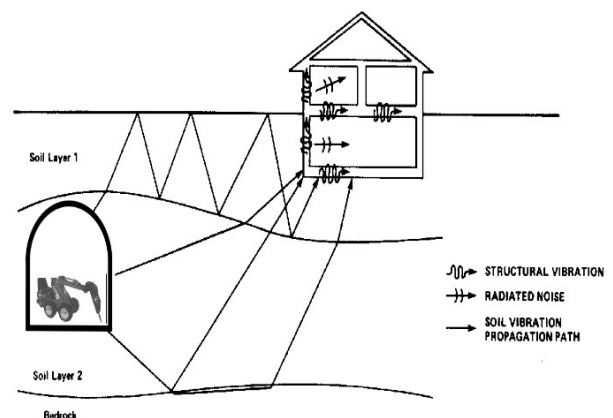
People are able to 'feel' vibration at levels lower than those required to cause even superficial damage to the most susceptible classes of building (even though they may not be disturbed by the motion). An individual's perception of motion or response to vibration depends very strongly on previous experience and expectations, and on other connotations associated with the perceived source of the vibration. For example, the vibration that a person responds to as 'normal' in a car, bus or train is considerably higher than what is perceived as 'normal' in a shop, office or dwelling.

### Ground-borne Noise, Structure-borne Noise and Regenerated Noise

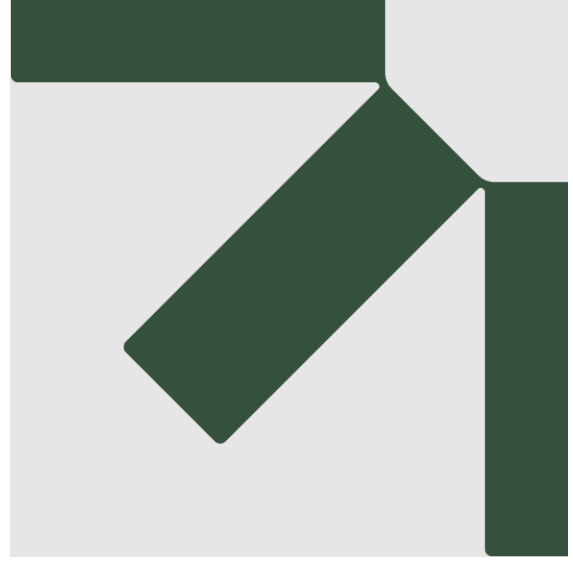
Noise that propagates through a structure as vibration and is radiated by vibrating wall and floor surfaces is termed 'structure-borne noise', 'ground-borne noise' or 'regenerated noise'. This noise originates as vibration and propagates between the source and receiver through the ground and/or building structural elements, rather than through the air.

Typical sources of ground-borne or structure-borne noise include tunnelling works, underground railways, excavation plant (eg rockbreakers), and building services plant (eg fans, compressors and generators).

The following figure presents an example of the various paths by which vibration and ground-borne noise may be transmitted between a source and receiver for construction activities occurring within a tunnel.



The term 'regenerated noise' is also used in other instances where energy is converted to noise away from the primary source. One example would be a fan blowing air through a discharge grill. The fan is the energy source and primary noise source. Additional noise may be created by the aerodynamic effect of the discharge grill in the airstream. This secondary noise is referred to as regenerated noise.



# **Appendix B    Construction Equipment**

## **Rozelle Parklands Enhancements**

### **Construction Noise and Vibration Impact Statement**

**Transport for NSW**

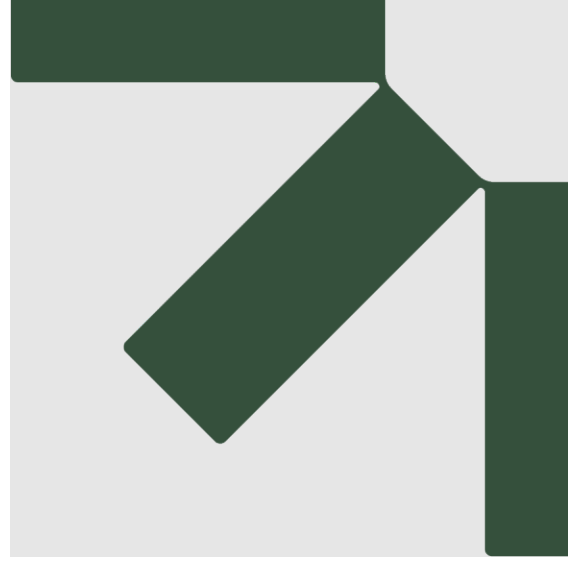
SLR Project No.: 610.031535.00001

11 January 2024

| Equipment Item                  |                            | Concrete Mixer Truck                   | Excavator (Breaker - 10t exc) <sup>1</sup> | Excavator (10 tonne) | Excavator (20 tonne) | Hand Tools (electric) | Mobile Crane - Franna | Mobile Crane (100 tonne) | Piling - Bored | Roller - Vibratory (12 tonne) <sup>1</sup> | Scissor Lift | Suction Truck | Truck | Vehicle (4WD) | Overall level |     |
|---------------------------------|----------------------------|--|--|----------------------|----------------------|-----------------------|-----------------------|--------------------------|----------------|--|--------------|---------------|-------|---------------|---------------|-----|
|                                 |                            | SWL LAeq(15min)                        | 109  | 120                  | 100                  | 100                   | 96                    | 98                       | 100            | 111  | 109          | 92            | 109   | 107           |               | 103 |
| Estimated on-time in any 15-min |                            | 7.5                                    | 7.5  | 7.5                  | 7.5                  | 15                    | 7.5                   | 15                       | 7.5            | 15   | 15           | 15            | 5     | 5             | fd            |     |
| Ref                             | Scenario                   | Activity                               |  |                      |                      |                       |                       |                          |                |  |              |               |       |               |               |     |
| W.001                           | Sports Facilities Building | Earthworks -Noise Intensive            |  | X                    | X                    |                       |                       |                          |                | X  |              | X             | X     |               | 118           |     |
| W.002                           |                            | Earthworks -Typical                    |  |                      |                      | X                     |                       |                          |                |  |              |               |       | X             |               | 103 |
| W.003                           |                            | Piling                                 |  |                      |                      |                       |                       |                          |                | X  |              |               |       | X             |               | 109 |
| W.004                           |                            | Concrete works                         | X  |                      |                      |                       |                       |                          |                |  |              |               |       | X             |               | 108 |
| W.005                           |                            | Steel/roofing/fitout                   |  |                      |                      |                       | X                     | X                        |                |  |              | X             |       | X             |               | 104 |
| W.006                           |                            | landscaping                            |  |                      |                      |                       |                       |                          |                |  |              |               |       | X             | X             | 104 |
| W.007                           | Compound                   | Compound Operation                     |  |                      |                      | X                     |                       |                          |                |  |              |               | X     | X             | 106           |     |
| W.008                           | Multi use sports court     | Earthworks - Noise Intensive           |  | X                    | X                    |                       |                       |                          |                | X  |              | X             | X     |               | 119           |     |
| W.009                           |                            | Earthworks - Typical                   |  |                      |                      | X                     |                       |                          |                |  |              |               | X     |               | 103           |     |
| W.010                           |                            | concrete works, construction of courts | X  |                      |                      |                       | X                     |                          |                |  |              |               | X     |               | 108           |     |
| W.011                           |                            | Landscaping                            |  |                      |                      |                       |                       |                          |                |  |              |               | X     | X             | 104           |     |
| W.012                           | Sports Field               | install light columns                  |  |                      |                      |                       | X                     | X                        |                |  |              |               | X     |               | 105           |     |
| W.013                           | Toilet Block               | Concrete works                         | X  |                      |                      |                       |                       |                          |                |  |              |               | X     |               | 108           |     |
| W.014                           |                            | Steel/roofing/fitout                   |  |                      |                      |                       | X                     | X                        |                |  | X            |               | X     |               | 104           |     |
| W.015                           |                            | landscaping                            |  |                      |                      |                       |                       |                          |                |  |              |               | X     | X             | 104           |     |







# Appendix C Noise Impact Maps

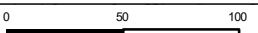
## Rozelle Parklands Enhancements

### Construction Noise and Vibration Impact Statement

Transport for NSW

SLR Project No.: 610.031535.00001

11 January 2024



Scale: 1:3,250 at A4

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Coordinate System: GDA 1994 MGA Zone 56

Project Number: 610.031535

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APPENDIX



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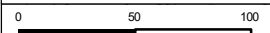
- NCA
- Sports Facility Building
- Study Area

**Receivers**

- Residential/Commercial
- Other Sensitive Receivers
- Outdoor Areas

**Noise Impact**

- Clearly Audible
- Moderately Intrusive
- Highly Intrusive



Scale: 1:3,250 at A4

Date Drawn: 14-Dec-2023



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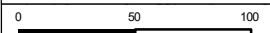
- NCA
- Compound
- Study Area

**Receivers**

- Residential/Commercial
- Other Sensitive Receivers
- Outdoor Areas

**Noise Impact**

- Clearly Audible
- Moderately Intrusive
- Highly Intrusive



Scale: 1:3,250 at A4

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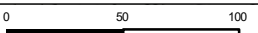
- NCA
- Truck along Access Route
- Multi-use Courts
- Study Area

**Receivers**

- Residential/Commercial
- Other Sensitive Receivers
- Outdoor Areas

**Noise Impact**

- Clearly Audible
- Moderately Intrusive
- Highly Intrusive



Scale: 1:3,250 at A4

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Coordinate System: GDA 1994 MGA Zone 56

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APPENDIX



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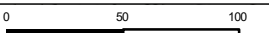
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- Multi-use Courts
- Study Area

**Receivers**

- Residential/Commercial
- Other Sensitive Receivers
- Outdoor Areas

**Noise Impact**

- Clearly Audible
- Moderately Intrusive
- Highly Intrusive



Scale: 1:3,250 at A4

Date Drawn: 14-Dec-2023



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Coordinate System: GDA 1994 MGA Zone 56

Project Number: 610.031535

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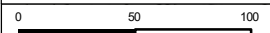
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**Receivers**

- Residential/Commercial
- Other Sensitive Receivers
- Outdoor Areas

**Noise Impact**

- Clearly Audible
- Moderately Intrusive
- Highly Intrusive



Scale: 1:3,250 at A4

Date Drawn: 14-Dec-2023



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Project Number: 610.031535

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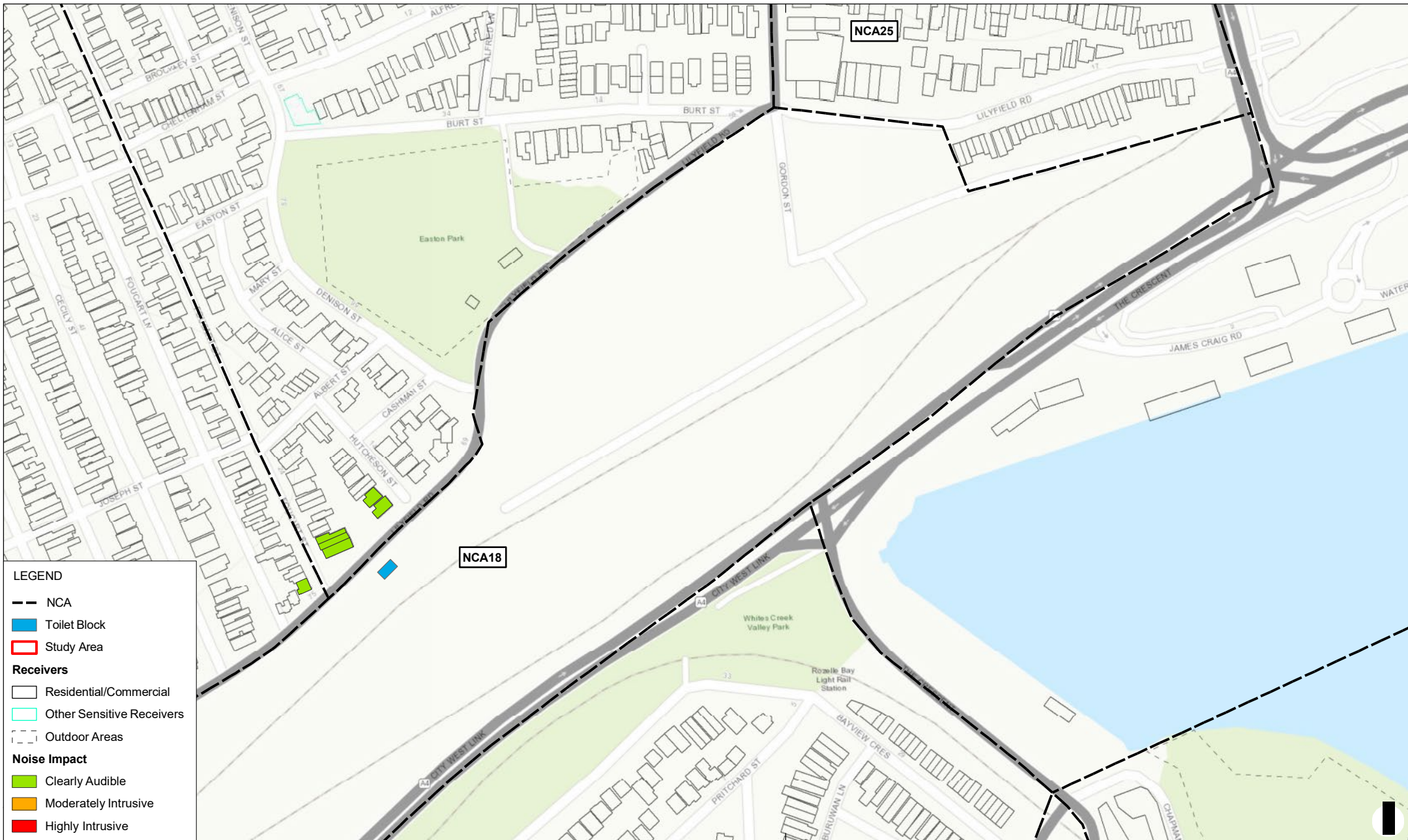
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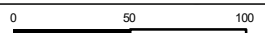
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LEGEND

- NCA
- Toilet Block
- Study Area
- Receivers**
- Residential/Commercial
- Other Sensitive Receivers
- Outdoor Areas
- Noise Impact**
- Clearly Audible
- Moderately Intrusive
- Highly Intrusive



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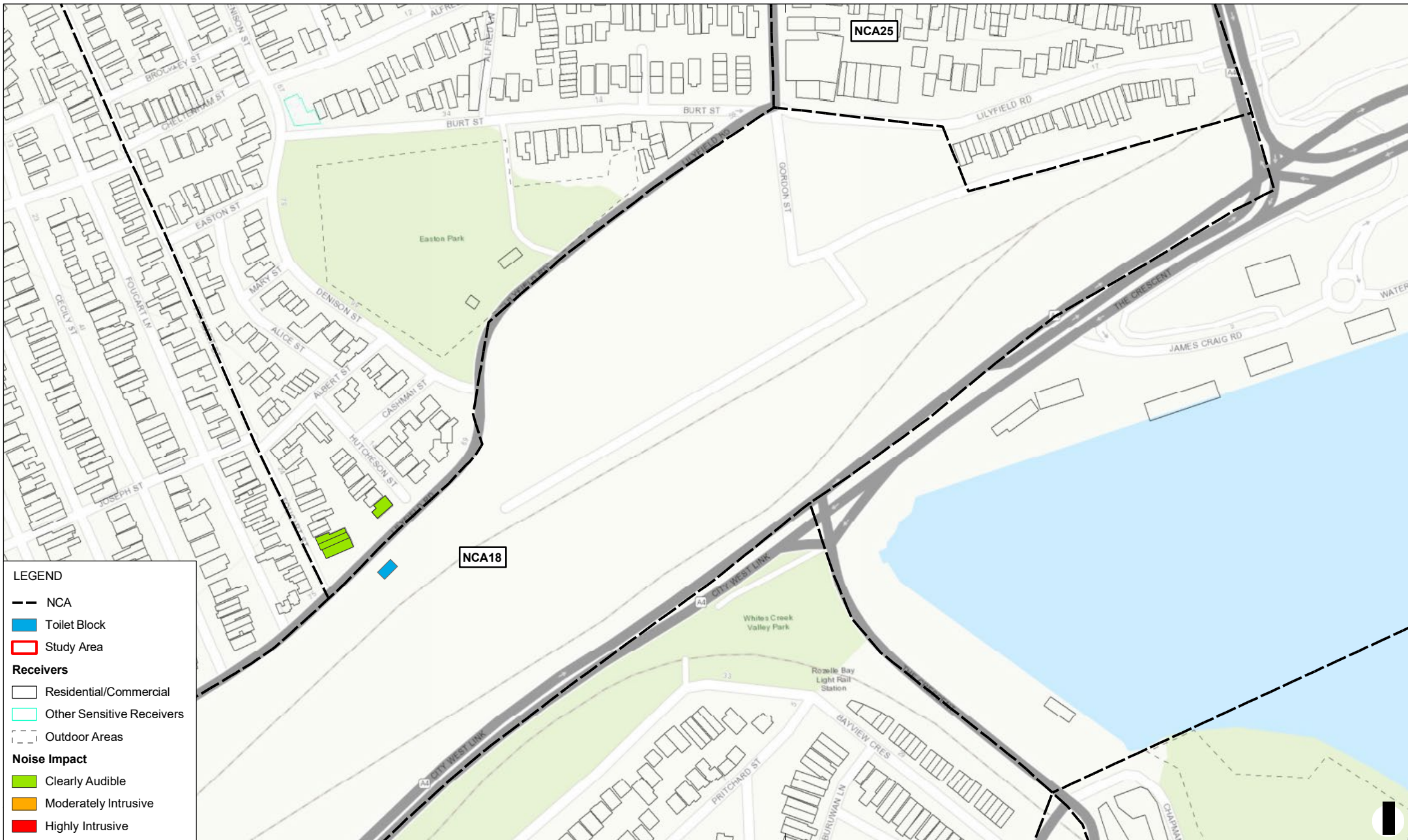
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- Noise Impact**
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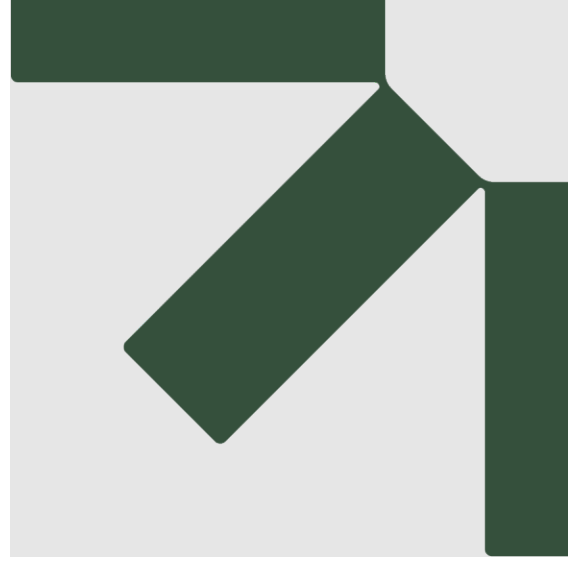


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# Appendix D Mitigation Measures

## Rozelle Parklands Enhancements

### Construction Noise and Vibration Impact Statement

Transport for NSW

SLR Project No.: 610.031535.00001

11 January 2024

## CNVG Standard Mitigation and Management Measures

| Action Required  | Applies To                                       | Details  |
|--|--|--|
| <b>Management measures</b>   |  |  |
| Implementation of any project specific mitigation measures required. | Airborne noise                                   | Implementation of any project specific mitigation measures required.   |
| Implement community consultation or notification measures.           | Airborne noise<br>Ground-borne noise & vibration | Notification detailing work activities, dates and hours, impacts and mitigation measures, indication of work schedule over the night time period, any operational noise benefits from the works (where applicable) and contact telephone number.<br>Notification should be a minimum of 7 calendar days prior to the start of works. For projects other than maintenance works more advanced consultation or notification may be required. Please contact Roads and Maritime Communication and Stakeholder Engagement for guidance.<br>Website (If required)<br>Contact telephone number for community<br>Email distribution list (if required)<br>Community drop in session (if required by approval conditions). |
| Site inductions  | Airborne noise<br>Ground-borne noise & vibration | All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include: <ul style="list-style-type: none"> <li>all project specific and relevant standard noise and vibration mitigation measures</li> <li>relevant licence and approval conditions</li> <li>permissible hours of work</li> <li>any limitations on high noise generating activities</li> <li>location of nearest sensitive receivers</li> <li>construction employee parking areas</li> <li>designated loading/unloading areas and procedures</li> <li>site opening/closing times (including deliveries)</li> <li>environmental incident procedures.</li> </ul>                               |
| Behavioural practices  | Airborne noise                                   | No swearing or unnecessary shouting or loud stereos/radios on site.<br>No dropping of materials from height, throwing of metal items and slamming of doors.  |
| Verification   | Airborne noise<br>Ground-borne noise & vibration | Where specified under Appendix C of the CNVG a noise verification program is to be carried out for the duration of the works in accordance with the Construction Noise and Vibration Management Plan and any approval and licence conditions.  |
| Attended vibration measurements                                      | Ground-borne vibration                           | Where required attended vibration measurements should be undertaken at the commencement of vibration generating activities to confirm that vibration levels are within the acceptable range to prevent cosmetic building damage.   |

| Action Required   | Applies To                                       | Details  |
|---|--|--|
| Update Construction Environmental Management Plans                    | Airborne noise<br>Ground-borne noise & vibration | The CEMP must be regularly updated to account for changes in noise and vibration management issues and strategies.   |
| Building condition surveys  | Vibration<br>Blasting                            | Undertake building dilapidation surveys on all buildings located within the buffer zone prior to commencement of activities with the potential to cause property damage  |
| <b>Source controls</b>  |  |  |
| Construction hours and scheduling                                     | Airborne noise<br>Ground-borne noise & vibration | Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods.  |
| Construction respite period during normal hours and out-of-hours work | Ground-borne noise & vibration<br>Airborne noise | See Appendix C of the CNVG for more details on the following respite measures: <ul style="list-style-type: none"> <li>• Respite Offers (RO)</li> <li>• Respite Period 1 (R1)</li> <li>• Respite Period 2 (R2)</li> <li>• Duration Respite (DR)</li> </ul>  |
| Equipment selection.  | Airborne noise<br>Ground-borne noise & vibration | Use quieter and less vibration emitting construction methods where feasible and reasonable.<br>For example, when piling is required, bored piles rather than impact-driven piles will minimise noise and vibration impacts. Similarly, diaphragm wall construction techniques, in lieu of sheet piling, will have significant noise and vibration benefits.<br>Ensure plant including the silencer is well maintained. |
| Plant noise levels.   | Airborne-noise                                   | The noise levels of plant and equipment must have operating Sound Power or Sound Pressure Levels compliant with the criteria in Appendix H of the CNVG.<br>Implement a noise monitoring audit program to ensure equipment remains within the more stringent of the manufacturers specifications or Appendix H of the CNVG.   |
| Rental plant and equipment.   | Airborne-noise                                   | The noise levels of plant and equipment items are to be considered in rental decisions and in any case cannot be used on site unless compliant with the criteria in Table 2 of the CNVG.   |
| Use and siting of plant.  | Airborne-noise                                   | The offset distance between noisy plant and adjacent sensitive receivers is to be maximised.<br>Plant used intermittently to be throttled down or shut down.<br>Noise-emitting plant to be directed away from sensitive receivers.<br>Only have necessary equipment on site.   |

| Action Required  | Applies To                               | Details   |
|--|--|---|
| Plan worksites and activities to minimise noise and vibration.             | Airborne noise<br>Ground-borne vibration | <p>Locate compounds away from sensitive receivers and discourage access from local roads.</p> <p>Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.</p> <p>Where additional activities or plant may only result in a marginal noise increase and speed up works, consider limiting duration of impact by concentrating noisy activities at one location and move to another as quickly as possible.</p> <p>Very noise activities should be scheduled for normal working hours. If the work can not be undertaken during the day, it should be completed before 11:00pm.</p> <p>Where practicable, work should be scheduled to avoid major student examination periods when students are studying for examinations such as before or during Higher School Certificate and at the end of higher education semesters.</p> <p>If programmed night work is postponed the work should be re-programmed and the approaches in this guideline apply again.</p> |
| Reduced equipment power  | Airborne noise<br>Ground-borne vibration | Use only the necessary size and power.  |
| Non-tonal and ambient sensitive reversing alarms                           | Airborne noise                           | <p>Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.</p> <p>Consider the use of ambient sensitive alarms that adjust output relative to the ambient noise level.</p>   |
| Minimise disturbance arising from delivery of goods to construction sites. | Airborne noise                           | <p>Loading and unloading of materials/deliveries is to occur as far as possible from sensitive receivers.</p> <p>Select site access points and roads as far as possible away from sensitive receivers.</p> <p>Dedicated loading/unloading areas to be shielded if close to sensitive receivers.</p> <p>Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible.</p> <p>Avoid or minimise these out of hours movements where possible.</p>  |
| Engine compression brakes  | Construction vehicles                    | <p>Limit the use of engine compression brakes at night and in residential areas.</p> <p>Ensure vehicles are fitted with a maintained Original Equipment Manufacturer exhaust silencer or a silencer that complies with the National Transport Commission's 'In-service test procedure' and standard.</p>  |
| <b>Path controls</b>   |  |   |

|   |                |  |
|---|----------------|--|
| Shield stationary noise sources such as pumps, compressors, fans etc. | Airborne noise | Stationary noise sources should be enclosed or shielded where feasible and reasonable whilst ensuring that the occupational health and safety of workers is maintained. Appendix D of AS 2436:2010 lists materials suitable for shielding. |
|---|----------------|--|

| Action Required                                    | Applies To                               | Details  |
|--|--|--|
| Shield sensitive receivers from noisy activities.  | Airborne noise                           | Use structures to shield residential receivers from noise such as site shed placement; earth bunds; fencing; erection of operational stage noise barriers (where practicable) and consideration of site topography when siting plant.          |
| <b>Receptor control</b>                            |  |  |
| Structural surveys and vibration monitoring        | Ground-borne vibration                   | Pre-construction surveys of the structural integrity of vibration sensitive buildings may be warranted.<br>At locations where there are high-risk receptors, vibration monitoring should be conducted during the activities causing vibration. |
| See Appendix C of the CNVG for additional measures | Airborne noise<br>Ground-borne vibration | In some instances additional mitigation measures may be required.  |

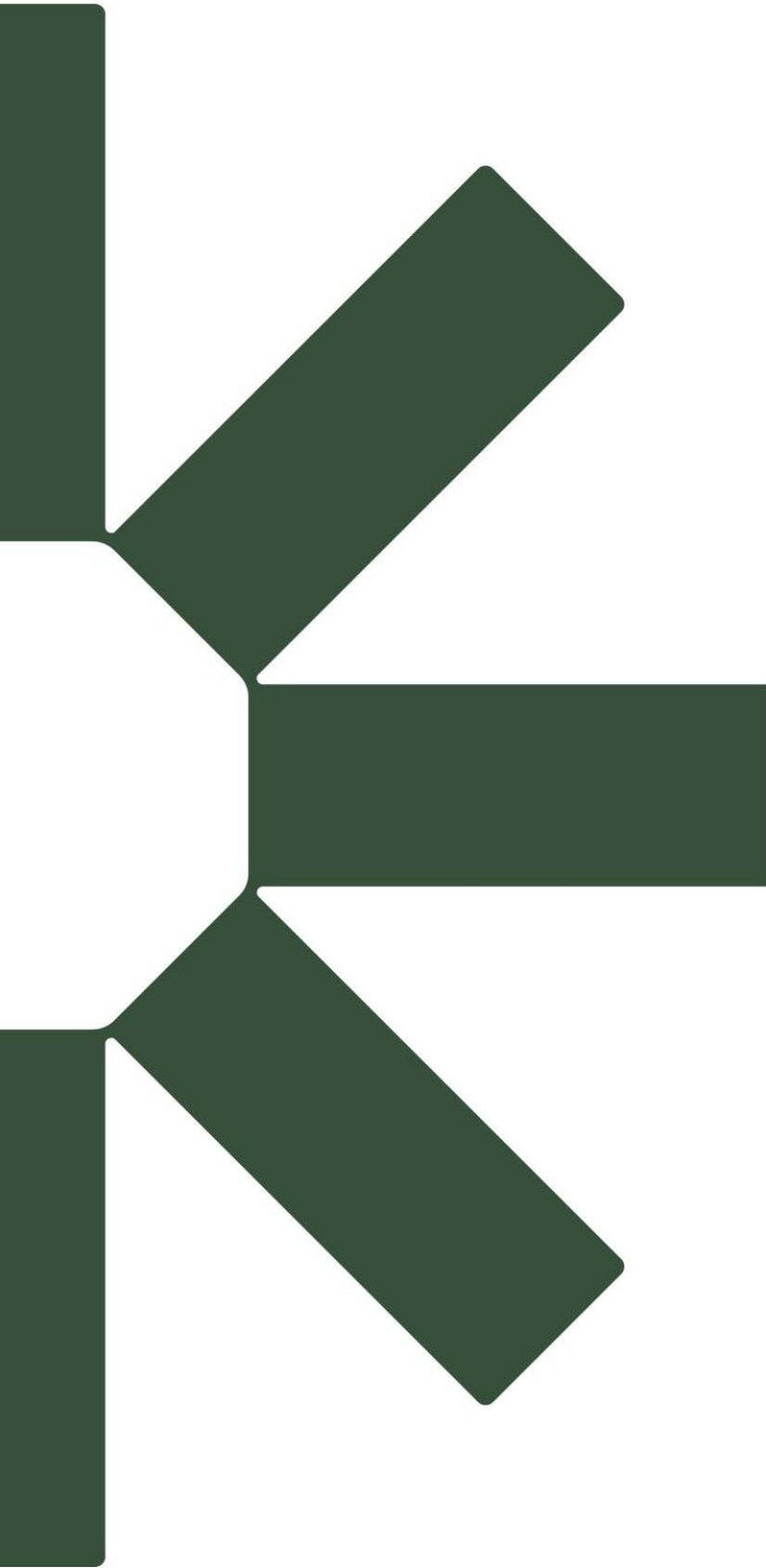
### CNVG Additional Mitigation Measures

| Additional Mitigation Measure               | Description  |
|---|--|
| Notification (letterbox drop or equivalent) | Advanced warning of works and potential disruptions can assist in reducing the impact on the community. The notification may consist of a letterbox drop (or equivalent) detailing work activities, time periods over which these will occur, impacts and mitigation measures. Notification should be a minimum of five working days prior to the start of works.  |
| Specific notifications (SN)                 | Specific notifications are letterbox dropped (or equivalent) to identified stakeholders no later than seven calendar days ahead of construction activities that are likely to exceed the noise objectives. The specific notification provides additional information when relevant and informative to more highly affected receivers than covered in general letterbox drops.  |
| Phone calls (PC)                            | Phone calls detailing relevant information made to affected stakeholders within seven calendar days of proposed work. Phone calls provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and specific needs.   |
| Individual briefings (IB)                   | Individual briefings are used to inform stakeholders about the impacts of high noise activities and mitigation measures that will be implemented. Project representatives would visit identified stakeholders at least 48 hours ahead of potentially disturbing construction activities. Individual briefings provide affected stakeholders with personalised contact and tailored advice, with the opportunity to comment on the project. |

|                     |  |
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| Respite Offers (RO) | <p>Respite Offers should be considered where there are high noise and vibration generating activities near receivers. As a guide work should be carried out in continuous blocks that do not exceed three hours each, with a minimum respite period of one hour between each block. The actual duration of each block of work and respite should be flexible to accommodate the usage of and amenity at nearby receivers.</p> <p>The purpose of such an offer is to provide residents with respite from an ongoing impact. This measure is evaluated on a project-by-project basis, and may not be applicable to all projects.</p> |
|---------------------|--|



| Additional Mitigation Measure  | Description  |
|--------------------------------|--|
| Respite Period 1 (R1)          | Out of hours construction noise in 'out of hours period 1' shall be limited to no more than three consecutive evenings per week except where there is a Duration Respite. For night work these periods of work should be separated by not less than one week and no more than six evenings per month.  |
| Respite Period 2 (R2)          | Night time construction noise in 'out of hours period 2' shall be limited to two consecutive nights except for where there is a Duration Respite. For night work these periods of work should be separated by not less than one week and six nights per month. Where possible, high noise generating works shall be completed before 11pm.   |
| Duration Respite (DR)          | <p>Respite offers and respite periods 1 and 2 may be counterproductive in reducing the impact on the community for longer duration projects. In this instance and where it can be strongly justified it may be beneficial to increase the work duration, number of evenings or nights worked through Duration Respite so that the project can be completed more quickly.</p> <p>The project team should engage with the community where noise levels are expected to exceed the NML to demonstrate support for Duration Respite.</p> |
| Alternative Accommodation (AA) | Alternative accommodation may be offered to residents living in close proximity to construction works that are likely to experience highly intrusive noise levels. The specifics of the offer should be identified on a project-by-project basis. Additional aspects for consideration shall include whether the highly intrusive activities occur throughout the night or before midnight.  |
| Verification (V)               | Verification of construction noise and vibration levels should occur to ensure the actual impacts are consistent with the predicted levels. Appendix F of the CNVG contains further details about verification of Noise and Vibration levels as part of routine checks of noise levels or following reasonable complaints.   |



**Appendix A7 – Construction Noise and  
Vibration Impact Statement 18 February  
2025**



# Construction Noise and Vibration Impact Assessment

## Rozelle Interchange Parklands Facilities Enhancement – Sewer Works

### Ford Civil

1a Duncan Street  
Arncliffe NSW 2205

Prepared by:

**SLR Consulting Australia**

SLR Project No.: 630.031878.00001

Client Reference No.: R03

18 February 2025

Revision: v1.0

## Revision Record

| Revision | Date             | Prepared By      | Checked By       | Authorised By    |
|----------|------------------|------------------|------------------|------------------|
| v1.0     | 18 February 2025 | Patrick Marshall | Martin Davenport | Martin Davenport |
|          |                  |                  |                  |                  |
|          |                  |                  |                  |                  |
|          |                  |                  |                  |                  |
|          |                  |                  |                  |                  |

## Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Ford Civil (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



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## Appendices

**Appendix A Acoustic Terminology**

**Appendix B Glossary of CNVG Mitigation Measures**



## 1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Ford Civil to prepare a construction noise and vibration impact assessment (CNVIA) for the proposed Exeloo sewer connection on Lillyfield Road (the Project) as part of the wider Rozelle Interchange Parklands Facilities Enhancement project.

An explanation of the specialist acoustic terminology used in this report is provided in **Appendix A**.

## 2.0 Assessment Criteria

### 2.1 Noise Management Levels

The residential Noise Management Levels (NMLs) for Noise Catchment Areas (NCAs) in proximity to the Project were derived in the initial construction noise and vibration impact statement (CNVIS) prepared by SLR (refer SRL report 610.031535.00001-R01-V1.0-20240111 dated 11 January 2024). The NMLs are summarised in **Table 1**. The NCAs and representative noise monitoring locations are provided in **Figure 1**.

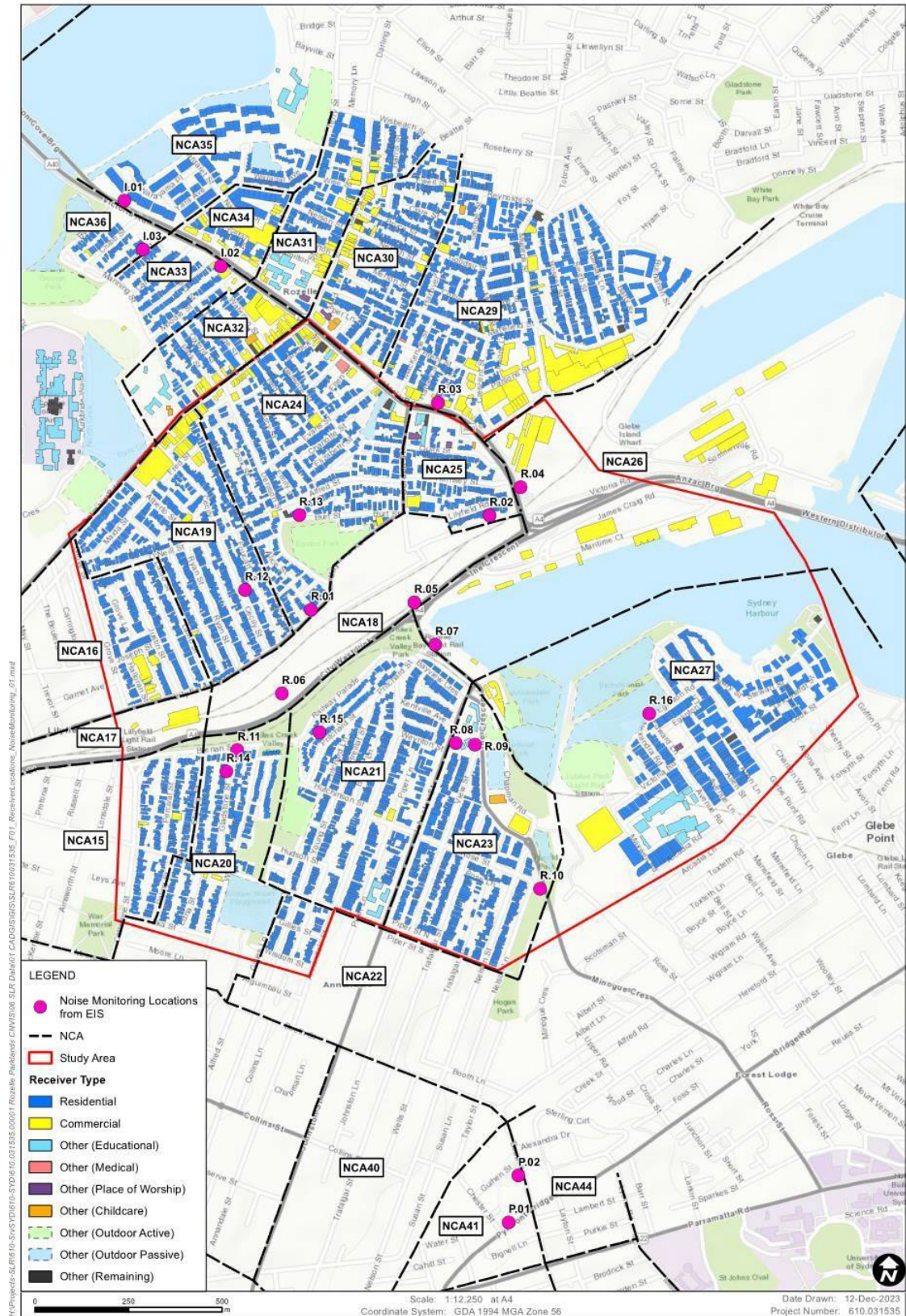
**Table 1 Residential NMLs**

| NCA   | Representative Background Monitoring Location | Noise Management Level (dBA) |                       |
|-------|---|------------------------------|-----------------------|
|       |   | Standard Daytime (RBL+10dB)  | Highly Noise Affected |
| NCA15 | R.14  | 54                           | 75                    |
| NCA16 | R.01  | 64                           | 75                    |
| NCA19 | R.01  | 64                           | 75                    |
| NCA20 | R.14  | 54                           | 75                    |
| NCA21 | R.15  | 58                           | 75                    |
| NCA22 | R.15  | 58                           | 75                    |
| NCA23 | R.09  | 59                           | 75                    |
| NCA24 | R.01  | 64                           | 75                    |
| NCA25 | R.02  | 61                           | 75                    |
| NCA27 | R.16  | 59                           | 75                    |





**Figure 1 NCA, Receiver Classifications and Noise Monitoring Locations**



## 2.2 Construction Vibration Guidelines

The effects of vibration from construction work can be divided into three categories:

- Those in which the occupants of buildings are disturbed by tactile or felt vibration (**human comfort**). People can sometimes perceive vibration when vibration generating construction work is undertaken close to occupied buildings. Vibration from construction work tends to be intermittent in nature and the EPA's *Assessing Vibration: a technical guideline* (2006) provides criteria for intermittent vibration based on Vibration Dose Values (VDVs), as shown in **Table 2**. While the construction activities for the proposal are generally not expected to result in continuous or impulsive vibration impacts, criteria are provided in **Table 3**.
- Those where building contents may be affected (**building contents**). People perceive vibration at levels well below those likely to cause damage to building contents. For most receivers, the human comfort vibration criteria are the most stringent and it is generally not necessary to set separate criteria for vibration effects on typical building contents. Exceptions to this can occur when vibration sensitive equipment, such as electron microscopes or medical imaging equipment, are in buildings near to vibration intensive construction works.
- Those where the integrity of the building may be compromised (**structural/cosmetic damage**). If vibration from construction work is sufficiently high it can cause cosmetic damage to elements of affected buildings. Industry standard cosmetic damage vibration limits are specified in British Standard BS 7385 and German Standard DIN 4150. The limits are shown in **Table 4** and **Table 5**.

**Table 2 Vibration Dose Values for Intermittent Vibration**

| Building Type  | Assessment period | Vibration Dose Value <sup>1,2</sup> (m/s <sup>1.75</sup> ) |         |
|--|-------------------|--|---------|
|  |                   | Preferred  | Maximum |
| Critical Working Areas (eg operating theatres or laboratories)   | Day or night-time | 0.10   | 0.20    |
| Residential  | Day               | 0.20   | 0.40    |
|  | Night-time        | 0.13   | 0.26    |
| Offices, schools, educational institutions and places of worship   | Day or night-time | 0.40   | 0.80    |
| Workshops  | Day or night-time | 0.80   | 1.60    |
| <p>Note 1: The VDV accumulates vibration energy over the daytime and night-time assessment periods, and is dependent on the level of vibration as well as the duration.</p> <p>Note 2: The VDVs are calculated using Wg weighting.</p> |                   |  |         |



**Table 3 Preferred and Maximum Weighted Root Mean Square Values for Continuous and Impulsive Vibration Acceleration (m/s<sup>2</sup>) 1–80 Hz**

| Location   | Assessment period | Preferred values |                   | Maximum values |                   |
|--|-------------------|------------------|-------------------|----------------|-------------------|
|  |                   | z-axis           | x-axis and y-axis | z-axis         | x-axis and y-axis |
| <b>Continuous vibration</b>                                      |                   |                  |                   |                |                   |
| Residential  | Day               | 0.010            | 0.0071            | 0.020          | 0.014             |
|  | Night-time        | 0.007            | 0.005             | 0.014          | 0.010             |
| Offices, schools, educational institutions and places of worship | Day or night-time | 0.020            | 0.014             | 0.040          | 0.028             |
| Workshops  | Day or night-time | 0.04             | 0.029             | 0.080          | 0.058             |
| <b>Impulsive vibration</b>                                       |                   |                  |                   |                |                   |
| Residential  | Day               | 0.30             | 0.21              | 0.60           | 0.42              |
|  | Night-time        | 0.10             | 0.071             | 0.20           | 0.14              |
| Offices, schools, educational institutions and places of worship | Day or night-time | 0.64             | 0.46              | 1.28           | 0.92              |
| Workshops  | Day or night-time | 0.64             | 0.46              | 1.28           | 0.92              |

**Table 4 BS 7385 Transient Vibration Values for Minimal Risk of Damage**

| Group | Type of Building  | Peak Component Particle Velocity in Frequency Range of Predominant Pulse |   |
|-------|---|--|---|
|       |   | 4 Hz to 15 Hz  | 15 Hz and Above   |
| 1     | Reinforced or framed structures. Industrial and heavy commercial buildings              | 50 mm/s at 4 Hz and above  |   |
| 2     | Unreinforced or light framed structures. Residential or light commercial type buildings | 15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz                           | 20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above |

Note 1: Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values may need to be reduced by up to 50%.



**Table 5 DIN 4150 Guideline Values for Short-term Vibration on Structures**

| Group | Type of Structure  | Guideline Values Vibration Velocity (mm/s)   |             |              |                           |                       |
|-------|--|--|-------------|--------------|---------------------------|-----------------------|
|       |  | Foundation, All Directions at a Frequency of |             |              | Topmost Floor, Horizontal | Floor Slabs, Vertical |
|       |  | 1 to 10 Hz                                   | 10 to 50 Hz | 50 to 100 Hz | All frequencies           | All frequencies       |
| 1     | Buildings used for commercial purposes, industrial buildings and buildings of similar design   | 20   | 20 to 40    | 40 to 50     | 40                        | 20                    |
| 2     | Residential buildings and buildings of similar design and/or occupancy   | 5  | 5 to 15     | 15 to 20     | 15                        | 20                    |
| 3     | Structures that, because of their particular sensitivity to vibration, cannot be classified as Group 1 or 2 <b>and</b> are of great intrinsic value (eg heritage listed buildings) | 3  | 3 to 8      | 8 to 10      | 8                         | 20 <sup>1</sup>       |

Note 1: It may be necessary to lower the relevant guideline value markedly to prevent minor damage.

### 2.2.1 Heritage Buildings or Structures

Heritage listed buildings and structures should be considered on a case-by-case basis and as noted in BS 7385 should not be assumed to be more sensitive to vibration, unless structurally unsound. Where a heritage building is deemed to be sensitive, the more stringent DIN 4150 Group 3 guideline values in **Table 5** can be applied.

### 2.2.2 Vibration – Buried Pipework

The German Standard DIN 4150-3:1999 “Structural Vibration Part 3: Effects of vibration in structures” provides guideline values for evaluating the effect of vibration on buried pipework. The values are based on the assumption that pipes have been manufactured and laid using current technology. Additional considerations may be required at junctions. The recommended limits for short term vibration to ensure minimal risk of damage are presented numerically in **Table 6**.

**Table 6 DIN 4150 Guideline Values for Short Term Vibration Effects on Buried Pipework**

| Pipe Material  | Guideline value at the Pipe <sup>1</sup> (PPV mm/s) |
|--|---|
| Steel (including welded pipes)   | 100   |
| Clay, concrete, reinforced concrete, pre stressed concrete, metal (with or without flange) | 80  |
| Masonry, plastic   | 50  |

Note 1: Mounting equipment directly onto pipes may not be possible. If the vibration source is not immediately next to the pipework, measurements can be made on the ground surface to obtain an estimate. Generally, this vibration level will be greater than the level measured directly on the pipework.



## 2.2.3 Rozelle Interchange Tunnels

### 2.2.3.1 Tunnel Structure

In the absence of specific vibration limits on the existing tunnels, guidance on the maximum peak particle velocity to be met is given in Asset Standards Authority (ASA) Development Near Rail Tunnels as follows:

*Any development that occurs within a distance of 25 metres horizontally from first reserve (dependent on tunnel dimensions), as defined in Asset Standards Authority (ASA) standard Development Near Rail Tunnels (ASA 2018), must consider vibration impacts on existing rail tunnels. The assessment requirement is a maximum peak particle velocity (PPV) of 15 mm/s at the tunnel lining for brick or mass concrete in good condition, or maximum PPV of 20 mm/s at the tunnel lining for cast iron, steel or concrete segment lining.*

Based on the above it is proposed that a maximum peak particle velocity (PPV) threshold of 15 mm/s be set for the tunnels. This threshold is independent of the frequency. If this threshold proves overly restrictive, modification of the recommended threshold may be made following a detailed in-situ vibration response trial of the tunnel itself and surrounding ground.

### 2.2.3.2 Tunnel Secondary Fixtures and Fixings

Tunnel fixtures and fittings would not be more susceptible to vibration damage than those commonly found in residential structures. Fixings in residences (for example lighting elements, switches, large windows, pipes, etc) are never specifically assessed and SLR are not aware of any reports as they relate to vibration induced damage. As such it is proposed to use industry standard cosmetic damage vibration limits (such as those specified in British Standard BS 7385 and German Standard DIN 4150) be applied for secondary structures and fixings within the tunnel (e.g fans, signage, lighting elements, cable trays etc.). The corresponding limits for light frames structures are shown in **Table 4** and **Table 5**.

### 2.2.3.3 Vibration Sensitive Equipment

Potentially impacted sensitive sensors and monitoring equipment not normally found in residential dwellings include:

- Fixed and pan/tilt CCTV cameras,
- TIRTL sensors,
- Speed enforcement cameras,
- Air velocity, air temperature and air quality sensors.

The exact vibration limit specifications of the equipment installed in the tunnel and Cut and Cover structure are not known and would need to be sought from the manufacturer. SLR has, on similar projects, determined manufacturer specific vibration thresholds. For example, typical specifications for CCTV camera systems indicate that the equipment is rated for vibration acceleration of 0.25G (~2.5 m/s<sup>2</sup>) from 3 Hz to 200 Hz which is equivalent to a PPV of 18 mm/s at 30 Hz.

From a review of supplied drawings the TIRTL sensors are located approximately 1 m from the carriageway on either side of the road.



The vibration levels arising from rubber tyred trucks can be predicted based on the “Generalised Ground Surface Vibration Curves presented in the “Transit noise and Vibration Impact Assessment” dated April 1995 prepared for the US Department of Transportation. The predicted peak component vibration velocities from a truck travelling at 60 km/h at 1 m would be in the order of 5 mm/s. As such in the absence of specific manufacturers guidance, it is proposed to set guideline limit of 5 mm/s for equipment located within the tunnel to control the impact on the functionality of vibration sensitive monitoring and measuring equipment.

## 2.2.4 Minimum Working Distances for Vibration Intensive Works

Minimum working distances for typical vibration intensive construction equipment are provided in TfNSW’s Construction Noise and Vibration Guideline (CNVG) and are shown in **Table 7**. The minimum working distances are for both cosmetic damage (from BS 7385 and DIN 4150) and human comfort (from the NSW EPA *Assessing Vibration: a technical guideline*). They are calculated from empirical data which suggests that where work is further from receivers than the quoted minimum distances then impacts are not considered likely. Minimum working distances for vibration generating equipment proposed for use in the project are provided in **Section 4.1**.

**Table 7 Recommended Minimum Working Distances from Vibration Intensive Equipment**

| Plant Item              | Rating/Description               | Minimum Distance                           |                                    |                                    |
|-------------------------|----------------------------------|--|------------------------------------|------------------------------------|
|                         |                                  | Cosmetic Damage                            |                                    | Human Response (NSW EPA Guideline) |
|                         |                                  | Residential and Light Commercial (BS 7385) | Heritage Items (DIN 4150, Group 3) |                                    |
| Vibratory Roller        | <50 kN (1–2 tonne)               | 5 m  | 11 m                               | 15 m to 20 m                       |
|                         | <100 kN (2–4 tonne)              | 6 m  | 13 m                               | 20 m                               |
|                         | <200 kN (4–6 tonne)              | 12 m                                       | 25 m                               | 40 m                               |
|                         | <300 kN (7–13 tonne)             | 15 m                                       | 31 m                               | 100 m                              |
|                         | >300 kN (13–18 tonne)            | 20 m                                       | 40 m                               | 100 m                              |
|                         | >300 kN (>18 tonne)              | 25 m                                       | 50 m                               | 100 m                              |
| Small Hydraulic Hammer  | 300 kg (5–12 tonne excavator)    | 2 m  | 5 m                                | 7 m                                |
| Medium Hydraulic Hammer | 900 kg (12–18 tonne excavator)   | 7 m  | 15 m                               | 23 m                               |
| Large Hydraulic Hammer  | 1,600 kg (18–34 tonne excavator) | 22 m                                       | 44 m                               | 73 m                               |
| Vibratory Pile Driver   | Sheet piles                      | 2 m to 20 m                                | 5 m to 40 m                        | 20 m                               |
| Piling Rig – Bored      | ≤ 800 mm                         | 2 m (nominal)                              | 5 m                                | 4 m                                |
| Jackhammer              | Hand held                        | 1 m (nominal)                              | 3 m                                | 2 m                                |

The minimum working distances are indicative and will vary depending on the particular item of equipment and local geotechnical conditions. The distances apply to cosmetic damage of typical buildings under typical geotechnical conditions.



## 3.0 Construction Noise Assessment

The potential construction noise levels from the Project have been predicted using ISO 9613:2 algorithm in SoundPLAN 8.2 noise modelling software. The model includes ground topography, buildings and representative noise sources from the Project.

### 3.1 Construction Scenarios

Noise modelling scenarios have been determined based on key Project noise generating stages, supplied by the Project team.

A summary of construction significant noise generating construction scenarios required for the project is shown in **Table 8**.

All works are proposed to occur during standard daytime hours.

**Table 8 Construction Scenarios**

| Scenario                                | Equipment            | Number of items | On time in 15 minute period | Sound Power Level (dBA)<br>LAeq(15minute) |
|---|----------------------|-----------------|-----------------------------|---|
| S1: Demolition                          | Hand tools           | 1               | 15                          | 96  |
|   | Excavator            | 1               | 15                          | 103                                       |
|   | Diamond saw          | 1               | 7.5                         | 115                                       |
|   | Jackhammer           | 1               | 7.5                         | 108                                       |
|   | Truck                | 1               | 15                          | 97  |
| S2: Pipework                            | Hand tools           | 1               | 15                          | 96  |
|   | Excavator            | 1               | 15                          | 103                                       |
|   | Trucks               | 1               | 15                          | 97  |
| S3: Paving                              | Hand tools           | 1               | 15                          | 96  |
|   | 2t Compact roller    | 1               | 15                          | 106                                       |
|   | 2t Vibratory roller  | 1               | 15                          | 84  |
|   | Concrete truck chute | 1               | 15                          | 106                                       |
| S4: Electrical trenching/<br>connection | 1.5t excavator       | 1               | 15                          | 84  |

### 3.2 Predicted Construction Noise Levels

For each NCA, the noise level predicted indicates the highest noise level at any receiver within the NCA when all the construction plant and equipment in each construction scenario in **Table 8** are in use at the site.

The assessment shows the predicted impacts based on the exceedance of the NML, as per the categories in **Table 9**.



**Table 9 Exceedance Band and Impact Colouring**

| Exceedance of NML       | Subjective Classification              | Impact Colouring |
|-------------------------|--|------------------|
| No exceedance           | Negligible                             |                  |
| 1 to <10 dB             | Clearly Audible / Low Impact           |                  |
| 10 to 20 dB             | Moderately Intrusive / Moderate Impact |                  |
| > 20 dB or above 75 dBA | Highly Intrusive / High Impact         |                  |

The predicted airborne noise levels from the construction works for each NCA is summarised in **Table 10**.

For most construction activities, it is expected that the construction noise levels would frequently be lower than predicted, as the noise levels presented in this report are based on each scenario occurring at the work zone boundary which is the closest point to each receiver.

The assessment presents the combined predicted noise impacts for each scenario. Meaning, the worst-case result at each receiver is considered from all potential work areas where each scenario is to be undertaken.

The assessment is generally considered conservative as the calculations assume several items of construction equipment are in use at the same time within individual scenarios. In reality, there would frequently be periods when construction noise levels are much lower than the worst-case levels predicted as well as times when no equipment is in use and no noise impacts occur.

**Table 10 Predicted Construction Noise Levels (by NCA)**

| NCA <sup>1</sup> | NML<br>LAeq(15minute)<br>(dBA) | Predicted Noise Level |    |           |    | NML Exceedance (dB) |    |    |
|------------------|--------------------------------|-----------------------|----|-----------|----|---------------------|----|----|
|                  |                                | LAeq(15minute) (dBA)  |    |           |    | S1                  | S2 | S3 |
|                  |                                | S1                    | S2 | S3        | S4 |                     |    |    |
| NCA15            | 54                             | 45                    | 40 | 44        | 18 |                     |    |    |
| NCA16            | 64                             | 39                    | 32 | 38        | 12 |                     |    |    |
| NCA19            | 64                             | 70                    | 63 | 67        | 42 | 6                   |    | 3  |
| NCA20            | 54                             | 45                    | 41 | 44        | 21 |                     |    |    |
| NCA21            | 58                             | 52                    | 47 | 50        | 26 |                     |    |    |
| NCA23            | 59                             | 34                    | 28 | 32        | 7  |                     |    |    |
| NCA24            | 64                             | <b>79</b>             | 71 | <b>76</b> | 47 | 15                  | 7  | 11 |
| NCA25            | 61                             | 50                    | 43 | 48        | 22 |                     |    |    |

Note: Noise levels bolded and highlighted in red indicate that there are receivers that are highly noise affected (>75 dBA)  
Note 1: Most potentially affected residential receiver in each NCA

The predicted airborne noise levels from the construction works for each affected receiver in the NCA's presented above is summarised in **Table 11**.





**Table 11 Predicted Construction Noise Levels (by Address)**

| Address         | NCA   | NML<br>LAeq(15minute)<br>(dBA) | Predicted Noise Level<br>LAeq(15minute) (dBA) |    |           |    | NML Exceedance (dB) |    |    |    |
|-----------------|-------|--------------------------------|---|----|-----------|----|---------------------|----|----|----|
|                 |       |                                | S1  | S2 | S3        | S4 | S1                  | S2 | S3 | S4 |
| 1 Foucart St    | NCA24 | 64                             | <b>79</b>                                     | 71 | <b>76</b> | 47 | 15                  | 7  | 11 |    |
| 2 Foucart St    | NCA19 | 64                             | 70  | 63 | 67        | 42 | 6                   |    | 3  |    |
| 3 Foucart St    | NCA24 | 64                             | <b>77</b>                                     | 69 | 73        | 40 | 13                  | 5  | 9  |    |
| 4 Foucart St    | NCA19 | 64                             | 66  | 60 | 64        | 42 | 2                   |    |    |    |
| 5 Foucart St    | NCA24 | 64                             | <b>76</b>                                     | 67 | 72        | 39 | 12                  | 3  | 8  |    |
| 6 Foucart St    | NCA19 | 64                             | 65  | 59 | 63        | 41 | 1                   |    |    |    |
| 9 Foucart St    | NCA24 | 64                             | 72  | 62 | 68        | 36 | 8                   |    | 4  |    |
| 11 Foucart St   | NCA24 | 64                             | 66  | 58 | 63        | 34 | 2                   |    |    |    |
| 1 Hutcheson St  | NCA24 | 64                             | 69  | 60 | 65        | 37 | 5                   |    | 1  |    |
| 2 Hutcheson St  | NCA24 | 64                             | <b>76</b>                                     | 67 | 72        | 42 | 12                  | 3  | 8  |    |
| 4 Hutcheson St  | NCA24 | 64                             | 75  | 66 | 71        | 41 | 11                  | 2  | 7  |    |
| 6 Hutcheson St  | NCA24 | 64                             | 72  | 64 | 68        | 40 | 8                   |    | 4  |    |
| 8 Hutcheson St  | NCA24 | 64                             | 70  | 61 | 67        | 39 | 6                   |    | 2  |    |
| 69 Lilyfield Rd | NCA24 | 64                             | 66  | 57 | 63        | 35 | 2                   |    |    |    |

Note: Noise levels bolded and highlighted in red indicate that the receiver is highly noise affected (>75 dBA)

The assessment of the predicted construction noise levels shows:

- ‘Highly intrusive’ impacts with noise levels up to a maximum of 15 dB above the relevant NMLs are predicted at four (4) nearby receivers surrounding the works at times during intensive construction works in NCA24.
- ‘Moderately intrusive’ impacts with noise levels up to a maximum of 11 dB above the relevant NMLs are predicted at one (1) nearby receiver surrounding the works at times during intensive construction works in NCA24.
- ‘Clearly audible’ impacts with noise levels up to 9 dB above the relevant NMLs are predicted at 9 nearby receivers surrounding the works at times during intensive construction works at NCA19, and NCA24.
- When noise intensive equipment is not in use, the noise levels are expected to be much less with noise levels generally predicted to be within the NMLs in all NCAs.

All appropriate feasible and reasonable construction noise mitigation measures will be applied to work where exceedances of the NMLs are predicted. Construction noise mitigation measures are discussed in **Section 5.0**.



## 4.0 Construction Vibration Assessment

### 4.1 Project Specific Minimum Working Distances

Minimum working distances for typical vibration intensive construction proposed for use with the Project are provided in the CNVG and are shown in **Table 12**. The minimum working distances are for both cosmetic damage and non-heritage receivers (from BS 7385) and human comfort (from the NSW EPA *Assessing Vibration: a technical guideline*). The minimum working distance for heritage receivers are based on DIN 4150. They are calculated from empirical data which suggests that where work is further away than the quoted minimum distances then impacts are not considered likely.

**Table 12 Recommended Minimum Working Distances from Vibration Intensive Equipment**

| Plant Item                          | Rating/Description | Minimum Distance                           |                                    |                                       |                            |                                    |
|-------------------------------------|--------------------|--|------------------------------------|---------------------------------------|----------------------------|------------------------------------|
|                                     |                    | Cosmetic Damage                            |                                    |                                       |                            | Human Response (NSW EPA Guideline) |
|                                     |                    | Residential and Light Commercial (BS 7385) | Heritage Items (DIN 4150, Group 3) | 15 mm/s Tunnel Threshold <sup>1</sup> | 5 mm/s Sensitive Equipment |                                    |
| Vibratory Roller                    | <50 kN (1–2 tonne) | 5 m  | 11 m                               | 3 m                                   | 6 m                        | 15-20 m                            |
| Jackhammer                          | Hand held          | 1 m (nominal)                              | 3 m                                | 1 m (nominal)                         | 1 m (nominal)              | 2 m                                |
| Note: Using a site exponent of 1.6. |                    |  |                                    |                                       |                            |                                    |

The minimum working distances are indicative and will vary depending on the particular item of equipment and local geotechnical conditions. Specifically, they are based on measurement results in large volumes of ground.

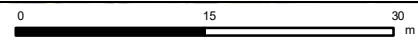
Buildings within the minimum working distances are shown in **Figure 2**.





**LEGEND**

- Vibratory Roller
- Cosmetic Damage (Residential) - 5m Buffer
- Cosmetic Damage (Heritage) - 11m Buffer
- Human Response - 20m Buffer



Scale: 1:600 at A4  
 Coordinate System: GDA2020 MGA Zone 56

Date Drawn: 07-Feb-2025  
 Project Number: 630.031878

Data Source: NearMap January 2025



**VIBRATION IMPACT ASSESSMENT**

**FIGURE 2**

As shown in **Figure 2**, 1 Foucart Street, and 3 Foucart Street fall within the 20 m minimum distance for Human Response buffer. No structures are within the cosmetic damage safe working distance from the proposed works area.

Construction vibration mitigation and management measures are discussed further in **Section 5.0**.

## 5.0 Mitigation and Management Measures

Noise and vibration from the Project may be apparent at the nearest receivers at certain times during the Project. The Project will apply all feasible and reasonable mitigation measures to minimise the impacts.

The following best-practice measures shown in **Table 13** must be implemented where feasible and reasonable to minimise the potential impacts from the work.

**Table 13 Mitigation and Management Measures**

| Mitigation              | Description   |
|-------------------------|---|
| Contractor management   | Training will be provided to project personnel, including relevant sub-contractors, on noise and vibration requirements and the location of sensitive receivers during inductions and toolbox talks.  |
|                         | Delivery vehicles will be fitted with straps rather than chains for unloading, wherever possible.   |
|                         | Truck drivers will avoid compression braking in close proximity to residential receivers.   |
| Noise source mitigation | Use the minimum sized equipment necessary to complete the work and where possible. Note predicted noise levels are based on the Sound Power level data presented in <b>Table 8</b> .  |
|                         | Shut down plant/machinery when not in operation.  |
|                         | Avoid dropping materials from a height and dampen or line metal trays, as necessary.  |
| Path Control            | Ensure equipment is operated in the correct manner.   |
|                         | Portable noise barriers will be used around particularly noisy equipment such as concrete saws, where feasible and reasonable.  |
|                         | Use existing obstacles/structures to shield sensitive receivers from noise such as noise walls; and consideration of site topography when siting plant.   |
| Community consultation  | Provide signage with a 24-hour contact number.  |
|                         | Where predicted noise levels are above the NMLs, implement additional mitigation measures as outlined in <b>Section 5.2</b> .   |
| Monitoring              | Where there are complaints regarding noise, review and implement additional control measures, where feasible and reasonable.  |
|                         | Noise monitoring will be undertaken at the commencement of noise intensive construction works.  |
|                         | Continuous vibration monitoring with alarms (ie audible and visible / SMS) will be undertaken at the nearest sensitive receivers (including heritage listed properties) or other vibration sensitive assets whenever vibration generating activities need to take place inside the minimum-working distances for cosmetic damage. |
|                         | Conduct noise and/or vibration monitoring in response to any formal complaints received.  |

### 5.1 Standard Mitigation Measures

The CNVG contains a number of standard measures for mitigation and managing construction impacts on infrastructure projects. The measures are presented in **Appendix B** and should



be applied where feasible and reasonable to minimise the impacts from the works as far as practicable.

## 5.2 Additional Mitigation Measures

TfNSW *Construction Noise and Vibration Guideline* July 2023 (CNVG) provides practical guidance on how to minimise, to the fullest extent practicable, the impacts on the community from noise and vibration generated during the construction of transportation projects (and related infrastructure) through the application of all feasible and reasonable mitigation measures.

It is noted that while the Project is not a transportation project, impacts to many receivers from construction noise are unavoidable and in some cases it is not feasible to achieve the NMLs at all receiver locations. The CNVG includes a list of additional noise mitigation measures which aim to minimise the potential noise impacts. These include measures ranging from letter box drops and phone calls to offers of alternative accommodation (should noise intensive night-time works be required). A summary of the additional noise mitigation measures matrix from the CNVG is provided in **Table 14** where a glossary of the ‘mitigation types’ is provided in **Appendix B**.

**Table 14 CNVG Additional Mitigation Measures Matrix**

| Predicted airborne LAeq(15min) noise level at receiver  |                    |                    | Additional Mitigation Measures |                       |
|---|--------------------|--------------------|--------------------------------|-----------------------|
| Perception  | dB(A)<br>above RBL | dB(A)<br>above NML | Mitigation Type <sup>1</sup>   | Mitigations<br>levels |
| <b>All hours</b>  |                    |                    |                                |                       |
| 75 dBA or greater   |                    |                    | PN, V, SN                      | HA                    |
| <b>Standard hours: Mon to Fri (7am-6pm), Sat (8am-1pm), Sun/PH (Nil)</b>  |                    |                    |                                |                       |
| Noticeable  | 5 to 10            | -                  | -                              | NML                   |
| Clearly audible   | >10 to 20          | <10                | -                              | NML                   |
| Moderately intrusive  | >20 to 30          | <10 to 20          | PN, V                          | NML+10                |
| Highly intrusive  | >30                | >20                | PN, V                          | NML+20                |
| Legend: PN = Period notification                      SN = Specific notification                      V = Verification monitoring |                    |                    |                                |                       |
| Note 1: Glossary of mitigation types is provided in <b>Appendix B</b> .   |                    |                    |                                |                       |

As presented in **Table 11** and **Table 14** 1 Foucart Street, 3 Foucart Street, 5 Foucart Street, 2 Hutcheson Street, and 4 Hutcheson Street are all highly noise affected receivers and experience highly intrusive noise impacts. As such, they should be extended periodic notifications, specific notifications, and verification monitoring.

## 5.3 Verification Monitoring

Attended noise monitoring at the commencement of intensive construction works will be undertaken at the closest, potentially most affected residences to verify predicted noise levels. Attended monitoring would be required in order to differentiate between construction noise sources and other sources (such as road traffic noise) and also in order to observe and identify any abnormally noisy construction equipment or operations.

During attended monitoring, typical maximum noise levels associated with particular operations and/or plant items will be noted. Extraneous noise events such as road traffic noise will be excluded from the results or highlighted in accompanying notes.



## 6.0 Conclusion and Recommendations

Potential noise and vibration emissions from the Project have been predicted to the surrounding receivers. Noise levels are expected to exceed the NMLs at the closest receivers surrounding work areas for some activities.

Where noise intensive work is proposed to occur, the closest receivers are predicted to exceed the NML by up to 15 dB, resulting in 'highly intrusive' noise levels with four (4) receivers being highly noise affected (greater than 75 dBA).

No structure is within the safe working distance for cosmetic damage of a 1-2 tonne vibratory roller.

A number of mitigation and management measures have been recommended. Where feasible and reasonable these must be applied to the Project to control and minimise the impacts during construction as far as practicable.

Recommendations for the commencement the sewer works include:

- Select plant and equipment which is equivalent or quieter than that adopted in the assessment.
- Undertake noise monitoring during work to confirm impacts at the commencement of noise intensive works associated the sewer works.
- Appropriate information should be provided to the nearby receivers to detail the expected duration and timing of works.





# Appendix A Acoustic Terminology

## Construction Noise and Vibration Impact Assessment

Rozelle Interchange Parklands Facilities Enhancement – Sewer Works

Ford Civil

SLR Project No.: 630.031878.00001

18 February 2025

### 1. Sound Level or Noise Level

The terms 'sound' and 'noise' are almost interchangeable, except that 'noise' often refers to unwanted sound.

Sound (or noise) consists of minute fluctuations in atmospheric pressure. The human ear responds to changes in sound pressure over a very wide range with the loudest sound pressure to which the human ear can respond being ten million times greater than the softest. The decibel (abbreviated as dB) scale reduces this ratio to a more manageable size by the use of logarithms.

The symbols SPL, L or LP are commonly used to represent Sound Pressure Level. The symbol LA represents A-weighted Sound Pressure Level. The standard reference unit for Sound Pressure Levels expressed in decibels is  $2 \times 10^{-5}$  Pa.

### 2. 'A' Weighted Sound Pressure Level

The overall level of a sound is usually expressed in terms of dBA, which is measured using a sound level meter with an 'A-weighting' filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.

People's hearing is most sensitive to sounds at mid frequencies (500 Hz to 4,000 Hz), and less sensitive at lower and higher frequencies. Different sources having the same dBA level generally sound about equally loud.

A change of 1 dB or 2 dB in the level of a sound is difficult for most people to detect, whilst a 3 dB to 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change corresponds to an approximate doubling or halving in loudness. The table below lists examples of typical noise levels.

| Sound Pressure Level (dBA) | Typical Source                             | Subjective Evaluation |
|----------------------------|--|-----------------------|
| 130                        | Threshold of pain                          | Intolerable           |
| 120                        | Heavy rock concert                         | Extremely noisy       |
| 110                        | Grinding on steel                          |                       |
| 100                        | Loud car horn at 3 m                       | Very noisy            |
| 90                         | Construction site with pneumatic hammering |                       |
| 80                         | Kerbside of busy street                    | Loud                  |
| 70                         | Loud radio or television                   |                       |
| 60                         | Department store                           | Moderate to quiet     |
| 50                         | General Office                             |                       |
| 40                         | Inside private Office                      | Quiet to very quiet   |
| 30                         | Inside bedroom                             |                       |
| 20                         | Recording studio                           | Almost silent         |

Other weightings (eg B, C and D) are less commonly used than A-weighting. Sound Levels measured without any weighting are referred to as 'linear', and the units are expressed as dB(lin) or dB.

### 3. Sound Power Level

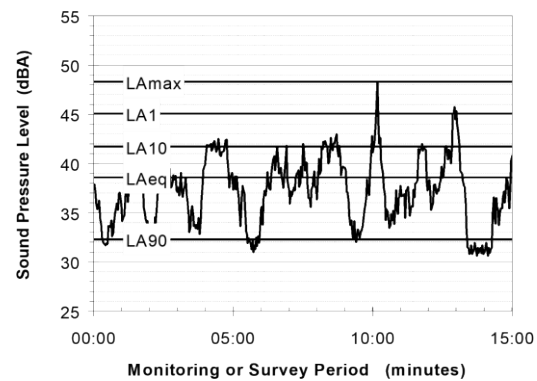
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit  $10^{-12}$  W.

The relationship between Sound Power and Sound Pressure is similar to the effect of an electric radiator, which is characterised by a power rating but has an effect on the surrounding environment that can be measured in terms of a different parameter, temperature.

### 4. Statistical Noise Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels LAN, where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the LA1 is the noise level exceeded for 1% of the time, LA10 the noise exceeded for 10% of the time, and so on.

The following figure presents a hypothetical 15 minute noise survey, illustrating various common statistical indices of interest.



Of particular relevance, are:

LA1 the noise level exceeded for 1% of the 15 minute interval.

LA10 the noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.

LA90 the noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level.

LAeq the A-weighted equivalent noise level (basically, the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.





## 5. Frequency Analysis

Frequency analysis is the process used to examine the tones (or frequency components) which make up the overall noise or vibration signal.

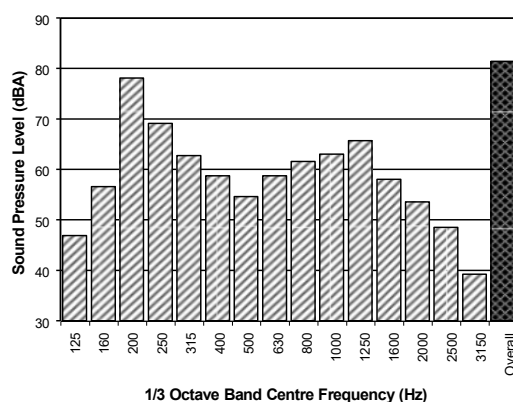
the units for frequency are Hertz (Hz), which represent the number of cycles per second.

Frequency analysis can be in:

- Octave bands (where the centre frequency and width of each band is double the previous band)
- 1/3 octave bands (three bands in each octave band)

Narrow band (where the spectrum is divided into 400 or more bands of equal width)

The following figure shows a 1/3 octave band frequency analysis where the noise is dominated by the 200 Hz band. Note that the indicated level of each individual band is less than the overall level, which is the logarithmic sum of the bands.



## 6. Annoying Noise (Special Audible Characteristics)

A louder noise will generally be more annoying to nearby receivers than a quieter one. However, noise is often also found to be more annoying and result in larger impacts where the following characteristics are apparent:

- **Tonality** - tonal noise contains one or more prominent tones (ie differences in distinct frequency components between adjoining octave or 1/3 octave bands), and is normally regarded as more annoying than 'broad band' noise.
- **Impulsiveness** - an impulsive noise is characterised by one or more short sharp peaks in the time domain, such as occurs during hammering.
- **Intermittency** - intermittent noise varies in level with the change in level being clearly audible. An example would include mechanical plant cycling on and Off.
- **Low Frequency Noise** - low frequency noise contains significant energy in the lower frequency bands, which are typically taken to be in the 10 to 160 Hz region.

## 7. Vibration

Vibration may be defined as cyclic or transient motion. This motion can be measured in terms of its displacement, velocity or acceleration. Most assessments of human response to vibration or the risk of damage to buildings use measurements of vibration velocity. These may be expressed in terms of 'peak' velocity or 'rms' velocity.

The former is the maximum instantaneous velocity, without any averaging, and is sometimes referred to as 'peak particle velocity', or PPV. The latter incorporates 'root mean squared' averaging over some defined time period.

Vibration measurements may be carried out in a single axis or alternatively as triaxial measurements (ie vertical, longitudinal and transverse).

The common units for velocity are millimetres per second (mm/s). As with noise, decibel units can also be used, in which case the reference level should always be stated. A vibration level  $V$ , expressed in mm/s can be converted to decibels by the formula  $20 \log (V/V_0)$ , where  $V_0$  is the reference level (10<sup>-9</sup> m/s). Care is required in this regard, as other reference levels may be used.

## 8. Human Perception of Vibration

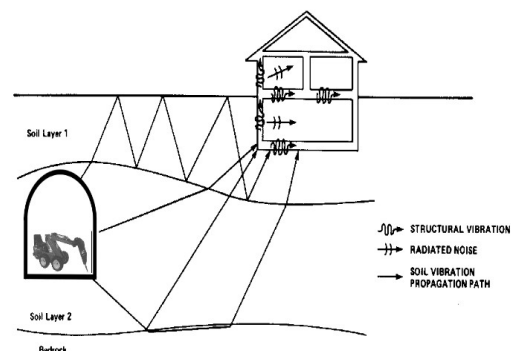
People are able to 'feel' vibration at levels lower than those required to cause even superficial damage to the most susceptible classes of building (even though they may not be disturbed by the motion). An individual's perception of motion or response to vibration depends very strongly on previous experience and expectations, and on other connotations associated with the perceived source of the vibration. For example, the vibration that a person responds to as 'normal' in a car, bus or train is considerably higher than what is perceived as 'normal' in a shop, office or dwelling.

## 9. Ground-borne Noise, Structure-borne Noise and Regenerated Noise

Noise that propagates through a structure as vibration and is radiated by vibrating wall and floor surfaces is termed 'structure-borne noise', 'ground-borne noise' or 'regenerated noise'. This noise originates as vibration and propagates between the source and receiver through the ground and/or building structural elements, rather than through the air.

Typical sources of ground-borne or structure-borne noise include tunnelling works, underground railways, excavation plant (eg rockbreakers), and building services plant (eg fans, compressors and generators).

The following figure presents an example of the various paths by which vibration and ground-borne noise may be transmitted between a source and receiver for construction activities occurring within a tunnel.



The term 'regenerated noise' is also used in other instances where energy is converted to noise away from the primary source. One example would be a fan blowing air through a discharge grill. the fan is the energy source and primary noise source. Additional noise may be created by the aerodynamic effect of the discharge grill in the airstream. This secondary noise is referred to as regenerated noise.





# **Appendix B    Glossary of CNVG Mitigation Measures**

## **Construction Noise and Vibration Impact Assessment**

**Rozelle Interchange Parklands Facilities Enhancement – Sewer Works**

**Ford Civil**

SLR Project No.: 630.031878.00001

18 February 2025

## CNVG Standard Mitigation and Management Measures

| Action Required   | Applies To   | Details   |
|---|--|---|
| <b>Management Mitigation Measures</b>                               |  |   |
| Implementation of any project specific mitigation measures required | Airborne noise<br>Ground-borne noise and vibration | In addition to the measures set out in this table, any project specific mitigation measures identified in the EIA documentation (e.g. REF, submissions or representations report) or approval or licence conditions must be implemented.  |
| Implement stakeholder consultation measures                         | Airborne noise<br>Ground-borne noise and vibration | <p>Periodic notification (monthly letterbox drop/ email and website notification) detailing all upcoming construction activities delivered to sensitive receivers at least 7 days prior to commencement of relevant works.</p> <p>In addition to periodic notification, the following strategies may be adopted on a case-by-case basis:</p> <ul style="list-style-type: none"> <li>• Project-specific website</li> <li>• Project infoline</li> <li>• Construction response line</li> <li>• Email distribution list</li> <li>• Web-based surveys</li> <li>• Social media</li> <li>• Community and stakeholder meetings</li> <li>• Community-based forums (if required by approval conditions).</li> </ul> |
| Register of noise and vibration sensitive receivers                 | Airborne noise<br>Ground-borne noise and vibration | <p>A register of most affected noise and vibration sensitive receivers (NVSRs) would be kept on site. The register would include the following details for each NVSR:</p> <ul style="list-style-type: none"> <li>• Address of receiver</li> <li>• Category of receiver (e.g., residential, commercial etc.)</li> <li>• Contact name and phone number.</li> </ul> <p>The register may be included as part of the Project's Community Liaison Plan or similar document and maintained in accordance with the requirements of this plan.</p>   |
| Construction hours and scheduling                                   | Airborne noise<br>Ground-borne noise and vibration | Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating noise with special audible characteristics and/or vibration levels should be scheduled during less sensitive time periods.   |
| Construction respite period   | Airborne noise<br>Ground-borne noise and vibration | <p>Noise with special audible characteristics and vibration generating activities (including jack and rock hammering, sheet and pile driving, rock breaking and vibratory rolling) may only be carried out in continuous blocks, not exceeding three hours each, with a minimum respite period of one hour between each block.</p> <p>'Continuous' includes any period during which there is less than a one-hour respite between ceasing and recommencing any of the work.</p> <p>No more than two consecutive nights of noise with special audible characteristics and/or vibration generating work may</p>   |



| Action Required   | Applies To   | Details   |
|---|--|---|
|   |  | be undertaken in the same NCA over any 7-day period, unless otherwise approved by the relevant authority.   |
| Site inductions   | Airborne noise<br>Ground-borne noise and vibration | All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include: All relevant project specific and standard noise and vibration mitigation measures. <ul style="list-style-type: none"> <li>• Relevant licence and approval conditions.</li> <li>• Permissible hours of work.</li> <li>• Any limitations on noise generating activities with special audible characteristics.</li> <li>• Location of nearest sensitive receivers.</li> <li>• Construction employee parking areas.</li> <li>• Designated loading/unloading areas and procedures.</li> <li>• Site opening/closing times (including deliveries).</li> <li>• Environmental incident procedures.</li> </ul> |
| Behavioural practices   | Airborne noise                                     | No swearing or unnecessary shouting or loud stereos/radios on site.<br>No dropping of materials from height, throwing of metal items and slamming of doors.<br>No excessive revving of plant and vehicle engines.<br>Controlled release of compressed air.  |
| Monitoring  | Airborne noise<br>Ground-borne noise and vibration | A noise monitoring program should be carried out for the duration of works in accordance with the Construction Noise and Vibration Management Plan and any approval and licence conditions.   |
| Attended vibration measurements                               | Ground-borne noise and vibration                   | Attended vibration measurements shall be undertaken at all buildings within 25 m of vibration generating activities when these activities commence to confirm that vibration levels are within the acceptable range to prevent cosmetic building damage.  |
| Update Construction Environmental Management Plans            | Airborne noise<br>Ground-borne noise and vibration | The CEMP must be regularly updated to account for changes in noise and vibration management issues and strategies.  |
| Building condition surveys                                    | Vibration Blasting                                 | Undertake building dilapidation surveys on all buildings located within the buffer zone prior to major project construction activities with the potential to cause property damage.   |
| <b>Source Mitigation Measures</b>                             |  |   |
| Plan worksites and activities to minimise noise and vibration | Airborne noise<br>Ground-borne noise and vibration | Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.   |



| Action Required                               | Applies To   | Details  |
|---|--|--|
| Equipment selection                           | Airborne noise<br>Ground-borne noise and vibration | Use quieter and less vibration emitting construction methods where feasible and reasonable, see Appendix C. For example, when piling is required, bored piles rather than impact-driven piles will minimise noise and vibration impacts. Similarly, diaphragm wall construction techniques, in lieu of sheet piling, will have significant noise and vibration benefits. |
| Maximum noise levels                          | Airborne noise                                     | The noise levels of plant and equipment must have operating Sound Power or Sound Pressure Levels compliant with the allowable noise levels in Appendix C.  |
| Rental plant and equipment                    | Airborne noise                                     | The noise levels of plant and equipment items are to be considered in rental decisions and in any case cannot be used on site unless compliant with the allowable noise levels in Appendix C.  |
| Use and siting of plant                       | Airborne noise                                     | Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided.<br>The offset distance between noisy plant and adjacent sensitive receivers is to be maximised.<br>Plant used intermittently to be throttled down or shut down.<br>Noise-emitting plant to be directed away from sensitive receivers.                           |
| Non-tonal reversing alarms                    | Airborne noise                                     | Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out-of-hours work, including delivery vehicles.  |
| Minimise disturbance arising from delivery of | Airborne noise                                     | Loading and unloading of materials/deliveries is to occur as <i>far as possible</i> from sensitive receivers.  |
| goods to construction sites                   |  | Select site access points and roads as far as possible away from sensitive receivers.<br>Dedicated loading/unloading areas to be shielded if close to sensitive receivers.<br>Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible.  |
| Construction related traffic                  | Airborne noise                                     | Schedule and route vehicle movements away from sensitive receivers and during less sensitive times.<br>Limit the speed of vehicles and avoid the use of engine compression brakes.<br>Maximise on-site storage capacity to reduce the need for truck movements during sensitive times.   |
| Silencers on mobile plant                     | Airborne noise                                     | Where possible reduce noise from mobile plant through additional fittings including:<br>Residential grade mufflers<br>Damped hammers such as 'City' Model Rammer Hammers<br>Air Parking brake engagement is silenced.  |



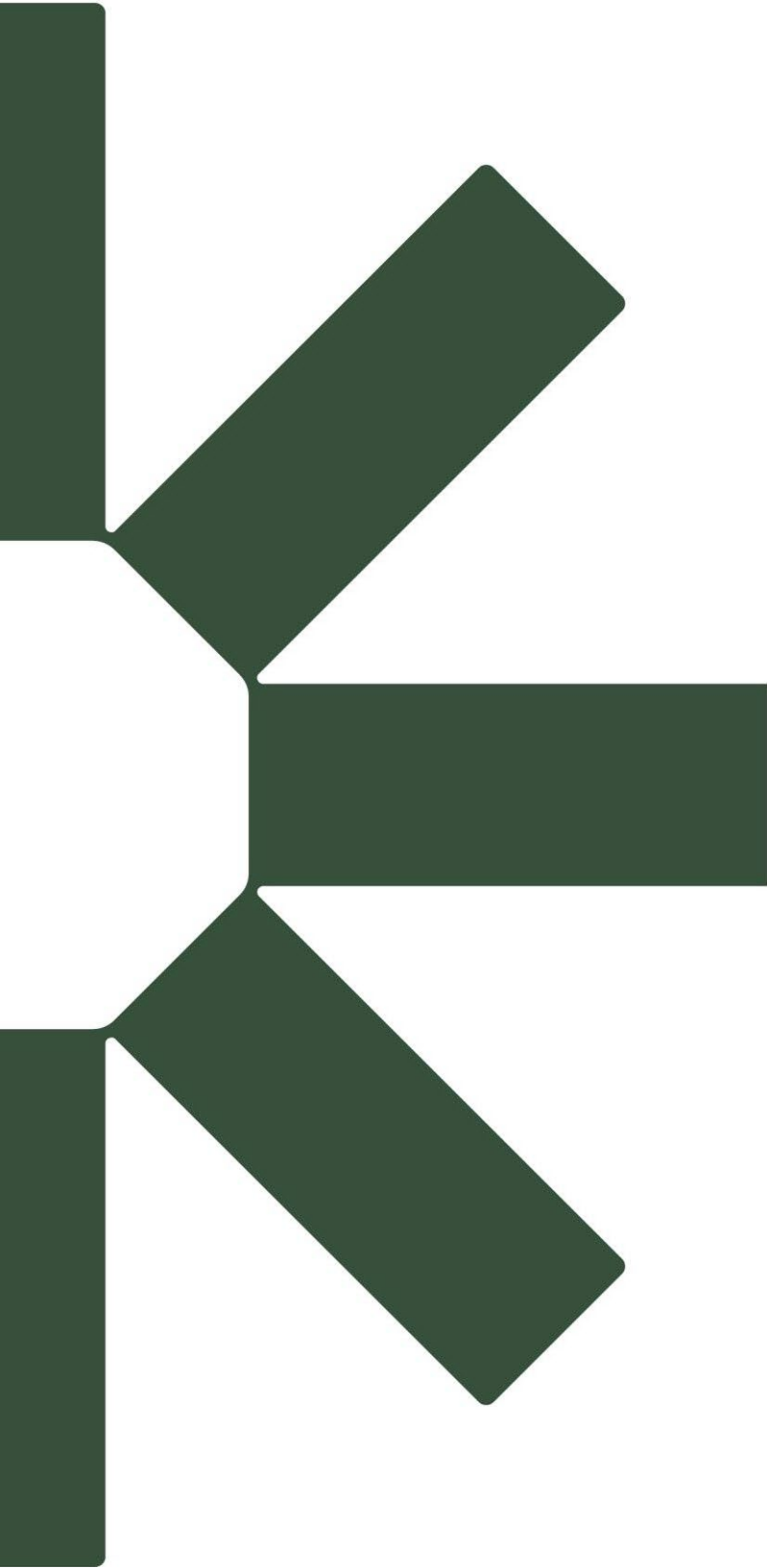
| Action Required  | Applies To     | Details   |
|--|----------------|---|
| Prefabrication of materials off-site                                   | Airborne noise | Where practicable, pre-fabricate and/or prepare materials offsite to reduce noise with special audible characteristics occurring on site. Materials can then be delivered to site for installation.   |
| Engine compression brakes  | Airborne noise | Limit the use of engine compression brakes at night and in residential areas.<br>Ensure vehicles are fitted with a maintained original equipment manufacturer exhaust silencer or a silencer that complies with the National Transport Commission's 'In-service test procedure' and standard. |
| <b>Path Mitigation Measures</b>  |                |   |
| Shield stationary noise sources such as pumps, compressors, fans, etc. | Airborne noise | Stationary noise sources should be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained.<br>Appendix F of AS 2436: 1981 lists materials suitable for shielding.  |
| Shield sensitive receivers from noisy activities                       | Airborne noise | Use structures to shield residential receivers from noise such as site shed placement; earth bunds; fencing; erection of operational stage noise barriers (where practicable) and consideration of site topography when siting plant.   |



## CNVG Additional Mitigation Measures

| Mitigation Measure      | Abbreviation | Description  |
|-------------------------|--------------|--|
| Periodic notification   | PN           | <p>A notification is produced and distributed to stakeholders via letterbox drop or distributed to the project postal and/or email mailing lists. Periodic notifications provide an overview of current and upcoming work across the project and other topics of interest. The objective is to engage, inform and provide project-specific messages. Advanced warning of potential disruptions (e.g., traffic changes or noisy works) can assist in reducing the impact on stakeholders. The approval conditions for projects specify requirements for notification to sensitive receivers where work may impact them.</p> <p>Most projects distribute notifications monthly. Each notification is graphically designed within a branded template. In certain circumstances media advertising may also be used to supplement Periodic Notifications, where considered effective.</p>   |
| Verification monitoring | V            | <p>Verification monitoring of noise and/or vibration during construction may be conducted at the affected receiver(s) or a nominated representative location (typically the nearest receiver where more than one receiver has been identified). Monitoring can be in the form of either unattended logging (i.e., for vibration provided there is an immediate feedback mechanism such as SMS capabilities) or operator attended surveys (i.e., for specific periods of construction noise).</p> <p>Verification must be undertaken by suitably qualified, trained and experienced personnel using appropriate equipment and methodology, with reference to AS1055.</p> <p>The purpose of monitoring is to confirm that:</p> <ul style="list-style-type: none"> <li>• Construction noise and vibration from the project are consistent with the predictions in the noise assessment.</li> <li>• Mitigation and management of construction noise and vibration is appropriate for receivers affected by the work.</li> </ul> <p>Where noise monitoring finds the actual noise levels exceed those predicted in the noise assessment then immediate refinement of mitigation measures may be required and the CNVIA amended.</p>   |
| Specific notification   | SN           | <p>Specific notifications are in the form of a personalised letter or phone call to identified stakeholders no later than seven calendar days ahead of construction activities that are likely to exceed the noise objectives. In addition to Specific Notifications and letters communications representatives from the contractor would visit identified stakeholders at least 48 hours ahead of potentially disturbing construction activities and provide an individual briefing.</p> <ul style="list-style-type: none"> <li>• Letters may be letterbox dropped, hand distributed or emailed.</li> <li>• Phone calls provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and their specific needs.</li> <li>• Individual briefings are used to inform stakeholders about the impacts of noisy activities and mitigation measures that will be implemented. Individual briefings provide affected stakeholders with personalised contact and tailored advice, with the opportunity to comment on the project.</li> <li>• Specific notifications are used to support periodic notifications, or to advertise unscheduled or high impact work.</li> </ul> <p>Where impacts have already been captured in a Periodic Notification, a Specific Notification may not be required.</p> |





Making Sustainability Happen





## Appendix A8 - Staging Report

# M4-M5 Link Project

Transport for New South Wales | March 2024



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## Review register

| Review version | Issued by | Issued for  | Date of issue |
|----------------|-----------|---|---------------|
| – Rev 00       | –         | – Final for submission to DPE   | – 12/09/2018  |
| – Rev 01       | –         | – Final for submission to DPE following Modification to Planning Approval                     | – 20/03/2019  |
| – Rev 02       | –         | – Revised following change to E60   | – 28/11/2019  |
| – Rev03        | –         | – Revised following Modifications to Planning Approval  | – 07/10/2020  |
| – Rev 04       | –         | – Revised following Mod 5 determination   | – 1/02/2021   |
| – Rev 05       | –         | – Revised following Mod 7 determination   | – 7/11/2022   |
| – Rev 06       | –         | – Revised to include new stage for pedestrian and cyclist improvements (CoA E58)              | – 26/04/2023  |
| – Rev 07       | –         | – Update to Stage 3   | – 12/07/2023  |
| – Rev 08       | –         | – Stage 3 updated in response to DPE comments<br>– Also revised following Mod 8 determination | – 17/08/2023  |
| – Rev 09       | –         | – Revised to detail Western Harbour Tunnel connections  | – 24/10/2023  |
| – Rev 10       | –         | – Revised to include Stage 4 (Parklands Enhancement)  | – 14/03/2024  |

## Glossary of terms and abbreviations

| Term         | Meaning  |
|--------------|--|
| ASBJV        | Acciona Samsung Bouygues Joint Venture (formerly Lendlease Samsung Bouygues Joint Venture (LSBJV)) |
| AA           | Acoustics Advisor  |
| ANZECC       | Australian and New Zealand Environment and Conservation Council                                    |
| AQCCC        | Air Quality Community Consultative Committee   |
| ARI          | Average recurrence interval  |
| CASA         | Civil Aviation Safety Authority  |
| CEMP         | Construction Environmental Management Plan   |
| CoA          | Condition of Approval  |
| CSSI         | Critical State significant infrastructure  |
| DIRD / DIRDC | Commonwealth Department of Infrastructure, Regional Development and Cities                         |
| DPE          | NSW Department of Planning and Environment   |
| DPI Water    | NSW Department of Primary Industries – Water, now NSW Office of Water (NOW)                        |
| EIS          | Environmental impact statement   |
| EMS          | Environmental Management System  |
| EP&A Act     | <i>Environmental Planning and Assessment Act 1979 (NSW)</i>  |
| EPA          | NSW Environment Protection Authority   |
| EPL          | Environment Protection Licence   |
| ER           | The Environmental Representative for the CSSI  |
| FRNSW        | Fire and Rescue NSW  |
| HAMU         | Heritage Archaeological Management Unit  |
| JHCPB        | John Holland CPB Joint Venture   |
| MOC          | Motorway operations complex  |
| NATA         | National Association of Testing Authorities  |
| NEPM         | National Environment Protection Measures   |
| NOW          | NSW Office of Water, previously DPI Water  |
| NSW          | New South Wales  |
| OEM          | NSW Office of Environment and Heritage   |

|            |   |
|------------|---|
| OEMP       | Operational Environmental Management Plan                           |
| ONVR       | Operational Noise and Vibration Review                              |
| RLMP       | Residual Land Management Plan                                       |
| RMS        | Roads and Maritime Services   |
| SES        | State Emergency Service   |
| SPIR       | Submissions and Preferred Infrastructure Report                     |
| SSI        | State significant infrastructure                                    |
| Stage 1    | M4-M5 Link Mainline tunnels   |
| Stage 2    | M4-M5 Link Rozelle interchange                                      |
| TfNSW      | Transport for New South Wales, formerly Roads and Maritime Services |
| UDLP       | Urban Design and Landscape Plan                                     |
| WestConnex | WestConnex Transurban, formerly Sydney Motorway Corporation         |

# Introduction

## Overview of WestConnex

WestConnex is one of the NSW Government's key infrastructure projects, which aims to ease congestion, create employment opportunities and connect communities. The WestConnex program of works, together with the proposed Sydney Gateway project, would facilitate improved connections between western Sydney, Sydney Airport, Port Botany and south and south-western Sydney, as well as better connectivity between the important economic centres along Sydney's Global Economic Corridor and local communities.

Separate planning applications and assessments have been completed for each of the WestConnex projects. Transport for New South Wales (TfNSW) commissioned WestConnex to deliver the WestConnex project, on behalf of the NSW Government. TfNSW is the proponent for the program of works and is responsible for construction of the Rozelle interchange stage of works for the M4-M5 Link project (refer to section 2.1 below for more information).

The WestConnex program of works includes:

- New M4 consisting of:
  - M4 Widening – widening of the existing M4 Motorway from Parramatta to Homebush (open to traffic)
  - M4 East – extension of the M4 Motorway in tunnels between Homebush and Haberfield via Concord (open to traffic)
- King Georges Road Interchange Upgrade – upgrade of the King Georges Road interchange between the M5 West and M5 East at Beverly Hills (open to traffic)
- New M5 (now known as the M8) – duplication of the M5 East from King Georges Road at Beverly Hills with tunnels from Kingsgrove to a new interchange at St Peters (open to traffic)
- M4-M5 Link – tunnels connecting the M4 East at Haberfield and the New M5 at St Peters, an interchange at Rozelle and a link at Iron Cove (approved and under construction).

## The M4-M5 Link

TfNSW has received approval from the NSW Minister for Planning to construct and operate the M4-M5 Link (the project), which will comprise a new multi-lane road link between the M4 Motorway at Haberfield and the M8 Motorway at St Peters (refer to Figure 1). The project will also include an interchange at Lilyfield and Rozelle (the Rozelle interchange) and a tunnel connection between Anzac Bridge and Victoria Road, east of Iron Cove Bridge (Iron Cove Link) (refer to Figure 2). In addition, construction of tunnels, ramps and associated infrastructure to provide connections to the future Western Harbour Tunnel project will be carried out at the Rozelle interchange. Pedestrian and cyclist connectivity improvements will be delivered on Victoria Road and within the Rozelle local road network (refer to Figure 3). The project will also provide enhanced park facilities as part of the final transformation of Rozelle Rail Yards into new open space (refer to Figure 4).

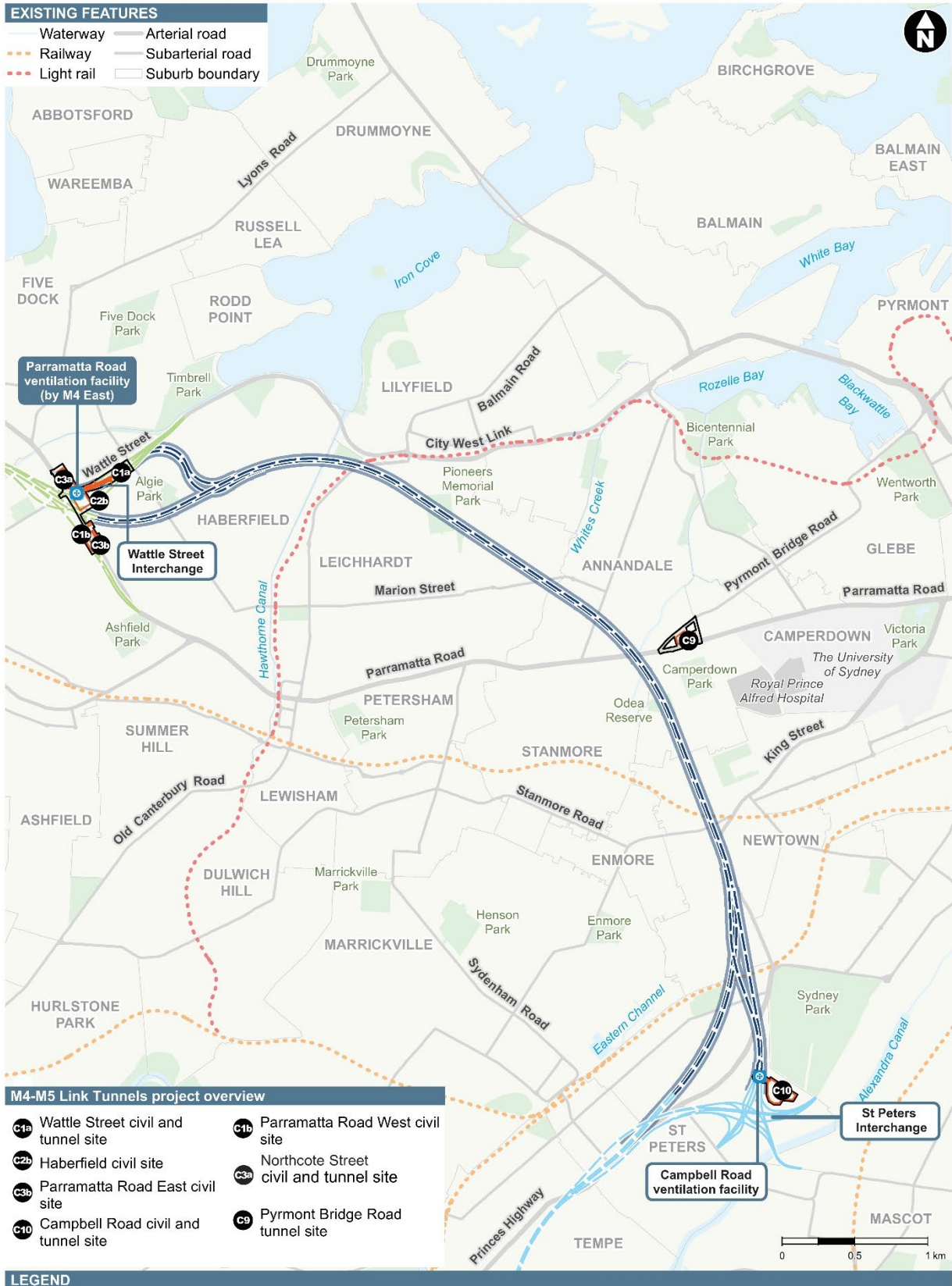


Figure 1 Overview of the M4-M5 Link Tunnels project (Stage 1)



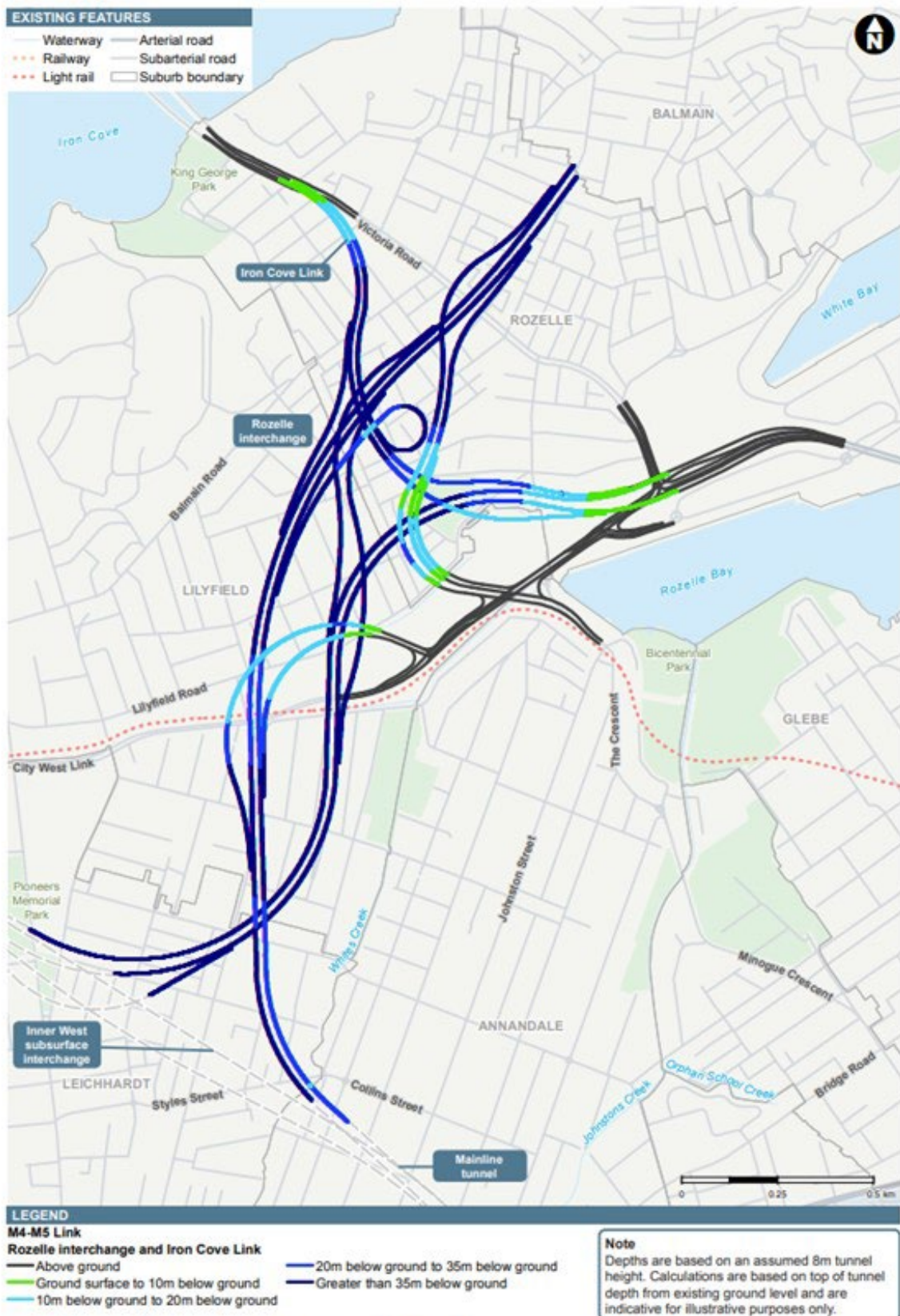
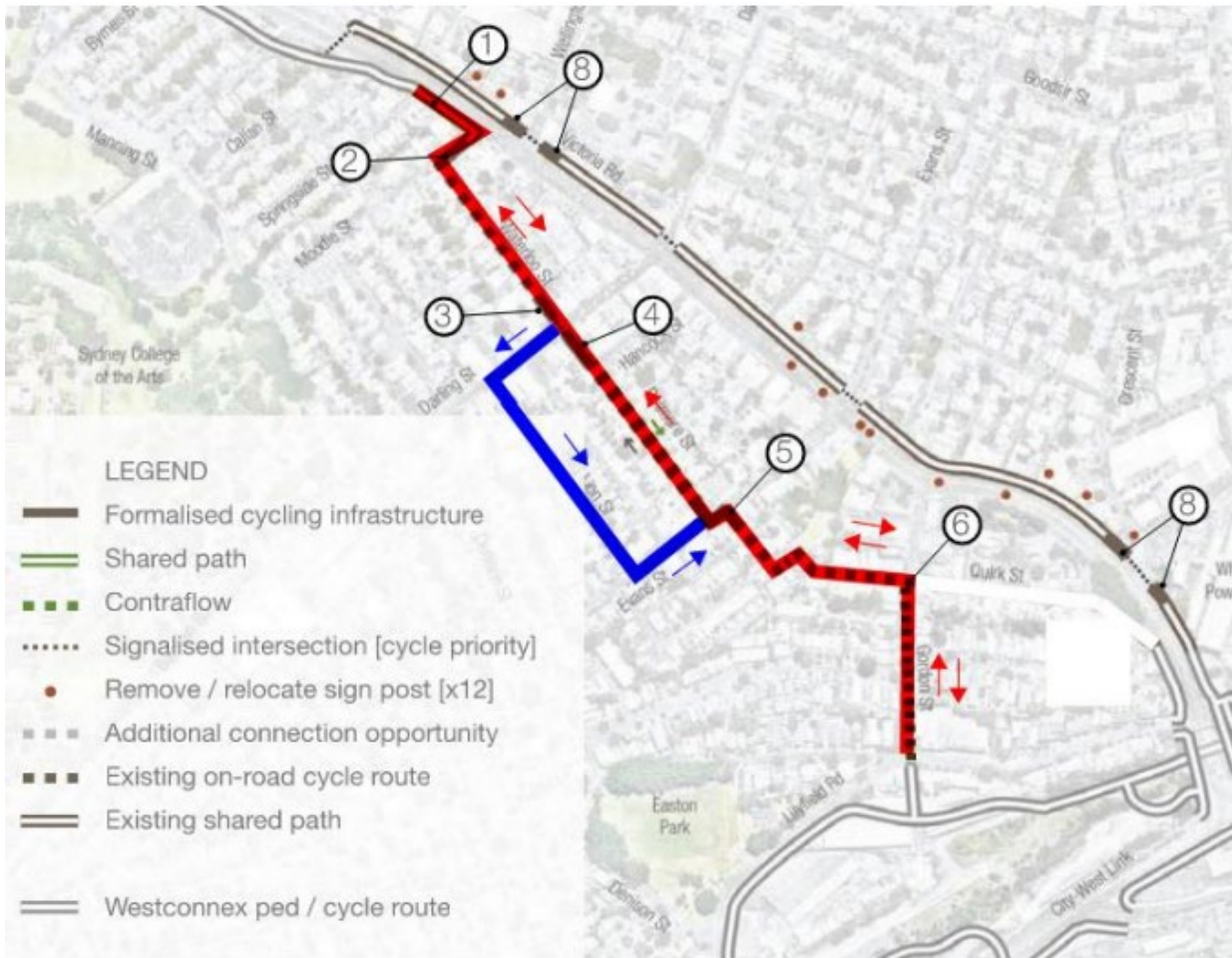


Figure 6-12 Indicative tunnel depths - Rozelle interchange and Iron Cove Link

6-25

Figure 2 Overview of the Rozelle interchange project (Stage 2)



**Figure 3: Overview of the Rozelle pedestrian and cyclist improvements (Stage 3)**



Figure 4: Rozelle Parklands Enhancement (Stage 4)

## Statutory context

The project has been declared State significant infrastructure (SSI) and critical State significant infrastructure (CSSI) by the NSW Minister for Planning. TfNSW prepared an environmental impact statement (EIS), dated August 2017. The EIS identified a range of environmental, social and planning issues associated with the construction and operation of the project and proposed measures to mitigate and manage those potential impacts.

The EIS was publicly exhibited between 18 August and 16 October 2017. Following public exhibition, submissions from stakeholders were received and addressed by TfNSW in a submissions and preferred infrastructure report dated January 2018, which was lodged with the now NSW Department of Planning and Environment (DPE).

The project has been assessed by DPE in accordance with the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). The project was approved by the NSW Minister for Planning on 17 April 2018, subject to Conditions of Approval (CoAs). The planning approval applies to both stages of construction and operation.

TfNSW sought to modify the approval for the project, relating to Stage 1 – Mainline tunnels, which principally involved the removal of the Darley Road civil and tunnel site and changes to the arrangement of construction sites at Haberfield and Ashfield. In addition, the modification also sought to relocate the operational water treatment plant from the Darley Road motorway operations complex to the Campbell Road motorway operations complex at the St Peters interchange.

A Modification Report for MOD 1 was prepared by TfNSW and placed on public exhibition by DPE for 14 days between 12 and 26 September 2018. The modification related to civil sites and ancillary facilities associated with Stage 1 of the project. A Response to Submissions Report was prepared to respond to submissions received during the public exhibition period. This report was lodged with DPE in November 2018. The Modification was determined by the NSW Minister for Planning on 25 February 2019, subject to CoAs.

A Modification Report for MOD 2 was prepared by TfNSW and placed on public exhibition by DPE between 21 August 2019 to 25 September 2019. The modification related to The Crescent overpass and active transport links associated with Stage 2 of the project. A Response to Submissions Report was prepared to respond to submissions received during the public exhibition period. This report and a Design Amendment Report were lodged with DPE in April 2020. The Modification was determined by the NSW Minister for Planning on 30 September 2020, subject to CoAs.

A Modification Report for MOD 3 was prepared by TfNSW and placed on public exhibition by DPE between 20 November and 18 December 2019. The modification related to the Iron Cove centilation facility associated with Stage 2 of the project. A Response to Submissions Report was prepared to respond to submissions received during the public exhibition period. This report was lodged with DPE in March 2020. The Modification was determined by the NSW Minister for Planning and Public Space on 28 July 2020, subject to CoAs.

A Modification Report for MOD 4 was prepared by TfNSW and lodged with DPE in June 2020. The modification related to the Glebe Island construction ancillary facility associated with Stage 2 of the project. The Modification was determined by DPE on 28 July 2020, subject to CoAs.

A letter dated 26 October 2020 was prepared by TfNSW and lodged with DPE. This formed MOD 5 to the Planning Approval. The administrative modification sought to allow the establishment of additional minor ancillary facilities that are likely to have minimal impacts to provide consistency with other major infrastructure projects. The Modification was determined by DPE on 18 November 2020, subject to a CoA.

A proposed modification (MOD 6) was prepared by TfNSW and lodged with DPE. The modification related to haul road relocation at the Rozelle interchange associated with Stage 2 of the project. This was subsequently withdrawn.

A Modification Report for MOD 7 was prepared by TfNSW and lodged with DPE. The modification related to the permanent closure of Northcote Street at Haberfield. The modification report was placed on public exhibition by DPE between 18 May and 31 May 2022. A Response to Submissions Report was prepared to respond to submissions received during the public exhibition period and lodged with DPE in August 2022. The Modification was determined by DPE on 14 October 2022, subject to CoAs.

A letter dated 14 July 2023 was prepared by TfNSW and lodged with DPE. This formed MOD 8 to the Planning Approval. The administrative modification sought amendments to condition E26 to provide the Secretary the discretion to apply flexibility in the ambient air quality monitoring timeframe. The Modification was determined by DPE on 23 August 2023.

## Purpose of this document

This report has been prepared to address the Staging Report requirements of CoA A12 and A13. The Staging Report requirements, and where they are addressed in this report, are listed in Table 1.

**Table 1: Staging Report requirements as per the CoAs**

| CoA | Requirement  | Where/how addressed   |
|-----|--|-----------------------|
| A12 | The CSSI may be constructed and operated in stages. Where staged construction or operation is proposed, a Staging Report (for either or both construction and operation as the case requires) must be prepared, then endorsed by the ER and then submitted to the Secretary for information. The Staging Report must be submitted to the Secretary no later than one (1) month prior to the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one (1) month prior to the commencement of operation of the first of the proposed stages of operation). | This report           |
| A13 | The Staging Report must:   |                       |
|     | a) if staged construction is proposed, set out how the construction of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish;  | Chapter 2, Appendix A |
|     | b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including general details of work and other activities to be carried out in each stage and the general timing of when operation of each stage will commence and finish (if relevant);   | Chapter 2, Appendix A |

|  |  |   |
|--|--|---|
|  | <p>c) specify the relevant conditions of approval that apply to each stage and</p> <p>how compliance with those conditions will be achieved across and between each of the stages of the CSSI; and</p> | <p>Section 2.1.6 and Appendix A</p> <p>Section 3.2 and Appendix C</p> |
|  | <p>d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.</p>  | <p>Section 2.1.5</p>  |

DPE has been advised of the status of the project prior to the commencement of construction and operation of each stage. This Staging Report has been revised to address the CoAs issued by the NSW Minister following determination of MOD 1, MOD 2, MOD 3, MOD 4, MOD 5, MOD 7 and MOD 8.

Where amendments to the proposed staging or timing occur, a revised Staging Report will be prepared, endorsed by the ER and submitted in accordance with CoA A16.

# Proposed staging

## Staging strategy

The construction and operation of the M4-M5 Link project will be staged as follows:

- Stage 1 - Mainline tunnels – WestConnex has engaged a design and construction contractor, Acciona Samsung Bouygues Joint Venture (ASBJV, formerly LSBJV), to construct and operate Stage 1 of the project:
  - This stage involves construction of the Mainline tunnels between the M4 at Haberfield and the M8 at St Peters, stub tunnels to the Rozelle interchange (at the Inner West subsurface interchange), ancillary infrastructure at the Campbell Road motorway operations complex (MOC5) and fitout of the Parramatta Road ventilation facility.
- Stage 2 - Rozelle interchange – TfNSW has engaged a design and construction contractor, John Holland CPB (JHCPB), to construct Stage 2 of the project. WestConnex will operate Stage 2 of the project:
  - This stage involves construction of the Rozelle interchange and Iron Cove Link including connections to the stub tunnels at the Inner West subsurface interchange (built during Stage 1), ancillary infrastructure at the Rozelle West motorway operations complex (MOC2), Rozelle East motorway operations complex (MOC3) and Iron Cove Link motorway operations complex (MOC4) and connections to the surface road network at Lilyfield and Rozelle.
  - This stage will also include the construction of tunnels, ramps and associated infrastructure for the Rozelle interchange to provide connections to the proposed Western Harbour Tunnel and Beaches Link project. The construction of these connections will continue after the opening of Rozelle Interchange and Iron Cove Link to traffic.
- Stage 3 - Rozelle pedestrian and cycleway improvements – TfNSW will engage a contractor to improve pedestrian and cyclist connectivity between Roberts Street and Springside Street in accordance with CoA E58, which forms part of the Pedestrian and Cycle Implementation Strategy (CoA E60). Procurement for a contractor will be undertaken in Q3 2023.
  - This stage involves construction of improved pedestrian and cyclist connectivity south of Victoria Road, within the local road network between Springside Street and Roberts Street via the Rozelle Parklands. Pedestrian and cyclist connectivity will be improved with a range of initiatives including re-surfaced footpaths, traffic calming zones, cycle separators, improved signage and improved line-marking. These initiatives (or part thereof) will be implemented along Victoria Road, Springside Street, Moodie Street, Waterloo Street, Darling Street, Red Lion Street, Evans Street, Kenniff Street, Quirk Street, Gordon Street and Lilyfield Road. The remainder of the pedestrian and cyclist connectivity improvements delivered in accordance with CoA E60 will be delivered as part of the Stage 2 scope unless otherwise stated in this Staging Report.
- Stage 4 – Rozelle Parklands Enhancement – TfNSW will engage a contractor to enhance facilities in the parklands.
  - This stage involves construction of a second facilities building; two multi-purpose courts, installation of lighting towers over the AFL/cricket oval and soccer oval, and an additional toilet. The remainder of the transformation of Rozelle Rail Yards into parklands will be delivered as part of the Stage 2 scope unless otherwise stated in this Staging Report.

Further information on the works comprising each stage is contained in Sections 2.1.1, 2.1.2 and 2.1.3 below.

The rationale for the staged construction and operation of the project was based on the following considerations:

- Making the scope of the project more manageable by dividing the works into separate construction contracts
- Easing current congestion issues along Parramatta Road and providing connectivity with the other WestConnex tunnels, via the Mainline tunnels, early, ahead of the Rozelle interchange being operational
- Allowing more time to resolve the complex design and construction issues associated with the Rozelle interchange.
- Delivering the Stage 3 improved pedestrian and cyclist connectivity in the demobilisation, commissioning, completion and operational phase of Stage 2 to minimise cumulative impacts of works in Rozelle.
- Utilising a risk management-based approach to address the inherent risks associated with the large scale construction activities undertaken in Stage 1 and Stage 2 comparable to the smaller scale construction activities undertaken in Stage 3.
- Delivering the Stage 4 Rozelle Parklands Enhancement in Consultation with Council and in line with the Rozelle Parklands Working Group Final Recommendation Report to improve the recreational experience of the community by creating a diverse range of uses and interests.

The staging strategy for the project focuses on balancing the need for construction to occur in a safe and efficient manner, while managing constructability constraints and minimising impacts on local communities, the environment, and users of the surrounding road and other transport networks.

The duration of construction is significantly influenced by the complexity and magnitude of the interfaces between tunnelling activities and the construction of the surface civil structures. The staging strategy will seek to minimise the risk to delivery timing and impacts on nearby communities, including cumulative impacts from construction at Haberfield and St Peters (refer to Section 2.1.2).

The project will be operated in multiple stages, with the operation of the project commencing in accordance with the staged construction strategy. WestConnex will be responsible for the operation of Stage 1 and 2 of the project, as part of the overall WestConnex program of works. Stage 3 of the project will be delivered within the Inner West Council local road network and on state classified Victoria Road. TfNSW will be delivering Stage 4 of the project, as part of the final transformation of Rozelle Rail Yards into parklands.

## Stage 1 - Mainline tunnels

The key elements of the project that would be constructed during Stage 1 include:

- Twin, Mainline tunnels connecting the M4/Wattle Street interchange at Haberfield and the M8/St Peters interchange at St Peters
- Temporary access tunnels to provide construction access to the Mainline tunnels from the construction ancillary facilities
- Finishing works, including pavement and line marking, at the Wattle Street interchange and the St Peters interchange (to integrate the M4–M5 Link entry and exit ramps into these interchanges)
- Underground stub tunnels at the Inner West subsurface interchange that would enable future connections between the Mainline tunnels and the Rozelle interchange



- Mechanical and electrical fitout of a section of the Parramatta Road ventilation facility (being built as part of M4 project) to enable use of this facility by the M4-M5 Link project
- Construction of the Campbell Road motorway operations complex (MOC5) at St Peters including the Campbell Road ventilation facility and an intake substation for the Mainline tunnels
- Utility works including protection and/or adjustment of existing utilities, removal of redundant utilities and installation of new utilities
- Earthworks and landscaping works adjacent to permanent operational infrastructure such as the Campbell Road ventilation facility and electrical substations.

The Mainline Tunnels became operational on 20 January 2023.

## Stage 2 - Rozelle interchange

The key elements of the project that would be constructed during Stage 2 include:

- Tunnel connections between the stub tunnels at the Inner West subsurface interchange (constructed as part of Stage 1), the Rozelle interchange, the Iron Cove Link and the surface road network
- Tunnel portals, dive structures and cut-and-cover tunnels to connect the Rozelle interchange and the Iron Cove Link with the surface road network
- Upgrades and modifications to the surface road network at Lilyfield and Rozelle including City-West Link Road, The Crescent and Victoria Road/Anzac Bridge approach
- Widening and realignment of Victoria Road at the eastern abutment of Iron Cove Bridge to allow for the tunnel portals, dive structures and cut-and-cover tunnels associated with the Iron Cove Link to be built between the Victoria Road eastbound (northern) and westbound (southern) carriageways
- Civil construction to provide connections to the future Western Harbour Tunnel, including:
  - Tunnels that would allow for underground connections between the M4 and M8 motorways and the future Western Harbour Tunnel (via the M4-M5 Link Mainline tunnels). The construction of these tunnel connections will continue after the opening of Rozelle Interchange and Iron Cove Link to traffic in accordance with the Stage 2 Construction Environment Management Plan
  - A dive structure, portals and entry and exit ramps (below ground) extending from the Rozelle Rail Yards to the Western Harbour Tunnel connection tunnels. This would enable future surface connections between the City West Link/The Crescent intersection and the future Western Harbour tunnels
- Minor surface works to local roads
- A constructed wetland, a bioretention basin, bioretention swales and drainage channels at the Rozelle interchange within the Rozelle Rail Yards
- Naturalisation of a section of Whites Creek between The Crescent and Rozelle Bay
- Upgrade and widening of the culvert between the Rozelle Rail Yards and Rozelle Bay, including construction of a new headwall and outlet into Rozelle Bay northeast of the City West Link/The Crescent intersection
- A Gross Pollutant Trap (GPT) and hydrodynamic separator within King George Park
- Construction of the Rozelle West motorway operations complex (MOC2) within the Rozelle Rail Yards including a ventilation supply building and a substation
- Construction of the Rozelle East motorway operations complex (MOC3) within Rozelle Rail Yards including a ventilation exhaust facility and three ventilation outlets. Two of these ventilation outlets would be used for the M4-M5 Link project. The third outlet would be constructed for use by the future Western Harbour Tunnel project.
- Construction of the Iron Cove Link motorway operation complex (MOC4) including the Iron Cove Link ventilation facility. This facility would be split with the ventilation outlet located between the eastbound and westbound Victoria Road carriageways and the ventilation exhaust facility and

associated infrastructure located south of Victoria Road between Springside Street and Toelle Street

- Utility works including protection and/or adjustment of existing utilities, removal of redundant utilities and installation of new utilities
- New and upgraded pedestrian and cyclist facilities at Rozelle and Lilyfield (separate to the Stage 3 Rozelle pedestrian and cycleway improvements)
- Earthworks and landscaping works, including:
  - Adjacent to permanent operational infrastructure such as ventilation facilities, water treatment facilities and substations
  - Adjacent to disturbed areas, such as surface roads that are being upgraded and improved as part of the project
  - Within the Rozelle Rail Yards, associated with the provision of new open space at this location
  - Around the Iron Cove Link tunnel portals, and south of Victoria Road at Rozelle between around Springside Street and Byrnes Street.

It is noted that the Rozelle interchange works are subject to ongoing detailed design and construction planning and the key elements may be subject to refinement and/or modification. It is envisaged the Rozelle Interchange will become operational in Q4 2023.

## Stage 3 - Rozelle pedestrian and cycleway improvements

The key low impact work elements of the project that would be constructed during Stage 3 include:

- A raised threshold at the intersection of Moodie Street and Victoria Road and a single direction cycle lane with a cycle separator along both sides of Moodie Street between Victoria Road and Waterloo Street with on-road cycle markings
- Reinstate cycle line markings along Waterloo Street
- Reinstate cycle line markings along Darling Street between Waterloo Street and Red Lion Street
- Mill and re-sheet of Red Lion Street to improve motorist and cyclist ride quality. Reinstatement of bicycle lane markings along Belmore Street and Red Lion Street with additional signage also instated.
- A raised threshold at the end of Red Lion Street prior to the intersection with Evans Street
- Addition of two raised thresholds within Evans Street one near Red Lions Street and the other near Belmore Street
- A raised threshold in Kenniff Street near Evans Street
- Cycle lane markings along Kenniff Street, Elizabeth Street and Quirk Street as far as Gordon Street
- Traffic calming measures along Gordon Street between Quirk Street and Lilyfield Road including raised thresholds at the intersection of Quirk Street and Gordon Street.

For Victoria Road, the following sign relocations are required:

- The Red-light speed camera sign is proposed to be relocated further away from the kerb north of Crystal Street. This removes an obstacle from the southbound cycleway and allows for a smoother shared path which improves safety for pedestrians and cyclists.
- Relocation of the Children Crossing sign between Crystal and Wellington Streets to enhance safety for pedestrians and cyclists in proximity to petrol station. Children Crossing sign is proposed to move 1m from power pole in proximity to bus stop north of Wellington Street.
- Relocate bus lane and clearway sign to kerb south of Wellington Street, Cantilevered post height of 2.5m to bottom of clearway sign

- The mixed traffic sign pole south of Darling Street is proposed to be removed and replaced with new post to 2.5m above path level
- Relocation of clearway sign parking sign onto one post closer to kerb north of Ellen Street
- Proposed removal and re-installation of the red-light speed camera sign on a single post with cantilever arrangement
- Adjust height of clearway and bus lane sign to above 2.5m path level.
- Relocate pedestrian/cyclist sign closer to fence north of Evans Street.
- Relocate bus lane and clearway sign to kerb north of Mackenzie Street, height of 2.5m to bottom of clearway sign
- Relocate bus lane and clearway sign to kerb north of Loughlin Street, height of 2.5m to bottom of clearway sign
- Remove White Cruise Bay terminal posts north of Robert Street. Design and install on single post cantilever.

For Victoria Road, the following civil works are required:

- Existing footpath pavement between Crystal Street and Wellington Street is proposed to be re-surfaced with the existing pavement treatment
- Asphalt surfacing, concrete footpath and vehicle cross over for 121 Victoria Road are all proposed to be re-surfaced.

The Rozelle Stage 3 pedestrian and cycleway improvements required by CoA E58 form an inherent part of the project as described in Schedule 1 of the CoA. The Pedestrian and Cycle Implementation Strategy required by CoA E60 contemplates staging of works and requires all works arising from the Pedestrian and Cyclist Implementation Strategy (including the CoA E58 Rozelle pedestrian and cycleway improvements), to be implemented prior to the commencement of project operations, except as permitted by the CoA. As contemplated by the definition of Operation in Schedule 1 of the CoA, there may be overlap between the carrying out of construction and operation and as permitted by CoA A13, the project will be staged, with Stage 1 and Stage 2 becoming operational whilst construction of Stage 3 is undertaken.

## Stage 4 – Rozelle parklands enhancement

The key elements of the project that would be constructed during Stage 4 include:

- A second facilities building intended to be used as change rooms, toilets, storage and with provisions for a canteen facility (any use of the building as a canteen would be subject to separate approvals (if required)).
- Two multi-purpose courts to accommodate a range of sports including netball, basketball and tennis
- Installation and commissioning of lighting towers over the AFL/cricket oval and soccer oval (piling works and conduits have been undertaken during Stage 2 of the project)
- Additional toilet block adjacent to the playground area
- Utility works including protection and/or adjustment of existing utilities and installation of new utilities.

The Rozelle Parklands is a main design element of the project as described in the Urban Design and Landscape Plan. As per CoA 134, staging of the parklands is anticipated in the plan to maximise progressive public access and use of the park, with Stage 2 and 3 becoming operational whilst construction of Stage 4 is undertaken. Completion of Stage 4 is independent of the opening of the motorway.

## Works outside construction staging

Some low impact works will be undertaken outside of the stages identified in this Staging Report, subject to the process outlined in Section 3.2.1

Pedestrian cyclist improvements between Elizabeth and Quirk Streets will be completed once the Air Quality Monitoring Station (AQMS), required under conditions E25 and E26 of the M4-M5 Link CSSI – 7485 is removed. This location on eastern end of Quirk Street is currently blocked off to vehicle traffic and in turn, has opened up a dedicated cyclist and pedestrian accessway. This enables improvements to include introduction of two 1.0m landscaping areas on each side of the road and dedicated 1.5m cycle lanes. Pedestrians will also be able to utilise existing footpath located on the western edge of Quirk Street, separated from cyclists via the landscaping strip. Existing bollards on the north and south edge are proposed to be relocated to align between cycleway lanes and prevent vehicles from entering this zone. These works will be managed as restoration works when the AQMS site is decommissioned.

With condition E58 requiring improved connectivity for cyclist and pedestrians between Roberts Street and Springside Street, coordination with the Western Harbour Tunnel Project has identified the requirement for permanent power supply installation through Belmore Street and Evans Street. TfNSW has coordinated the scopes for Stage 3 of the Rozelle Interchange Project and the Western Harbour Tunnel to avoid cumulative and additional impacts on the local community. To fulfill the requirements of condition E58, Stage 3 will install permanent signage, temporary traffic calming measures (plastic speed humps bolted to asphalt) and temporary line markings in Belmore Street and Evans Street.

The permanent cyclist improvements on Belmore Street and Evans Street will be completed once permanent power supply for the Western Harbour Tunnel is completed in late 2024. TfNSW will deliver the following scope as their road restoration works:

- Addition of two permanent raised thresholds within Evans Street one near Red Lions Street and the other near Belmore Street
- Mill and re-sheet Belmore Street to improve motorist and cyclist ride quality
- Reinstatement of bicycle lane markings along Belmore Street.

## Operation

The operation of each stage of the project is the operation of the identified elements for that stage, excluding the future Western Harbour Tunnel element. In accordance with CoA A29 a post Compliance Tracking Report will be prepared for submission to DPE.

## Construction and operation timing

The total construction period for the project is expected to be around five years, which includes commissioning that would occur concurrently with the final phase of construction of the Mainline tunnels and Rozelle interchange stages.

An indicative construction and operational program is shown in Table 2. The timing specific to each Stage 3 will be subject to review as the procurement process for delivery of works evolve.

**Table 2: Indicative construction and operation timeframe**

| Stage   | Indicative construction and operation timeframe |   |   |      |   |   |      |   |   |      |   |   |      |   |   |      |   |   |      |   |   |      |   |  |
|---|---|---|---|------|---|---|------|---|---|------|---|---|------|---|---|------|---|---|------|---|---|------|---|--|
|   | 2018  |   |   | 2019 |   |   | 2020 |   |   | 2021 |   |   | 2022 |   |   | 2023 |   |   | 2024 |   |   | 2025 |   |  |
| – Stage 1: Mainline tunnels                               | –   | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – |  |
| – Stage 2: Rozelle interchange (including Iron Cove Link) | –   | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – |  |
| – Stage 3: Rozelle pedestrian and cycleway improvements   | –   | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – |  |
| – Stage 4: Rozelle Parklands Enhancement                  | –   | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – | – | –    | – |  |

★ Expected date for open to traffic

## Cumulative impacts

Cumulative impacts may occur as a result of the project being constructed concurrently, or consecutively, with other approved CSSI or SSI projects in the area, the Western Harbour Tunnel at Rozelle and Sydney Metro – CBD to the Bays. Cumulative impacts during construction of the project will be managed through compliance with the relevant CoAs and environmental management measures related to key environmental impacts including traffic and access, noise and vibration and construction fatigue.

Key CoAs established to manage cumulative impacts during construction of the project include but are not limited to:

- E67 (cumulative noise impacts of approved CSSI and SSI projects to be considered in all noise and vibration assessments)
- E72 to E78 (coordination and respite of out-of-hours works, utility works and highly noise intensive works)
- E81 to E82 and E87 to E90 (construction fatigue, amenity and noise insulation program)
- E49, E52, E54 (managing traffic and parking impacts during construction).

Further details of how compliance with these requirements will be achieved, monitored and reported during construction are provided in Section 3.2.

# Addressing Conditions of Approval

## Applicability of Conditions of Approval

An assessment has been made to identify which CoAs apply to each stage and is provided in Appendix A. Where a CoA is deemed to be relevant to a stage, it is defined as Applicable to that stage. Where a CoA does not relate to the stage, it is defined as Not Applicable. Where only part of a CoA or REMM relates to the stage, it is defined as Partially applicable. This indicates that the CoA or REMM will be at least partially complied with during the stage.

In the event where there is a refinement in design or construction methodology, the change will be considered in the context of consistency with the Minister's approval for the Project. The applicability to the CoA and REMMs to that stage shall also be reviewed as part of the consistency assessment process.

The CoAs require a number of deliverables to be produced at various times throughout construction and operation of the project. As required by the CoAs, these reports and notifications will be submitted to the Secretary as follows:

- Prior to the commencement of works or construction of each stage
- During construction of each stage
- Prior to the commencement of operation of each stage
- During operation of each stage.

An assessment has also been made to identify which Revised Environmental Management Measures (REMMs) apply to Stage 3 as provided in Appendix B.

## Environmental management approach

The project contractors are required to adhere to and implement the requirements of the CoA and REMMs to a degree that is appropriate to the applicable stage of construction / operation. Consideration of the applicability of the CoA and REMMs to each stage allows for effective and efficient management of environmental issues that is commensurate to the impacts of each project stage on each environmental management category. This assessment was based on each project stage's scope of work, relevant CoA and REMMs requirements.

Appendix D indicates the applicability of the requirements relating to each environmental management category to Stage 3 of the project. This Stage 3 Impact Register includes for each environmental management category:

- Whether the category risks will be addressed in the main EMP document;
- Whether a procedure will be prepared to support the EMP; or,
- Whether the risk is not relevant to the scope of work and is not addressed within the EMP (Not Applicable).

Additional plans and programs identified in the CoA have also been included.

Appendix D also outlines the risk assessment tool (i.e. EMP for low impact works), which would be used to manage environmental requirements during Stage 3 of the project.

Appendix E indicates the applicability of the requirements relating to each environmental management category to Stage 4 of the project.

## Low Impact Works

In accordance with the definition of 'Construction' provided in the CSSI planning approval, there is provision for some activities, such as Stage 3, to be considered low impact works.

These 'Low Impact (Minor) Works' will not be defined as 'Construction' in accordance with the definition of 'Construction' provided in the CSSI planning approval.

Low Impact (Minor) Works will only occur after the following activities have been undertaken:

- consideration of relevant regulatory requirements;
- identification of relevant CoA and REMMs; and,
- preparation of a Low Impact (Minor) Works Approval Form by the relevant contractor and approval by Transport for NSW to confirm that the works do not represent 'Construction' in accordance with the applicable planning approval. This application must include (as a minimum):
  - a detailed description of the proposed works,
  - an environmental risk assessment (including identification of actual and potential environmental impacts), identification of mitigation measures to be implemented to address any actual or potential environmental risks and/or impacts (including details on community consultation relevant to the works),
  - an Environmental Control Map, and
  - endorsement by the Environmental Representative as necessary in accordance with the nature of the Low Impact (Minor) Works and/or the definition of 'Construction' in the CSSI planning approval.

## Consistency across stages

Appendix C outlines the key CoAs that will be implemented across the construction stages, to ensure consistency in managing and reporting on the progress of the project, ensure impacts are managed consistently and the community communications for the project are undertaken consistently across both stages.

A Community Complaints Mediator (required under CoA B13) has been engaged by TfNSW to mediate the community complaints for all stages of M4-M5 Link construction, to ensure consistency when resolving community complaints or disputes.

In addition, a single Environmental Representative (ER) (required under CoA A17) and an Acoustics Advisor (required under CoA A24) have been engaged across the M4-M5 Link construction, to ensure consistency in management, reporting and interfacing between the project and DPE.

## Compliance tracking

The Compliance Tracking Program required under Condition A27 is intended to monitor compliance with the terms of the Instrument of Approval, taking into consideration the proposed staging of the project.

In accordance with CoA A27, a Compliance Tracking Program has been prepared for each stage to assess how the conditions relevant to that stage will be applied and the status of compliance. The

Compliance Tracking Program for the Mainline tunnels (Stage 1) has been endorsed by the ER and submitted to the Secretary of DPE for information. A separate Compliance Tracking Program for the Rozelle interchange (Stage 2) has been endorsed by the ER and submitted to the Secretary of DPE for information on 13 March 2019 at least one (1) month prior to the commencement of works. In accordance with CoA A29, the relevant Compliance Tracking Program will be implemented during operation of Stage 1 and for at least one year following the commencement of operation of Stage 2.

Given the small scope and duration of works for Stage 3, Compliance Tracking and Auditing will be combined into the deliverable of a Pre-Operation Compliance Report in accordance with CoA A34. Regular compliance activities, such as inspections, observations and monitoring, will be undertaken in accordance with the EMP.

Given the small scope and duration of works for Stage 4, Compliance Tracking will be undertaken through Construction Compliance Reports in accordance with CoA A33 and a Pre-Operation Compliance Report in accordance with CoA A34. Regular compliance activities, such as inspections, observations and monitoring, will be undertaken in accordance with the CEMP. Auditing will be undertaken to assess the effectiveness of controls in accordance with the schedule contained within the CEMP, which will include internal and ER audits.



## Appendix A Conditions of Approval applicability for each stage

| CoA | Description | Mainline tunnels<br>(Stage 1) | Rozelle interchange<br>(Stage 2) | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br>(Stage 3) | Rozelle Parklands Enhancement<br>(Stage 4) |
|-----|-------------|-------------------------------|----------------------------------|--|--|
|-----|-------------|-------------------------------|----------------------------------|--|--|

|    |   |            |            |            |            |
|----|---|------------|------------|------------|------------|
| A1 | <p>The CSSI must be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the <i>WestConnex M4-M5 Link Environmental Impact Statement – Volumes 1A-C and 2A-J</i> (dated August 2017) (the EIS) as amended by:</p> <ul style="list-style-type: none"> <li>a) the <i>WestConnex M4-M5 Link Submissions and Preferred Infrastructure Report</i> (dated January 2018) (the SPIR);</li> <li>b) the <i>WestConnex M4-M5 Link Mainline Tunnel Modification Report</i> (dated September 2018) (Modification 1 Report) as amended by the <i>WestConnex M4-M5 Link Mainline Tunnel Modification Response to Submissions</i> (dated November 2018) (Modification 1 RtS); and</li> <li>c) the <i>WestConnex M4-M5 Link Rozelle Interchange Iron Cove Ventilation Underground Modification Report</i> (dated November 2019) as amended by the <i>WestConnex M4-M5 Link Rozelle Interchange Iron Cove Ventilation Underground Modification Response to Submissions Report</i> (dated March 2020); and</li> <li>d) the <i>WestConnex M4-M5 Link Rozelle Interchange Glebe Island Construction Ancillary Facility Modification Report</i> (dated June 2020).</li> <li>e) the <i>WestConnex M4-M5 Link Rozelle Interchange The Crescent overpass and active transport links Modification report</i> (dated August 2019) (Modification 2 Report) as amended by the (i) <i>WestConnex M4-M5 Link Rozelle Interchange Modification The Crescent overpass and active transport links Design amendment report</i> (dated April 2020) (Modification 2 Amendment Report), (ii) <i>WestConnex M4-M5 Link Rozelle Interchange Modification The Crescent overpass and active transport links Response to Submissions Report</i> (dated April 2020) (Modification 2 RtS), and (iii) <i>WestConnex M4-M5 Link Rozelle Interchange Modification The Crescent overpass and active transport links Response to Submissions on the Design amendment report</i> (dated June 2020) (Modification 2 Amendment RtS);</li> <li>f) the <i>WestConnex M4-M5 Link Rozelle Interchange Modification Request Letter</i> (dated October 2020); and</li> <li>g) The <i>WestConnex M4-M5 Link Mainline Tunnels – Modification 7: Northcote Street Cul-de-sac Northcote Street Modification Report</i> (dated April 2022) as amended by the <i>WestConnex M4-M5 Link Mainline Tunnels Modification 7 – Northcote Street Cul-de-sac Response to Submissions Report</i> (dated August 2022).</li> </ul> | Applicable | Applicable | Applicable | Applicable |
| A2 | <p>The CSSI must 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.</p>   | Applicable | Applicable | Applicable | Applicable |

|    |   |            |            |            |            |
|----|---|------------|------------|------------|------------|
| A3 | In the event of an inconsistency between the documents listed in Condition A1 or any other document required under this approval, and a term of this approval, the term of this approval prevails to the extent of the inconsistency. <i>Note: For the purpose of this condition, there will be an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.</i>  | Applicable | Applicable | Applicable | Applicable |
| A4 | <p>The Proponent must comply with all requirements of the Secretary in relation to:</p> <ul style="list-style-type: none"> <li>a) the environmental performance of the CSSI;</li> <li>b) any document or correspondence under the terms of this approval in relation to the CSSI;</li> <li>c) any notification given to the Secretary under the terms of this approval;</li> <li>d) any audit of the construction or operation of the CSSI;</li> <li>e) compliance with the terms of this approval (including anything required to be done under this approval);</li> <li>f) the carrying out of any additional monitoring or mitigation measures; and</li> <li>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.</li> </ul>  | Applicable | Applicable | Applicable | Applicable |
| A5 | In the event that there are differing interpretations of the terms of this approval, including in relation to a condition of this approval, the Secretary's interpretation is final.  | Applicable | Applicable | Applicable | Applicable |
| A6 | <p>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 Secretary with the document. The evidence must include:</p> <ul style="list-style-type: none"> <li>a) documentation of the engagement with the party(s) identified in the condition of approval that has occurred prior to submitting the document for approval;</li> <li>b) log of the points of engagement or attempted engagement with the identified party(s) and a summary of the issues raised by them;</li> <li>c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that they have none or have failed to provide feedback after repeated requests;</li> <li>d) outline of the issues raised by the identified party(s) and how they have been addressed; and</li> </ul> | Applicable | Applicable | Applicable | Applicable |

|     |  |            |            |            |            |
|-----|--|------------|------------|------------|------------|
|     | e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.   |            |            |            |            |
| A7  | Where the terms of approval provide for Secretarial discretion (for example in relation to the timing of an action), the Proponent must provide supporting evidence so that the Secretary can consider the need, environmental impacts and consistency of any request.<br><br><i>Note: Inaction and/or expedience will not be supported as justifications for need unless it can be demonstrated that there is beneficial environmental impacts associated with the request.</i>   | Applicable | Applicable | Applicable | Applicable |
| A8  | Where a condition of this approval requires the Proponent to submit a document or notification to the Secretary or obtain an approval from the Secretary within a specified time period, the Proponent may make a written request to the Secretary seeking an alternative timeframe. Any request must be made at least one (1) month prior to the submission timeframe stipulated in the condition of approval relating to the variation request.  | Applicable | Applicable | Applicable | Applicable |
| A9  | Without limitation, all strategies, plans, programs, reviews, audits, report recommendations, protocols and the like required by the terms of this approval must be implemented by the Proponent in accordance with all requirements issued by the Secretary from time to time in respect of them.   | Applicable | Applicable | Applicable | Applicable |
| A10 | This approval lapses five (5) years after the date on which it is granted, unless works for the purpose of the CSSI are physically commenced on or before that date.   | Applicable | Applicable | Applicable | Applicable |
| A11 | The Proponent is responsible for any breaches of the conditions of this approval resulting from the actions of all persons that it invites onto any site, including contractors, sub-contractors and visitors.   | Applicable | Applicable | Applicable | Applicable |
| A12 | The CSSI may be constructed and operated in stages. Where staged construction or operation is proposed, a Staging Report (for either or both construction and operation as the case requires) must be prepared, then endorsed by the ER and then submitted to the Secretary for information. The Staging Report must be submitted to the Secretary no later than one (1) month prior to the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one (1) month prior to the commencement of operation of the first of the proposed stages of operation). | Applicable |            | Applicable | Applicable |
| A13 | The Staging Report must:   | Applicable |            | Applicable | Applicable |

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|     | <ul style="list-style-type: none"> <li>a) if staged construction is proposed, set out how the construction of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish;</li> <li>b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including general details of work and other activities to be carried out in each stage and the general timing of when operation of each stage will commence and finish (if relevant);</li> <li>c) specify the relevant conditions of approval that apply to each stage and how compliance with those conditions will be achieved across and between each of the stages of the CSSI; and</li> <li>d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.</li> </ul> |            |            |            |            |
| A14 | The CSSI must be staged in accordance with the Staging Report, as submitted to the Secretary.   | Applicable | Applicable | Applicable | Applicable |
| A15 | Where staging is proposed, the terms of this approval that apply or are relevant to the works or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.  | Applicable | Applicable | Applicable | Applicable |
| A16 | Where changes are proposed to the staging of construction or operation, a revised Staging Report must be prepared and submitted to the Secretary for information no later than one (1) month prior to the proposed change in the staging.   | Applicable | Applicable | Applicable | Applicable |
| A17 | Works must not commence until an Environmental Representative (ER) has been approved by the Secretary and engaged by the Proponent.   | Applicable | Applicable | Applicable | Applicable |
| A18 | The Secretary's approval of an ER must be sought no later than one (1) month prior to the commencement of works.  | Applicable | Applicable | Applicable | Applicable |
| A19 | The proposed ER must be a suitably qualified and experienced person who was not involved in the preparation of the EIS or SPIR, and is independent from the design and construction personnel for the CSSI.   | Applicable | Applicable | Applicable | Applicable |
| A20 | 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 Secretary for the purposes of the CSSI.  | Applicable | Applicable | Applicable | Applicable |
| A21 | <p>For the duration of the works until the completion of construction, the approved ER must:</p> <ul style="list-style-type: none"> <li>a) receive and respond to communication from the Secretary in relation to the environmental performance of the CSSI;</li> </ul>   | Applicable | Applicable | Applicable | Applicable |

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|     | <ul style="list-style-type: none"> <li>b) consider and inform the Secretary on matters specified in the terms of this approval;</li> <li>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;</li> <li>d) review documents identified in Conditions C1, C4 and C9 and any other documents that are identified by the Secretary, to ensure they are consistent with requirements in or under this approval and if so: <ul style="list-style-type: none"> <li>i) make a written statement to this effect before submission of such documents to the Secretary (if those documents are required to be approved by the Secretary), or</li> <li>ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Secretary / Department for information or are not required to be submitted to the Secretary / Department);</li> </ul> </li> <li>e) regularly monitor the implementation of the documents listed in Conditions C1, C4 and C9 to ensure implementation is being carried out in accordance with the document and the terms of this approval;</li> <li>f) as may be requested by the Secretary, help plan, attend or undertake audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A36 of this approval;</li> <li>g) as may be requested by the Secretary, assist the Department in the resolution of community complaints;</li> <li>h) assess the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities as required by Condition C24 of this approval;</li> <li>i) consider any minor amendments to be made to the CEMP, CEMP Sub-plans, Site Establishment Management Plan(s) and monitoring programs 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 Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; and</li> <li>j) prepare and submit to the Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing 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 (7) calendar days following the end of each month for the duration of the ER's engagement for the CSSI, or as otherwise agreed with the Secretary.</li> </ul> |            |            |            |            |
| A22 | 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 A21 (including preparation of the Environmental Representative Monthly Report), as well as:  | Applicable | Applicable | Applicable | Applicable |

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|     | <ul style="list-style-type: none"> <li>a) the complaints register (to be provided on a daily basis); and</li> <li>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).</li> </ul>  |            |            |            |            |
| A23 | <p>The Secretary may at any time commission an audit of an ER's exercise of its functions under Condition A21. The Proponent must:</p> <ul style="list-style-type: none"> <li>a) facilitate and assist the Secretary in any such audit; and</li> <li>b) make it a term of their engagement of an ER, that the ER facilitate and assist the Secretary in any such audit.</li> </ul>  | Applicable | Applicable | Applicable | Applicable |
| A24 | <p>A suitably qualified and experienced Acoustics Advisor (AA), who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of works and for no less than six (6) months following completion of construction of the CSSI.</p> <p>The details of the nominated AA must be submitted to the Secretary for approval no later than one (1) month before commencement of works.</p> <p>The Proponent must cooperate with the AA by:</p> <ul style="list-style-type: none"> <li>a) providing access to noise and vibration monitoring activities as they take place;</li> <li>b) providing for review of noise and vibration plans, assessments, monitoring reports, data and analyses undertaken; and</li> <li>c) considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted.</li> </ul> | Applicable | Applicable | Applicable | Applicable |
| A25 | Any activities generating noise in excess of the 'Noise affected' Noise Management Levels derived from the Interim Construction Noise Guideline must not commence until an AA, nominated under Condition A24 of this approval, has been approved by the Secretary.  | Applicable | Applicable | Applicable | Applicable |
| A26 | <p>The approved AA must:</p> <ul style="list-style-type: none"> <li>a) receive and respond to communication from the Secretary in relation to the performance of the CSSI in relation to noise and vibration;</li> <li>b) consider and inform the Secretary on matters specified in the terms of this approval relating to noise and vibration;</li> <li>c) consider and recommend, to the Proponent, improvements that may be made to avoid or minimise adverse noise and vibration impacts;</li> </ul>  | Applicable | Applicable |            | Applicable |



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|     | <p>d) review all noise and vibration documents required to be prepared under the terms of this approval and, should they be consistent with the terms of this approval, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary);</p> <p>e) regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of this approval to ensure implementation is in accordance with what is stated in the document and the terms of this approval;</p> <p>f) notify the Secretary of noise and vibration incidents in accordance with Condition A40 of this approval;</p> <p>g) in conjunction with the ER, the AA must:</p> <p>i) as may be requested by the Secretary or Community Complaints Mediator (required by Condition B13), help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits,</p> <p>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 Communication Strategy approved under Condition B2 to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary,</p> <p>iii) consider relevant minor amendments made to the 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 Secretary and, if satisfied such amendment is necessary, endorse the amendment. This does not include any modifications to the terms of this approval,</p> <p>iv) review the noise impacts of minor construction ancillary facilities, and</p> <p>v) prepare and submit to the Secretary and other relevant regulatory agencies, for information, a Monthly Noise and Vibration Report detailing the AAs actions and decisions on matters for which the AA was responsible in the preceding month. The Monthly Noise and Vibration Report must be submitted within seven (7) days following the end of each month for the duration of the AA's engagement for the CSSI, or as otherwise agreed by the Secretary.</p> |            |            |                                 |                                 |
| A27 | A Compliance Tracking Program to monitor compliance with the terms of this approval must be prepared, taking into consideration any staging of the CSSI that is proposed in a Staging Report submitted in accordance with Conditions A12 and A13 of this approval.   | Applicable | Applicable | Not Applicable, See section 3.4 | Not Applicable, See section 3.4 |

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| A28 | The Compliance Tracking Program must be endorsed by the ER and then submitted to the Secretary for information at least one (1) month prior to the commencement of works.   | Applicable | Applicable | Not Applicable, See section 3.4 | Not Applicable, See section 3.4 |
| A29 | The Compliance Tracking Program in the form required under Condition A28 of this approval must be implemented for the duration of works and for a minimum of one (1) year following commencement of operation, or for a longer period as determined by the Secretary based on the outcomes of independent environmental audits, Environmental Representative Monthly Reports and regular compliance reviews submitted through Compliance Reports. If staged operation is proposed, or operation is commenced of part of the CSSI, the Compliance Tracking Program must be implemented for the relevant period for each stage or part of the CSSI. | Applicable | Applicable | Not Applicable, See section 3.4 | Not Applicable, See section 3.4 |
| A30 | A Pre-Construction Compliance Report must be prepared and submitted to the Secretary for information no later than one (1) month prior to the commencement of construction (or each stage of construction identified in the Staging Report).  | Applicable | Applicable | Not Applicable, See section 3.4 | Not Applicable, See section 3.4 |
| A31 | The Pre-Construction Compliance Report must include:<br>a) details of how the terms of this approval that must be addressed before the commencement of construction have been complied with; and<br>b) the proposed commencement date for construction.   | Applicable | Applicable | Not Applicable, See section 3.4 | Not Applicable, See section 3.4 |
| A32 | Construction must not commence until the Pre-Construction Compliance Report has been submitted to the Secretary.  | Applicable | Applicable | Not Applicable, See section 3.4 | Not Applicable, See section 3.4 |
| A33 | Construction Compliance Reports must be prepared and submitted to the Secretary for information every six (6) months from the date of the commencement of construction for the duration of construction. The Construction Compliance Reports must include:<br>a) a results summary and analysis of environmental monitoring;<br>b) the number of any complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints;  | Applicable | Applicable | Not Applicable, See section 3.4 | Applicable, See section 3.4     |

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|     | <ul style="list-style-type: none"> <li>c) details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;</li> <li>d) a register of any consistency assessments undertaken and their status;</li> <li>e) results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit;</li> <li>f) a summary of all incidents notified in accordance with Conditions A40 and A42 of this approval; and</li> <li>g) any other matter relating to compliance with the terms of this approval or as requested by the Secretary.</li> </ul> |            |            |   |   |
| A34 | <p>A Pre-Operation Compliance Report must be prepared and submitted to the Secretary for information no later than one (1) month prior to the commencement of operation. The Pre- Operation Compliance Report must include:</p> <ul style="list-style-type: none"> <li>a) details of how the terms of this approval that must be addressed before the commencement of operation have been complied with; and</li> <li>b) the commencement date for operation.</li> </ul>   | Applicable | Applicable | Not Applicable, See section 3.4                               | Applicable, See section 3.4                                   |
| A35 | Operation must not commence until the Pre-Operation Compliance Report has been submitted for information to the Secretary.   | Applicable | Applicable | Not Applicable, See section 3.4                               | Applicable, See section 3.4                                   |
| A36 | An Environmental Audit Program for annual independent environmental auditing against the terms of this approval must be prepared in accordance with AS/NZS ISO 19011:2014 - Guidelines for Auditing Management Systems and submitted to the Secretary for information no later than one (1) month prior to the commencement of construction.   | Applicable | Applicable | Not Applicable for Audit Program<br>See section 3.4 re Audits | Not Applicable for Audit Program<br>See section 3.4 re Audits |
| A37 | The Environmental Audit Program, as submitted to the Secretary, must be implemented and complied with for the duration of construction and operation.  | Applicable | Applicable | Not Applicable, See section 3.4                               | Not Applicable, See section 3.4                               |
| A38 | All independent environmental audits of the CSSI must be conducted by a suitably qualified, experienced and independent team of experts in auditing and be documented in an Environmental Audit Report which:  | Applicable | Applicable | Not Applicable,   | Not Applicable, See section 3.4                               |

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|     | <p>a) assesses the environmental performance of the CSSI, and its effects on the surrounding environment;</p> <p>b) assesses whether the project is complying with the terms of this approval; and</p> <p>c) recommends measures or actions to improve the environmental performance of the CSSI.</p> |            |            | see section 3.4   |   |
| A39 | The Proponent must submit a copy of the Environmental Audit Report to the Secretary for information, with a response to any recommendations contained in the audit report within six (6) weeks of completing the audit.   | Applicable | Applicable | Not Applicable, see section 3.4   | Not Applicable, See section 3.4   |
| A40 | The Secretary must be notified as soon as possible and in any event within 24 hours of any incident.  | Applicable | Applicable | Applicable  | Applicable  |
| A41 | Notification of an incident under Condition A40 of this approval must include the time and date of the incident, details of the incident and must identify any consequent non-compliance with this approval.  | Applicable | Applicable | Applicable  | Applicable  |
| A42 | All written requirements of the Secretary or relevant public authority, which may be given at any point in time, to address the cause or impact of an incident must be complied with, within any timeframe specified by the Secretary or relevant public authority.                                   | Applicable | Applicable | Applicable  | Applicable  |
| A43 | If statutory notification is given to the EPA as required under the POEO Act in relation to the CSSI, such notification must also be provided to the Secretary within 24 hours after the notification was given to the EPA.   | Applicable | Applicable | Applicable  | Applicable  |
| A44 | All construction spoil haulage vehicles must be clearly marked as being for WestConnex M4-M5 Link (including CSSI application number) in such a manner to enable immediate identification within at least 50 metres of the vehicles.  | Applicable | Applicable | <p>Not Applicable – spoil is generated during excavation of the tunnel and large bulk earthworks.</p> <p>This stage does not include tunnel excavation or</p> | <p>Not Applicable</p> <p>This stage does not include tunnel excavation or large bulk earthworks</p> |

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|     |   |            |            | large bulk earthworks.  |            |
| A45 | Signage on hoardings surrounding construction ancillary facilities must include the CSSI name and application number.   | Applicable | Applicable | Not Applicable<br>(There are no construction ancillary facilities for this Stage) | Applicable |
| B1  | A Communication Strategy must be prepared to facilitate communication between the Proponent, and the community (including relevant councils, government authorities, adjoining affected landowners and businesses, and others directly impacted by the CSSI).   | Applicable | Applicable | Applicable  | Applicable |
| B2  | <p>The Communication Strategy must:</p> <ul style="list-style-type: none"> <li>a) identify people and organisations to be consulted during the design and work phases;</li> <li>b) set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the CSSI;</li> <li>c) identify opportunities to provide accessible information regarding regularly updated site construction activities, schedules and milestones at each construction site including use of construction hoardings to provide information regarding construction specific to the location;</li> <li>d) identify opportunities for the community to visit construction sites (taking into consideration on-site activities and workplace, health and safety requirements);</li> <li>e) detail the measures for advising the community in advance of upcoming utility works;</li> <li>f) provide for the formation of issue or location-based community forums that focus on key environmental management issues of concern to the relevant community(s) for the CSSI;</li> <li>g) set out procedures and mechanisms for consulting with relevant council(s) and government authorities/agencies, as required under the terms of this approval, including procedures for repeated requests and nil responses;</li> <li>h) detail the roles and responsibilities of the Public Liaison Officer(s) engaged under Condition B6;</li> <li>i) set out procedures and mechanisms: <ul style="list-style-type: none"> <li>i) through which the community can discuss or provide feedback to the Proponent,</li> <li>ii) through which the Proponent will respond to enquiries or feedback from the community, and</li> </ul> </li> </ul> | Applicable | Applicable | Applicable  | Applicable |

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|    | iii) to resolve any issues and mediate any disputes that may arise in relation to environmental management and delivery of the CSSI.   |            |            |            |  |
| B3 | The Communication Strategy must be submitted to the Secretary for approval no later than one (1) month prior to the commencement of any work.  | Applicable | Applicable | Applicable | Applicable                                 |
| B4 | Work for the purposes of the CSSI must not commence until the Communication Strategy has been approved by the Secretary.   | Applicable | Applicable | Applicable | Applicable                                 |
| B5 | The Communication Strategy, as approved by the Secretary, must be implemented for the duration of the works and for 12 months following the completion of construction.  | Applicable | Applicable | Applicable | Applicable                                 |
| B6 | A Public Liaison Officer(s) must be appointed for construction ancillary facility(s) and for utility works to assist the public with questions and complaints they may have at any time during construction. The Public Liaison Officer(s) must be available at all times that works are occurring.  | Applicable | Applicable | Applicable | Applicable                                 |
| B7 | <p>Prior to the commencement of works, the Proponent must maintain and operate a toll-free WestConnex Acquisition Assistance Line for a period of up to six (6) months following completion of the final acquisition required for the CSSI, unless otherwise agreed by the Secretary. The WestConnex Acquisition Assistance Line must provide an ongoing dispute resolution, counselling program and contact information to relevant services for all relocated persons. The WestConnex Acquisition Assistance Line must also provide first language support for relocated persons with English as a second language.</p> <p>The management of the assistance line is to be outlined within the Communication Strategy as required by Condition B1 and is to be maintained and operated separately from the standard complaints and enquiries procedure.</p> <p>The Proponent must provide all relevant contact details for the WestConnex Acquisition Assistance Line to relocated persons prior to the commencement of works.</p> <p>Nothing in this condition prevents the Proponent from utilising the existing toll-free WestConnex Acquisition Assistance Line established for the WestConnex M4 East and New M5 projects.</p> | Applicable | Applicable | Applicable | Not applicable, no acquisition for Stage 4 |
| B8 | A Complaints Management System must be prepared prior to the commencement of any works in respect of the CSSI and be implemented and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the CSSI.   | Applicable | Applicable | Applicable | Applicable                                 |

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| B9  | <p>The Complaints Management System must include a Complaints Register to be maintained recording information on all complaints received about the CSSI during the carrying out of any works associated with the CSSI and for a minimum of 12 months following the completion of construction of the CSSI. The Complaints Register must record the:</p> <ul style="list-style-type: none"> <li>a) number of complaints received;</li> <li>b) number of people affected in relation to a complaint; and</li> <li>c) nature of the complaint and means by which the complaint was addressed and whether resolution was reached, with or without mediation.</li> </ul>   | Applicable | Applicable |            | Applicable |
| B10 | <p>The Complaints Register must be provided to the Secretary upon request, within the timeframe stated in the request.</p>  | Applicable | Applicable | Applicable | Applicable |
| B11 | <p>The following must be available within one (1) month prior to the commencement of works and for 12 months following the completion of construction of the CSSI and appropriately broadcast to manage community enquiries and complaints:</p> <ul style="list-style-type: none"> <li>a) a 24 hour toll-free telephone number for the registration of complaints and enquiries about the CSSI;</li> <li>b) a postal address to which written complaints and enquires may be sent;</li> <li>c) an email address to which electronic complaints and enquiries may be transmitted;</li> <li>d) a mediation system for complaints unable to be resolved; and</li> <li>e) a mechanism for community members to make enquiries in common community languages of the area.</li> </ul> | Applicable | Applicable | Applicable | Applicable |
| B12 | <p>The telephone number, postal address and email address required under Condition B11 of this approval must be published in a newspaper circulating in the local area and on-site hoarding at each construction site before commencement of works and published in the same way again prior to the commencement of operation. This information must also be provided on the website required under Condition B17 of this approval.</p>   | Applicable | Applicable | Applicable | Applicable |
| B13 | <p>A Community Complaints Mediator that is independent of the design and construction personnel must be nominated by the Proponent, approved by the Secretary and engaged during all works associated with the CSSI. The request nominating the Community Complaints Mediator must be submitted to the Secretary for approval within one (1) month of the date of this approval.</p>  | Applicable | Applicable | Applicable | Applicable |

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| B14 | The role of the Community Complaints Mediator is to address any complaint where a member of the public is not satisfied by the Proponent's response. Any member of the public that has lodged a complaint which is registered in the Complaints Management System identified in Condition B8 may ask the Community Complaints Mediator to review the Proponent's response. The application must be submitted in writing and the Community Complaints Mediator must respond within 28 days of the request being made or other specified timeframe agreed between the Community Complaints Mediator and the member of the public.  | Applicable | Applicable | Applicable | Applicable |
| B15 | The Community Complaints Mediator will: <ul style="list-style-type: none"> <li>a) review the Proponent's unresolved disputes between the project and members of the public if the procedures and mechanisms under Condition B2(i)(iii) do not satisfactorily address complaints; and</li> <li>b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes.</li> </ul>  | Applicable | Applicable | Applicable | Applicable |
| B16 | The Community Complaints Mediator will not act before the Proponent has provided an initial response to a complaint and will not consider issues such as property acquisition where other dispute processes are provided for in this approval, or clear government policy and resolution processes are available, or matters which are not within the scope of the CSSI.   | Applicable | Applicable | Applicable | Applicable |
| B17 | A website providing information in relation to the CSSI must be established before commencement of works and maintained for the duration of works, and for a minimum of 24 months following the completion of construction of the CSSI. The following up-to-date information (excluding confidential, private and commercial information) must be published prior to works commencing and maintained on the website or dedicated pages: <ul style="list-style-type: none"> <li>a) information on the current implementation status of the CSSI;</li> <li>b) a copy of the documents listed in Condition A1 of this approval, and any documentation relating to any modifications made to the CSSI or the terms of this approval;</li> <li>c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval; and</li> <li>d) a copy of each licence or permit required and obtained in relation to the CSSI.</li> </ul> | Applicable | Applicable | Applicable | Applicable |



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|    | Where a condition(s) of this approval requires a document(s) be prepared prior to a work or construction or operational activity being undertaken, a current copy of the relevant document(s) must also be published on the website before the work / activity is undertaken.  |            |            |                                   |            |
| C1 | A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Department's Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004) to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during all stages of construction.   | Applicable | Applicable | Not Applicable, refer Appendix D. | Applicable |
| C2 | <p>The CEMP must provide:</p> <ul style="list-style-type: none"> <li>a) a description of activities to be undertaken during construction (including the scheduling of construction and figures depicting the site layouts of the construction ancillary facilities);</li> <li>b) details of environmental policies, guidelines and principles to be followed in the construction of the CSSI;</li> <li>c) a schedule for compliance auditing;</li> </ul> <hr/> <ul style="list-style-type: none"> <li>d) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the CSSI;</li> <li>e) details of how the activities described in subsection (a) of this condition will be carried out to: <ul style="list-style-type: none"> <li>i) meet the performance outcomes stated in the documents listed in Condition A1, and</li> <li>ii) manage the risks identified in the risk analysis undertaken in subsection (d) of this condition;</li> </ul> </li> <li>f) an inspection program detailing the activities to be inspected and frequency of inspections;</li> <li>g) a protocol for managing and reporting any: <ul style="list-style-type: none"> <li>i) incidents, and</li> <li>ii) non-compliances with this approval and with statutory requirements;</li> </ul> </li> <li>h) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;</li> <li>i) 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;</li> <li>j) a description of the roles and environmental responsibilities for relevant employees and their relationship with the ER;</li> </ul> | Applicable | Applicable | Not Applicable, refer Appendix D. | Applicable |

|     | <p>k) an outline of the training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval; and</p> <p>l) the process for periodic review and update of the CEMP and all associated plans and programs.</p>   |   |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
|-----|--|---|------------------------|---|------------|----------------------------------|--|-----|---------------------|-----------------------------|-----|-----------------|-----------------------------|-----|-------------|-----------------------------|-----|------------------------|--|-----|-------------|-----------|-----|-------------------------|---|-----|------------------------------|-----|-----|------------------|-----|------------|------------|---|----------------------------------|
| C3  | The CEMP must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month prior to the commencement of construction, or where construction is staged no later than one (1) month prior to the commencement of that stage.   | Applicable  | Applicable             | Not Applicable, refer Appendix D.   | Applicable |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| C4  | <p>The following CEMP Sub-plans must be prepared in consultation with the relevant authorities identified for each CEMP Sub-plan and be consistent with the CEMP referred to in the EIS.</p> <table border="1" data-bbox="313 686 1366 1181"> <thead> <tr> <th></th> <th>Required CEMP Sub-plan</th> <th>Relevant authority(s) and council(s) to be consulted for each CEMP Sub-plan</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Traffic and transport and access</td> <td>Port Authority of NSW*, Sydney Coordination Office and relevant council(s)</td> </tr> <tr> <td>(b)</td> <td>Noise and vibration</td> <td>EPA and relevant council(s)</td> </tr> <tr> <td>(c)</td> <td>Flora and fauna</td> <td>OEH and relevant council(s)</td> </tr> <tr> <td>(d)</td> <td>Air quality</td> <td>EPA and relevant council(s)</td> </tr> <tr> <td>(e)</td> <td>Soil and surface water</td> <td>DPI Water; OEH; EPA; Sydney Water; and relevant council(s)</td> </tr> <tr> <td>(f)</td> <td>Groundwater</td> <td>DPI Water</td> </tr> <tr> <td>(g)</td> <td>Non-Aboriginal heritage</td> <td>Heritage Council of NSW; Heritage Division; and relevant council(s)</td> </tr> <tr> <td>(h)</td> <td>Aboriginal cultural heritage</td> <td>OEH</td> </tr> <tr> <td>(i)</td> <td>Waste management</td> <td>N/A</td> </tr> </tbody> </table> <p>* Port Authority of NSW to be consulted when considering impacts on port land.</p> |   | Required CEMP Sub-plan | Relevant authority(s) and council(s) to be consulted for each CEMP Sub-plan | (a)        | Traffic and transport and access | Port Authority of NSW*, Sydney Coordination Office and relevant council(s) | (b) | Noise and vibration | EPA and relevant council(s) | (c) | Flora and fauna | OEH and relevant council(s) | (d) | Air quality | EPA and relevant council(s) | (e) | Soil and surface water | DPI Water; OEH; EPA; Sydney Water; and relevant council(s) | (f) | Groundwater | DPI Water | (g) | Non-Aboriginal heritage | Heritage Council of NSW; Heritage Division; and relevant council(s) | (h) | Aboriginal cultural heritage | OEH | (i) | Waste management | N/A | Applicable | Applicable | Not Applicable, refer Appendix D. The Soil Surface Water, Flora and Fauna, Non-Aboriginal Heritage, Aboriginal Heritage and Groundwater sub-plans will cease at the opening of Rozelle Interchange to traffic at which time the Rozelle Interchange Operational | Not Applicable, refer Appendix E |
|     | Required CEMP Sub-plan   | Relevant authority(s) and council(s) to be consulted for each CEMP Sub-plan |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (a) | Traffic and transport and access   | Port Authority of NSW*, Sydney Coordination Office and relevant council(s)  |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (b) | Noise and vibration  | EPA and relevant council(s)   |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (c) | Flora and fauna  | OEH and relevant council(s)   |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (d) | Air quality  | EPA and relevant council(s)   |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (e) | Soil and surface water   | DPI Water; OEH; EPA; Sydney Water; and relevant council(s)                  |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (f) | Groundwater  | DPI Water   |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (g) | Non-Aboriginal heritage  | Heritage Council of NSW; Heritage Division; and relevant council(s)         |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (h) | Aboriginal cultural heritage   | OEH   |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |
| (i) | Waste management   | N/A   |                        |   |            |                                  |  |     |                     |                             |     |                 |                             |     |             |                             |     |                        |  |     |             |           |     |                         |   |     |                              |     |     |                  |     |            |            |   |                                  |

|    |  |            |                                |  |                                     |
|----|--|------------|--------------------------------|--|-------------------------------------|
|    |  |            |                                | Environment Management Plan comes into effect. |                                     |
| C5 | <p>The CEMP Sub-plans must state how:</p> <p>a) the environmental performance outcomes identified in the documents listed in Condition A1as modified by these conditions will be achieved;</p> <p>b) the mitigation measures identified in the documents listed in Condition A1as modified by these conditions will be implemented;</p> <p>c) the relevant terms of this approval will be complied with; and</p> <p>d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed.</p> | Applicable | Applicable                     | Not Applicable, refer Appendix D.              | Not Applicable, refer Appendix E    |
| C6 | The CEMP Sub-plans must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month prior to the commencement of the construction activities to which they apply.   | Applicable | Applicable                     | Not Applicable, refer Appendix D.              | Not Applicable, refer Appendix E    |
| C7 | Any of the CEMP Sub-plans may be submitted to the Secretary along with, or subsequent to, the submission of the CEMP.  | Applicable | Applicable                     | Not Applicable, refer Appendix D.              | Not Applicable, refer Appendix E    |
| C8 | Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Secretary. The CEMP and CEMP Sub-plans, as approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where the CSSI is being staged, construction of that stage is not to commence until the relevant CEMP and CEMP sub-plans have been endorsed by the ER and approved by the Secretary.   | Applicable | Applicable                     | Not Applicable, refer Appendix D.              | Partially Applicable (no sub plans) |
| C9 | The following Construction Monitoring Programs must be prepared in consultation with the relevant authorities identified for each Construction Monitoring Program to compare actual performance of construction of the CSSI against predicted performance.   | Applicable | Applicable<br>The construction | Not Applicable,                                | Not Applicable, refer Appendix E    |

|     | Required Construction Monitoring Programs   | Relevant authority(s) and council(s) to be consulted for Construction Monitoring Program |            | Surface Water Quality and Groundwater Monitoring Program will cease at the opening of Rozelle Interchange to traffic at which time the Rozelle Interchange Operational Water Management Plan comes into effect. | refer Appendix D.                       |                                  |
|-----|---|--|------------|---|---|----------------------------------|
|     | (a) Surface Water Quality Monitoring Program  | DPI Water, Sydney Water and relevant council(s)  |            |   |   |                                  |
|     | (b) Groundwater Monitoring Program  | DPI Water, Sydney Water and relevant council(s)  |            |   |   |                                  |
|     | (c) Noise and Vibration Monitoring Program  | Relevant council(s), NSW Health  |            |   |   |                                  |
|     | (d) Blast Monitoring Program  | EPA  |            |   |   |                                  |
|     | (e) Dust Deposition Monitoring Program  | EPA  |            |   |   |                                  |
| C10 | <p>Each Construction Monitoring Program must provide:</p> <ul style="list-style-type: none"> <li>a) details of baseline data available;</li> <li>b) details of baseline data to be obtained and when;</li> <li>c) details of all monitoring of the project to be undertaken;</li> <li>d) the parameters of the project to be monitored;</li> <li>e) the frequency of monitoring to be undertaken;</li> <li>f) the location of monitoring;</li> <li>g) the reporting of monitoring and analysis results against relevant criteria;</li> <li>h) details of the methods that will be used to analyse the monitoring data;</li> <li>i) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and</li> <li>j) any consultation to be undertaken in relation to the monitoring programs.</li> </ul> |  | Applicable | Applicable  | Partially Applicable, refer Appendix D. | Not Applicable, refer Appendix E |

|     |  |  |  |   |  |
|-----|--|--|--|---|--|
| C11 | <p>The <b>Noise and Vibration Monitoring Program</b> must include:</p> <ul style="list-style-type: none"> <li>a) noise monitoring at agreed representative sensitive receiver locations adjacent to the Parramatta Road East and West construction ancillary facilities in Bland and Alt Streets to confirm that construction noise levels do not exceed the 'Noise affected' Noise Management Levels as identified in the ICNG;</li> <li>b) noise monitoring associated with <b>Condition E88</b> and Appendix E at agreed representative sensitive residential receiver locations alongside those properties bordering the Northcote Street construction ancillary facility that have been identified as eligible for construction noise treatment in Appendix E and in Paige Avenue and/or Earle Avenue located immediately outside, and to the east and west of the nominated boundary in Appendix E;</li> <li>c) for the purposes of (a) and (b), noise monitoring during the day, evening and night-time periods must be undertaken within the first month of operation of the construction ancillary facilities and must cover the range of activities (excluding activities associated with site establishment) being undertaken at the sites; and</li> <li>d) provision of real time noise and vibration monitoring data. The data must be readily available to the construction team, Proponent, <b>ER</b> and <b>AA</b>. The Department and EPA must be provided with access to the real-time monitoring data, on request.</li> </ul> | Applicable   | Applicable (Partial - the Noise and Vibration Monitoring Program for Rozelle interchange will not address Part (a), (b) or (c))                                | Partially Applicable, refer Appendix D. Part (a), (b) and (c) are Not Applicable. | Partially Applicable, refer Appendix E. Part (a), (b) and (c) are Not Applicable |
| C12 | <p>The Groundwater Monitoring Program must include:</p> <ul style="list-style-type: none"> <li>a) daily measurement of the amount of water discharged from the water treatment plants;</li> <li>b) water quality testing of the water discharged from the water treatment plants;</li> <li>c) monitoring of groundwater pore pressures in the Hawkesbury Sandstone aquifers adjacent to the tunnel alignment, in consultation with DPI Water;</li> <li>d) monitoring of groundwater electrical conductivity in key locations between saline water bodies and the tunnel as identified by the project groundwater model including: <ul style="list-style-type: none"> <li>i) in the Haberfield / Lilyfield area to the south of Iron Cove,</li> <li>ii) in the Rozelle area to the north of Rozelle Bay,</li> <li>iii) in the Annandale area to the west of Rozelle Bay,</li> <li>iv) in the Rozelle area to the south east of Iron Cove, and</li> </ul> </li> </ul>  | Applicable (Partial - the Groundwater Monitoring Program for Mainline tunnels will not address Part (d)(ii), (iii) or (iv) and Part (h)) | Applicable (Partial - the Groundwater Monitoring Program for Rozelle interchange will not address Part (d)(i) or (v)) and will cease at the opening of Rozelle | Not Applicable  | Not Applicable   |

|     |  |            |   |                                   |                                  |
|-----|--|------------|---|-----------------------------------|----------------------------------|
|     | <p>v) in the St Peters area to the north west of Alexandra Canal,</p> <p>with a minimum of two (2) groundwater monitoring wells to be provided in each key location in consultation with DPI Water;</p> <p>e) measures to record or otherwise estimate and report groundwater inflows into the tunnels during their construction;</p> <p>f) a method for providing the data collected in (a) and (b) to Sydney Water every three (3) months to demonstrate the project's compliance with the discharge criteria and, if applicable, the Proponent's trade waste licence;</p> <p>g) a method for providing the groundwater monitoring data to DPI Water every three (3) months during construction; and</p> <p>h) the installation of a minimum of two (2) groundwater open hole monitoring wells in the north Rozelle / Lilyfield area to the west of the ventilation tunnel at Iron Cove to monitor groundwater quality and groundwater levels, in consultation with DPI Water.</p> |            | Interchange to traffic at which time the Rozelle Interchange Operational Water Management Plan comes into effect. |                                   |                                  |
| C13 | The Construction Monitoring Programs must be developed in consultation with the relevant authorities as identified in Condition C9.  | Applicable | Applicable  | Not Applicable                    | Not Applicable                   |
| C14 | The Construction Monitoring Programs must be endorsed by the ER and then submitted to the Secretary for approval at least one (1) month prior to commencement of construction.   | Applicable | Applicable  | Not Applicable                    | Not Applicable                   |
| C15 | Construction must not commence until the Secretary has approved all of the required Construction Monitoring Programs relevant to that activity and all the necessary baseline data for the required monitoring programs has been collected, to which the CEMP relates.   | Applicable | Applicable  | Not Applicable                    | Not Applicable                   |
| C16 | The Construction Monitoring Programs, as approved by the 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 Secretary, whichever is the greater.   | Applicable | Applicable  | Not Applicable                    | Not Applicable                   |
| C17 | The results of the Construction Monitoring Programs must be submitted to the Secretary, and relevant regulatory authorities, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.  | Applicable | Applicable  | Not Applicable                    | Not Applicable                   |
| C18 | Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.   | Applicable | Applicable  | Not Applicable, refer Appendix D. | Not Applicable, refer Appendix E |

|      |  |            |                |                |                                 |
|------|--|------------|----------------|----------------|---------------------------------|
| C19  | The Parramatta Road East and Parramatta Road West civil sites are to be used for parking and other works that do not exceed the 'Noise affected' Noise Management Levels as identified in the ICNG.  | Applicable | Not Applicable | Not Applicable | Not Applicable                  |
| C20  | The Parramatta Road East and Parramatta Road West civil sites must not be used for spoil truck marshalling.  | Applicable | Not Applicable | Not Applicable | Not Applicable                  |
| C21  | Deleted.   |            |                |                |                                 |
| C21A | <p>Ancillary facilities that are not identified by description and location in Condition A1 can only be established and used in each case if:</p> <ul style="list-style-type: none"> <li>a) they are located within or immediately adjacent to the construction boundary; and</li> <li>b) they are not located next to sensitive receiver(s) (including where an access road is between the facility and the receiver), unless the sensitive receiver(s) (both the landowner(s) and occupier(s)) have given written acceptance to the carrying out of the relevant facility in the proposed location; and</li> <li>c) they have no impacts on heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and</li> <li>d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts.</li> </ul>  | Applicable | Applicable     | Applicable     | Applicable, CEMP to be prepared |
| C22  | <p>Before establishment of any construction ancillary facility as identified in the documents listed in Condition A1 (and excluding minor construction ancillary facilities established under Condition C24), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the construction ancillary facilities. The Site Establishment Management Plan must be prepared in consultation with the relevant council(s) and government authorities. The Plan must be submitted to the Secretary for approval one (1) month prior to establishment of any construction ancillary facilities. The Site Establishment Management Plan must detail the management of the construction ancillary facilities and include:</p> <ul style="list-style-type: none"> <li>e) a description of activities to be undertaken during establishment of the construction ancillary facility (including scheduling and duration of works to be undertaken at the site);</li> <li>f) figures illustrating the proposed operational site layout(s);</li> </ul> | Applicable | Applicable     | Not Applicable | Not Applicable                  |

|     |   |            |            |                |                                     |
|-----|---|------------|------------|----------------|-------------------------------------|
|     | <p>g) 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 works;</p> <p>h) details of how the site establishment activities described in subsection (a) of this condition will be carried out to:</p> <p>i) meet the performance outcomes stated in the documents listed in the EIS and SPIR,</p> <p>ii) to address the traffic and pedestrian impact assessment required by Condition E51, and</p> <p>iii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and</p> <p>i) a program for monitoring the performance outcomes, including a program for construction noise monitoring consistent with the requirements of Conditions C9 and C10.</p> <p>Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each construction ancillary facility.</p>  |            |            |                |                                     |
| C23 | The operation of a construction ancillary facility 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 C9 have been approved by the Secretary.  | Applicable | Applicable | Not Applicable | Partially Applicable (no sub plans) |
| C24 | <p>Lunch sheds, office sheds, and portable toilet facilities, that are not identified as a construction ancillary facility in the documents listed in Condition A1 can be established, where they satisfy the following criteria:</p> <p>a) have no greater environmental and amenity impacts than those that can be managed through the implementation of environmental measures detailed in the Site Establishment Management Plan required under Condition C22 of this approval; and</p> <p>b) are located within the project boundary; and</p> <p>c) have been assessed by the ER to have -</p> <p>i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts,</p> <p>ii) minimal environmental impact with respect to waste management and flooding, and</p> <p>iii) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.</p> | Applicable | Applicable | Applicable     | Applicable                          |



| C25  | Boundary fencing that incorporates screening must be erected around all construction ancillary facilities that are adjacent to sensitive receivers for the duration of site establishment and construction unless otherwise agreed with relevant council(s), and affected residents, business operators or landowners.  | Applicable   | Applicable | Not Applicable | Applicable     |  |                        |
|--|---|--|------------|----------------|----------------|--|------------------------|
| C26  | Boundary fencing required under Condition C25 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.   | Applicable   | Applicable | Not Applicable | Applicable     |  |                        |
| D1   | An Operational Environmental Management Plan (OEMP) must be prepared in accordance with the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004) to detail how the performance outcomes, commitments and mitigation measures made and identified in the documents listed in Condition A1 will be implemented and achieved during operation. This condition (Condition D1) does not apply if Condition D2 of this approval applies.   | Applicable   | Applicable | Not Applicable | Not Applicable |  |                        |
| D2   | An OEMP is not required for the CSSI if the Proponent has an Environmental Management System (EMS) or equivalent as agreed with the Secretary, and can demonstrate, to the written satisfaction of the Secretary, that through the EMS:   | Applicable   | Applicable | Not Applicable | Not Applicable |  |                        |
|  | <ul style="list-style-type: none"> <li>a) the performance outcomes, commitments and mitigation measures, detailed in the documents listed in Condition A1, and specified relevant terms of this approval, can be achieved;</li> <li>b) issues identified through ongoing risk analysis can be managed; and</li> <li>c) procedures are in place for rectifying any non-compliance with this approval identified during compliance auditing, incident management or any other time during operation.</li> </ul> |  |            |                |                |  |                        |
| D3   | Where an OEMP is required, the Proponent must include the following OEMP Sub-plans in the OEMP:   | Applicable   | Applicable | Not Applicable | Not Applicable |  |                        |
| <table border="1"> <thead> <tr> <th></th> <th>Required OEMP Sub-plan</th> <th>Relevant authority(s) to be consulted for each OEMP Sub-plan</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Groundwater management</td> <td>DPI Water and Sydney Water</td> </tr> </tbody> </table> |   |  |            |                |                |  | Required OEMP Sub-plan |
|  | Required OEMP Sub-plan  | Relevant authority(s) to be consulted for each OEMP Sub-plan |            |                |                |  |                        |
| (a)  | Groundwater management  | DPI Water and Sydney Water                                   |            |                |                |  |                        |
| D4   | Each of the OEMP Sub-plans must include the information set out in Condition D2 (a), (b) and (c).<br><br>The OEMP Sub-plans must be developed in consultation with relevant authorities as identified in Condition D3.  | Applicable   | Applicable | Not Applicable | Not Applicable |  |                        |

| D5  | The OEMP Sub-plans must be submitted to the Secretary as part of the OEMP.   | Applicable   | Applicable                               | Not Applicable   | Not Applicable |   |  |     |                                |  |            |            |                |                |
|-----|--|--|--|--|----------------|---|--|-----|--------------------------------|--|------------|------------|----------------|----------------|
| D6  | The OEMP or EMS or equivalent as agreed with the Secretary, must be submitted to the Secretary for information no later than one (1) month prior the commencement of operation.  | Applicable   | Applicable                               | Not Applicable   | Not Applicable |   |  |     |                                |  |            |            |                |                |
| D7  | The OEMP or EMS or equivalent as agreed with the Secretary, as submitted to the Secretary and amended from time to time, must be implemented for the duration of operation and the OEMP or EMS must be made publicly available prior to the commencement of operation.   | Applicable   | Applicable                               | Not Applicable   | Not Applicable |   |  |     |                                |  |            |            |                |                |
| D8  | <p>The following Operational Monitoring Programs must be prepared in consultation with the relevant authorities identified for each Operational Monitoring Program to compare actual operational performance against predicted performance.</p> <table border="1"> <thead> <tr> <th></th> <th>Required Operational Monitoring Programs</th> <th>Relevant authority(s) and council(s) to be consulted for each Operational Monitoring Program</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Surface Water Quality Plan &amp; Monitoring Program</td> <td>EPA; DPI Water; OEH; Sydney Water; and relevant council(s)</td> </tr> <tr> <td>(b)</td> <td>Groundwater Monitoring Program</td> <td>DPI Water, relevant council(s), EPA and Sydney Water</td> </tr> </tbody> </table>      |  | Required Operational Monitoring Programs | Relevant authority(s) and council(s) to be consulted for each Operational Monitoring Program | (a)            | Surface Water Quality Plan & Monitoring Program | EPA; DPI Water; OEH; Sydney Water; and relevant council(s) | (b) | Groundwater Monitoring Program | DPI Water, relevant council(s), EPA and Sydney Water | Applicable | Applicable | Not Applicable | Not Applicable |
|     | Required Operational Monitoring Programs   | Relevant authority(s) and council(s) to be consulted for each Operational Monitoring Program |  |  |                |   |  |     |                                |  |            |            |                |                |
| (a) | Surface Water Quality Plan & Monitoring Program  | EPA; DPI Water; OEH; Sydney Water; and relevant council(s)                                   |  |  |                |   |  |     |                                |  |            |            |                |                |
| (b) | Groundwater Monitoring Program   | DPI Water, relevant council(s), EPA and Sydney Water   |  |  |                |   |  |     |                                |  |            |            |                |                |
| D9  | <p>Each operational monitoring program must include:</p> <ul style="list-style-type: none"> <li>a) details of baseline data;</li> <li>b) details of all monitoring of the project to be undertaken;</li> <li>c) the parameters of the project to be monitored;</li> <li>d) the frequency of monitoring to be undertaken;</li> <li>e) the location of monitoring;</li> <li>f) the reporting of monitoring and analysis results against relevant criteria;</li> <li>g) details of the methods that will be employed to analyse the monitoring data;</li> <li>h) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and</li> <li>i) any consultation to be undertaken in relation to the monitoring programs.</li> </ul> | Applicable   | Applicable                               | Not Applicable   | Not Applicable |   |  |     |                                |  |            |            |                |                |
| D10 | The Operational Surface Water Quality Plan and Monitoring Program must address wetland and mosquito management.  | Applicable   | Applicable                               | Not Applicable   | Not Applicable |   |  |     |                                |  |            |            |                |                |

|     |   |  |   |                |                |
|-----|---|--|---|----------------|----------------|
| D11 | <p>The Operational Groundwater Monitoring Program must include:</p> <ul style="list-style-type: none"> <li>a) daily measurement of the amount of water discharged from all water treatment plants;</li> <li>b) water quality testing results of the water discharged from all water treatment plants;</li> <li>c) monitoring of groundwater pore pressures in the Hawkesbury Sandstone aquifers adjacent to the tunnel alignment, in consultation with DPI Water;</li> <li>d) monitoring of groundwater electrical conductivity in key locations between saline water bodies and the tunnel as identified by the project groundwater model including: <ul style="list-style-type: none"> <li>i) in the Haberfield / Lilyfield area to the south of Iron Cove,</li> <li>ii) in the Rozelle area to the north of Rozelle Bay,</li> <li>iii) in the Annandale area to the west of Rozelle Bay,</li> <li>iv) in the Rozelle area to the south east of Iron Cove, and</li> <li>v) in the St Peters area to the north west of Alexandra Canal,</li> </ul> with a minimum of two (2) groundwater monitoring wells provided in each key location in consultation with DPI Water;</li> <li>e) measures to record or otherwise estimate and report groundwater inflows into the tunnels;</li> <li>f) a method for providing the data collected in (a) and (b) to Sydney Water every three (3) months to demonstrate the project's compliance with the discharge criteria and, if applicable, the Proponent's trade waste licence;</li> <li>g) a process for annually forwarding data on the monthly volume of groundwater discharged from each water treatment plant to DPI Water for a minimum period of five (5) years, consistent with Condition D12; and</li> <li>h) the installation of a minimum of two (2) groundwater open hole monitoring wells in the north Rozelle / Lilyfield area to the west of the ventilation tunnel at Iron Cove to monitor groundwater quality and groundwater levels, in consultation with DPI Water.</li> </ul> | Applicable (Partial - the Operational Groundwater Monitoring Program for Mainline tunnels will not address Part (d)(ii), (iii) or (iv) and Part (h)) | Applicable (Partial - the Operational Groundwater Monitoring Program for Rozelle interchange will not address Part (d)(i) or (v)) | Not Applicable | Not Applicable |
| D12 | <p>Groundwater monitoring must continue for a period of at least five (5) years following the completion of construction of the Rozelle Interchange (and commence once the mainline tunnels are operational). At least one (1) month prior to the end of the five (5) year monitoring period, the Proponent must undertake a review of future monitoring requirements in consultation with DPI Water. The review must determine if additional monitoring is required, and the time period for continued monitoring. The Proponent must notify the Secretary within two (2) weeks of the review as to the outcomes of the review and any requirements for future monitoring.</p>   | Applicable   | Applicable  | Not Applicable | Not Applicable |

|     |  |            |            |                |                |
|-----|--|------------|------------|----------------|----------------|
| D13 | The Operational Monitoring Programs must be developed in consultation with relevant authorities as identified in Condition D8 of this approval.  | Applicable | Applicable | Not Applicable | Not Applicable |
| D14 | The Operational Monitoring Programs must be submitted to the Secretary for approval at least one (1) month prior to the commencement of operation.   | Applicable | Applicable | Not Applicable | Not Applicable |
| D15 | Operation must not commence until the Secretary has approved all of the required Operational Monitoring Programs, and all relevant baseline data has been collected.   | Applicable | Applicable | Not Applicable | Not Applicable |
| D16 | The Operational Monitoring Programs, as approved by the Secretary, must be implemented for the duration identified in the relevant Operational Monitoring Program or specified by the Secretary, whichever is the greater.   | Applicable | Applicable | Not Applicable | Not Applicable |
| D17 | The results of the Operational Monitoring Programs must be submitted to the Secretary, and relevant regulatory authorities, for information in the form of an Operational Monitoring Report at the frequency identified in the relevant Operational Monitoring Program.  | Applicable | Applicable | Not Applicable | Not Applicable |
| D18 | Where a relevant OEMP Sub-plan exists, the relevant Operational Monitoring Program may be incorporated into that OEMP Sub-plan.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E1  | In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the construction and operation of the CSSI.   | Applicable | Applicable | Applicable     | Applicable     |
| E2  | Prior to finalising the detailed design of the CSSI and establishing the ambient air quality monitoring stations required under Condition E24, the Proponent must establish an Air Quality Community Consultative Committee (AQCCC) to provide advice prior to and during the operation of the CSSI. The AQCCC must: <ul style="list-style-type: none"> <li>a) be comprised of - <ul style="list-style-type: none"> <li>i) two representatives from the Proponent and tunnel operator,</li> <li>ii) one representative from each of the relevant councils, whose attendance is only required when considering matters relevant to their respective local government area,</li> </ul> </li> </ul> | Applicable | Applicable | Not Applicable | Not Applicable |

|     |  |            |            |                |                |
|-----|--|------------|------------|----------------|----------------|
|     | <ul style="list-style-type: none"> <li>iii) three representatives from each local community adjacent to each ventilation facility whose attendance is only required when considering matters relevant to their respective local area, and whose appointment has been approved by an expression of interest process conducted by the Proponent in consultation with the Secretary, and</li> <li>iv) a Chair who is an independent from the design and construction of the CSSI put forward by the Proponent and approved by the Secretary;</li> </ul> <p>b) meet at least four (4) times a year, or as otherwise agreed by the Chair and the Secretary;</p> <ul style="list-style-type: none"> <li>c) review and provide advice on the location of the air quality monitoring stations required under Condition E24, operation environmental management plans and other operation stage documents, compliance tracking reporting, audit reports, or complaints as they relate to air quality; and</li> <li>d) provide advice on the dissemination of monitoring results and other information on air quality issues.</li> </ul> <p>The AQCCC may comprise the same members of the AQCCC established under CSSI approvals for the WestConnex M4 East and New M5 projects (SSI 6307 and SSI 6788) in relation to the ventilation outlets located in Haberfield and St Peters.</p> <p>The AQCCC must operate for up to two (2) years after commencement of operation, or as otherwise approved or directed by the Secretary, in consultation with the Chair.</p> |            |            |                |                |
| E2A | <p>The concentration of a pollutant discharged from the ventilation outlets must not exceed the respective limits specified for that pollutant in Table 3A.</p> <p>Table 3A: Ventilation Outlet Mass Pollutant Concentrations</p>  | Applicable | Applicable | Not Applicable | Not Applicable |

| E3   | <table border="1"> <thead> <tr> <th>Pollutant</th> <th>100 percentile limit</th> <th>Units of measurements</th> <th>Averaging period</th> <th>Reference conditions</th> </tr> </thead> <tbody> <tr> <td>Solid particles</td> <td>1.1</td> <td>mg/m<sup>3</sup></td> <td>1 hour, or the minimum sampling period specified in the relevant test method, whichever is the greater</td> <td>Dry, 273K, 101.3kPa</td> </tr> <tr> <td>NO<sub>2</sub> or NO or both, as NO<sub>2</sub> equivalent</td> <td>20</td> <td>mg/m<sup>3</sup></td> <td>1 hour block</td> <td>Dry, 273K, 101.3kPa</td> </tr> <tr> <td>NO<sub>2</sub></td> <td>2.0</td> <td>mg/m<sup>3</sup></td> <td>1 hour block</td> <td>Dry, 273K, 101.3kPa</td> </tr> <tr> <td>CO</td> <td>40</td> <td>mg/m<sup>3</sup></td> <td>1 hour rolling</td> <td>Dry, 273K, 101.3kPa</td> </tr> <tr> <td>VOC (as propane)</td> <td>4.0</td> <td>mg/m<sup>3</sup></td> <td>1 hour rolling</td> <td>Dry, 273K, 101.3kPa</td> </tr> </tbody> </table> | Pollutant            | 100 percentile limit   | Units of measurements | Averaging period     | Reference conditions | Solid particles | 1.1               | mg/m <sup>3</sup> | 1 hour, or the minimum sampling period specified in the relevant test method, whichever is the greater | Dry, 273K, 101.3kPa | NO <sub>2</sub> or NO or both, as NO <sub>2</sub> equivalent | 20              | mg/m <sup>3</sup> | 1 hour block | Dry, 273K, 101.3kPa | NO <sub>2</sub> | 2.0 | mg/m <sup>3</sup> | 1 hour block | Dry, 273K, 101.3kPa | CO | 40 | mg/m <sup>3</sup> | 1 hour rolling | Dry, 273K, 101.3kPa | VOC (as propane) | 4.0 | mg/m <sup>3</sup> | 1 hour rolling | Dry, 273K, 101.3kPa | Applicable | Applicable | Not Applicable | Not Applicable |
|--|--|----------------------|--|-----------------------|----------------------|----------------------|-----------------|-------------------|-------------------|--|---------------------|--|-----------------|-------------------|--------------|---------------------|-----------------|-----|-------------------|--------------|---------------------|----|----|-------------------|----------------|---------------------|------------------|-----|-------------------|----------------|---------------------|------------|------------|----------------|----------------|
|  | Pollutant  | 100 percentile limit | Units of measurements  | Averaging period      | Reference conditions |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| Solid particles  | 1.1  | mg/m <sup>3</sup>    | 1 hour, or the minimum sampling period specified in the relevant test method, whichever is the greater | Dry, 273K, 101.3kPa   |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| NO <sub>2</sub> or NO or both, as NO <sub>2</sub> equivalent   | 20   | mg/m <sup>3</sup>    | 1 hour block   | Dry, 273K, 101.3kPa   |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| NO <sub>2</sub>  | 2.0  | mg/m <sup>3</sup>    | 1 hour block   | Dry, 273K, 101.3kPa   |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| CO   | 40   | mg/m <sup>3</sup>    | 1 hour rolling   | Dry, 273K, 101.3kPa   |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| VOC (as propane)   | 4.0  | mg/m <sup>3</sup>    | 1 hour rolling   | Dry, 273K, 101.3kPa   |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| <p>The tunnel ventilation system must be designed and operated so that the average concentrations of CO and NO<sub>2</sub>, calculated along the length of the tunnel, do not exceed the concentration limit specified for that pollutant in Table 4.</p> <table border="1"> <caption>Table 4: In-tunnel average limits along length of tunnel</caption> <thead> <tr> <th>Pollutant</th> <th>Concentration Limit</th> <th>Units of measurement</th> <th>Averaging period</th> </tr> </thead> <tbody> <tr> <td>CO</td> <td>87</td> <td>ppm</td> <td>Rolling 15-minute</td> </tr> <tr> <td>CO</td> <td>50</td> <td>ppm</td> <td>Rolling 30-minute</td> </tr> <tr> <td>NO<sub>2</sub></td> <td>0.5</td> <td>ppm</td> <td>Rolling 15-minute</td> </tr> </tbody> </table> | Pollutant  | Concentration Limit  | Units of measurement   | Averaging period      | CO                   | 87                   | ppm             | Rolling 15-minute | CO                | 50   | ppm                 | Rolling 30-minute  | NO <sub>2</sub> | 0.5               | ppm          | Rolling 15-minute   |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| Pollutant  | Concentration Limit  | Units of measurement | Averaging period   |                       |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| CO   | 87   | ppm                  | Rolling 15-minute  |                       |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| CO   | 50   | ppm                  | Rolling 30-minute  |                       |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| NO <sub>2</sub>  | 0.5  | ppm                  | Rolling 15-minute  |                       |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| E4   | <p>The concentration of CO as measured at any single point in the tunnel must not exceed the concentration limit specified for that pollutant in Table 5 under all traffic scenarios.</p> <table border="1"> <caption>Table 5: In-tunnel single point exposure limits</caption> <thead> <tr> <th>Pollutant</th> <th>Concentration Limit</th> <th>Units of measurement</th> <th>Averaging period</th> </tr> </thead> <tbody> <tr> <td>CO</td> <td>200</td> <td>ppm</td> <td>Rolling 3-minute</td> </tr> </tbody> </table>   | Pollutant            | Concentration Limit  | Units of measurement  | Averaging period     | CO                   | 200             | ppm               | Rolling 3-minute  | Applicable   | Applicable          | Not Applicable   | Not Applicable  |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| Pollutant  | Concentration Limit  | Units of measurement | Averaging period   |                       |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |
| CO   | 200  | ppm                  | Rolling 3-minute   |                       |                      |                      |                 |                   |                   |  |                     |  |                 |                   |              |                     |                 |     |                   |              |                     |    |    |                   |                |                     |                  |     |                   |                |                     |            |            |                |                |

| E5         | <p>The tunnel ventilation system must be designed and operated so that the visibility in the tunnel does not exceed the level specified in Table 6.</p> <table border="1" data-bbox="315 252 1137 467"> <caption>Table 6: In-tunnel visibility limits along length of tunnel</caption> <thead> <tr> <th>Parameter</th> <th>Average extinction co-efficient Limit</th> <th>Units of measurement</th> <th>Averaging period</th> </tr> </thead> <tbody> <tr> <td>Visibility</td> <td>0.005</td> <td>m<sup>-1</sup></td> <td>Rolling 15-minute</td> </tr> </tbody> </table>   | Parameter            | Average extinction co-efficient Limit | Units of measurement | Averaging period | Visibility | 0.005 | m <sup>-1</sup> | Rolling 15-minute | Applicable | Applicable | Not Applicable | Not Applicable |
|------------|---|----------------------|---------------------------------------|----------------------|------------------|------------|-------|-----------------|-------------------|------------|------------|----------------|----------------|
| Parameter  | Average extinction co-efficient Limit   | Units of measurement | Averaging period                      |                      |                  |            |       |                 |                   |            |            |                |                |
| Visibility | 0.005   | m <sup>-1</sup>      | Rolling 15-minute                     |                      |                  |            |       |                 |                   |            |            |                |                |
| E6         | <p>Should ambient monitoring of air pollutants exceed the following goals, the provisions of Conditions E32, E33 and E34 will apply:</p> <ul style="list-style-type: none"> <li>a) CO – 8 hour rolling average of 9.0 ppm (NEPM);</li> <li>b) NO<sub>2</sub> – One hour average of 0.12 ppm (245 µg/m<sup>3</sup>) (NEPM);</li> <li>c) PM<sub>10</sub> – 24 hour average of 50 µg/m<sup>3</sup> (NEPM);</li> <li>d) PM<sub>2.5</sub> – 24 hour average of 25 µg/m<sup>3</sup> (NEPM);</li> <li>e) PM<sub>10</sub> – annual average of 25 µg/m<sup>3</sup> (NEPM); and</li> <li>f) PM<sub>2.5</sub> – annual average of 8 µg/m<sup>3</sup> (NEPM).</li> </ul> <p><i>Note: The notification and reporting obligations under conditions E32, E33 and E34 relating to ambient monitoring will begin at the commencement of operation of the CSSI. The first annual average concentrations for PM<sub>10</sub> and PM<sub>2.5</sub> must be calculated on the first day the project has been in operation for 12 months and on a rolling basis thereafter.</i></p> | Applicable           | Applicable                            | Not Applicable       | Not Applicable   |            |       |                 |                   |            |            |                |                |
| E7         | <p>Conditions E2A, E3, E4, E5, and E6 do not apply in an emergency, as defined in the OEMP required by Condition D1.</p>  | Applicable           | Applicable                            | Not Applicable       | Not Applicable   |            |       |                 |                   |            |            |                |                |
| E8         | <p>The Proponent must, as soon as reasonably practicable, notify the Secretary and the EPA of any discharge during an emergency.</p>  | Applicable           | Applicable                            | Not Applicable       | Not Applicable   |            |       |                 |                   |            |            |                |                |
| E9         | <p>The tunnel ventilation systems must be designed, constructed and operated so as to only release emissions from ventilation outlets and not from the portals or the tunnel support facilities as identified in the documents listed in Condition A1, except for emergency smoke management purposes in the event of a fire in a tunnel or periodic testing of the system as defined in the OEMP required by Condition D1.</p>   | Applicable           | Applicable                            | Not Applicable       | Not Applicable   |            |       |                 |                   |            |            |                |                |

| E10                                       | All tunnels must be designed and constructed so as to allow for future modification of the ventilation system if required. The Proponent must submit a report to the Secretary demonstrating how this will be allowed for prior to finalising detailed design.  | Applicable               | Applicable       | Not Applicable           | Not Applicable          |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
|---|---|--------------------------|------------------|--------------------------|-------------------------|----------------------------|-------------|-------------------------------|---------|--------------------------------|-------------|---|-------|-------------|-------|-------------|-------|-------------|-------|-------------|------------------------|--------------------|-------------|------------|------------|----------------|----------------|
| E11                                       | The tunnel ventilation outlets must be constructed at the locations specified in Appendices A, B and C.   | Applicable               | Applicable       | Not Applicable           | Not Applicable          |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
| E12                                       | The ventilation outlets must be constructed to tip heights within the following ranges:<br><table border="1" data-bbox="318 448 1144 866"> <thead> <tr> <th>Location</th> <th>Outlet Reference</th> <th>Outlet Elevation (m AHD)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">City West Link, Rozelle</td> <td>H – Western Harbour Tunnel</td> <td>39.2 – 42.2</td> </tr> <tr> <td>I – M4-M5 Link/Iron Cove Link</td> <td>40 - 43</td> </tr> <tr> <td>J – M4-M5 Link/ Iron Cove Link</td> <td>39.5 – 42.5</td> </tr> <tr> <td rowspan="4">Campbell Road, St Peters (K – M4-M5 Link)</td> <td>SPI-5</td> <td>32.9 – 35.9</td> </tr> <tr> <td>SPI-6</td> <td>32.9 – 35.9</td> </tr> <tr> <td>SPI-7</td> <td>32.8 – 35.8</td> </tr> <tr> <td>SPI-8</td> <td>32.6 – 35.6</td> </tr> <tr> <td>Victoria Road, Rozelle</td> <td>L – Iron Cove Link</td> <td>43.2 – 46.2</td> </tr> </tbody> </table> | Location                 | Outlet Reference | Outlet Elevation (m AHD) | City West Link, Rozelle | H – Western Harbour Tunnel | 39.2 – 42.2 | I – M4-M5 Link/Iron Cove Link | 40 - 43 | J – M4-M5 Link/ Iron Cove Link | 39.5 – 42.5 | Campbell Road, St Peters (K – M4-M5 Link) | SPI-5 | 32.9 – 35.9 | SPI-6 | 32.9 – 35.9 | SPI-7 | 32.8 – 35.8 | SPI-8 | 32.6 – 35.6 | Victoria Road, Rozelle | L – Iron Cove Link | 43.2 – 46.2 | Applicable | Applicable | Not Applicable | Not Applicable |
| Location                                  | Outlet Reference  | Outlet Elevation (m AHD) |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
| City West Link, Rozelle                   | H – Western Harbour Tunnel  | 39.2 – 42.2              |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
|   | I – M4-M5 Link/Iron Cove Link   | 40 - 43                  |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
|   | J – M4-M5 Link/ Iron Cove Link  | 39.5 – 42.5              |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
| Campbell Road, St Peters (K – M4-M5 Link) | SPI-5   | 32.9 – 35.9              |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
|   | SPI-6   | 32.9 – 35.9              |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
|   | SPI-7   | 32.8 – 35.8              |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
|   | SPI-8   | 32.6 – 35.6              |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
| Victoria Road, Rozelle                    | L – Iron Cove Link  | 43.2 – 46.2              |                  |                          |                         |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
| E13                                       | A Tunnel Ventilation, Traffic Incident Response and Traffic Management Systems Integration Protocol (Protocol) must be prepared in consultation with the TMC. The Protocol must be reviewed and endorsed by a suitably qualified and experienced independent ventilation specialist. The Protocol must demonstrate that the ventilation and traffic management systems would operate together to ensure conditions of this approval are met.  | Applicable               | Applicable       | Not Applicable           | Not Applicable          |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
| E14                                       | The Tunnel Ventilation, Traffic Incident Response and Traffic Management Systems Integration Protocol must include a commissioning procedure that is to be carried out before a tunnel (or any part of it) is opened to traffic.  | Applicable               | Applicable       | Not Applicable           | Not Applicable          |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |
| E15                                       | The Tunnel Ventilation, Traffic Incident Response and Traffic Management Systems Integration Protocol must be submitted to the Secretary for information no later than one (1) month prior to commencement of operation of a tunnel (whether in full or in part).   | Applicable               | Applicable       | Not Applicable           | Not Applicable          |                            |             |                               |         |                                |             |   |       |             |       |             |       |             |       |             |                        |                    |             |            |            |                |                |



|      |   |            |            |                |                |
|------|---|------------|------------|----------------|----------------|
| E16  | The Tunnel Ventilation, Traffic Incident Response and Traffic Management Systems Integration Protocol, must be implemented for the duration of operation.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E17  | <p>Prior to commencing operation, a person or organisation, who is independent from the design and construction of the CSSI, whose appointment has been approved by the Secretary, must review the in-tunnel ventilation and ventilation outlet design of the project and the Tunnel Ventilation, Traffic Incident Response and Traffic Management Systems Integration Protocol prepared in accordance with Condition E13 to verify that:</p> <p>a) the final design achieves the in-tunnel and ventilation outlet limits for all traffic conditions including congestion (as described by the regulatory worst-case scenario in Chapter 9 of the EIS);</p> <p>b) the predicted impacts of the final design are no greater than predicted in the documents listed in Condition A1 for the equivalent operating conditions; and</p> <p>c) the ventilation system has been optimised to achieve effective and responsive treatment of in-tunnel air quality and efficient energy consumption.</p> <p>The operating scenarios used to model the final design should be the same as those used in the documents listed in Condition A1. Should the design review adopt a modelling program different to that used in the EIS, the EIS predictions shall be re-modelled using the model adopted for the design review, to establish the predicted outcomes under part (b).</p> <p>The information required in this condition must be made available to the Secretary on request.</p> | Applicable | Applicable | Not Applicable | Not Applicable |
| E18  | <p>Prior to operation, permanent signage must be installed at each surface tunnel entrance and variable messaging signage provided at regular intervals throughout the tunnel to instruct tunnel users to close windows and turn on recirculated air.</p> <p>Relevant information about this instruction is to be provided on a website, operated by the Proponent, which is maintained throughout operation of the CSSI.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E19  | Prior to operation, the Proponent must investigate, in consultation with the EPA, the measures for smoky vehicle enforcement in the tunnels. The effectiveness of the smoky vehicle enforcement measures must be documented in the Independent Environmental Audit required under Condition A36.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E19A | The Proponent must install monitoring equipment to monitor pollutants from the ventilation outlets. Pollutant monitoring from the ventilation outlets (by sampling and obtaining results by analysis) must  | Applicable | Applicable | Not Applicable | Not Applicable |

be in accordance with the methods and frequencies for the pollutant parameters specified in Table 6A and be undertaken at commencement of and throughout operation.

The monitoring equipment must be verified by an independent auditor who is expert in tunnel ventilation outlet design prior to the commencement of monitoring for compliance with the requirements set out in Table 6A.

**Table 6A: Ventilation Outlet Emission Monitoring Methodologies**

| Pollutant  | Units of measure  | Frequency  | Method <sup>1</sup>           |
|--|-------------------|------------|-------------------------------|
| Solid particles  | mg/m <sup>3</sup> | Continuous | Special Method 1 <sup>4</sup> |
| Solid particles  | mg/m <sup>3</sup> | Quarterly  | TM-15                         |
| PM <sub>10</sub>   | mg/m <sup>3</sup> | Quarterly  | OM-5                          |
| PM <sub>2.5</sub>  | mg/m <sup>3</sup> | Quarterly  | OM-5                          |
| NO <sub>2</sub> or NO or both, as NO <sub>2</sub> equivalent | mg/m <sup>3</sup> | Continuous | CEM-2                         |
| NO <sub>2</sub>  | mg/m <sup>3</sup> | Continuous | CEM-2                         |
| CO   | mg/m <sup>3</sup> | Continuous | CEM-4                         |
| VOC <sup>2</sup>   | mg/m <sup>3</sup> | Continuous | CEM-8                         |
| Speciated VOC  | mg/m <sup>3</sup> | Annual     | TM-34                         |
| Speciated PAH <sup>3</sup>                                   | µg/m <sup>3</sup> | Annual     | OM-6                          |
| Parameter  | Units of measure  | Frequency  | Method <sup>1</sup>           |
| Velocity   | m/s               | Continuous | CEM-6                         |
| Volumetric flow rate   | m <sup>3</sup> /s | Continuous | CEM-6                         |
| Moisture   | %                 | Continuous | TM-22                         |
| Temperature  | °C                | Continuous | TM-2                          |
| Other  | Units of measure  | Frequency  | Method <sup>1</sup>           |
| Selection of sampling locations                              | N/A               | N/A        | TM-1                          |

Notes:

1. *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (EPA 2007) or an alternative method approved by the Secretary in consultation with the EPA.*
2. *Must include, but not be limited to: Benzene, Toluene, Xylenes, 1,3-Butadiene, Formaldehyde and Acetaldehyde.*
3. *Must include, but not limited to; 16 USEPA priority PAHs, namely; Naphthalene, Phenanthrene, Benz(a)anthracene, Benzo(a)pyrene, Acenaphthylene, Anthracene, Chrysene, Indeno(1,2,3-cd)pyrene, Acenaphthene, Fluoranthene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Fluorene, Pyrene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene.*
4. *Special Method 1 means a method approved by the Secretary in consultation with the EPA*

| E20                 | <p>The Proponent must continuously monitor (by sampling and obtaining results from analysis) the pollutants within the tunnel specified in Table 7, using the methods approved by the Secretary. Monitoring must commence on the first day of operation of the CSSI and continue throughout the operation of the CSSI.</p> <p><b>Table 7: In-Tunnel monitoring methodology</b></p> <table border="1" data-bbox="322 357 958 539"> <thead> <tr> <th>Pollutant/parameter</th> <th>Units of measure</th> </tr> </thead> <tbody> <tr> <td>CO</td> <td>ppm</td> </tr> <tr> <td>NO<sub>2</sub></td> <td>ppm</td> </tr> <tr> <td>Visibility</td> <td>m<sup>-1</sup></td> </tr> </tbody> </table> | Pollutant/parameter | Units of measure | CO             | ppm            | NO <sub>2</sub> | ppm | Visibility | m <sup>-1</sup> | Applicable | Applicable | Not Applicable | Not Applicable |
|---------------------|---|---------------------|------------------|----------------|----------------|-----------------|-----|------------|-----------------|------------|------------|----------------|----------------|
| Pollutant/parameter | Units of measure  |                     |                  |                |                |                 |     |            |                 |            |            |                |                |
| CO                  | ppm   |                     |                  |                |                |                 |     |            |                 |            |            |                |                |
| NO <sub>2</sub>     | ppm   |                     |                  |                |                |                 |     |            |                 |            |            |                |                |
| Visibility          | m <sup>-1</sup>   |                     |                  |                |                |                 |     |            |                 |            |            |                |                |
| E21                 | <p>The number and location of the monitoring stations inside the tunnel must be determined to permit an accurate calculation, per the requirements of Conditions E3, E4 and E5, and be independently verified in accordance with a methodology developed in consultation with the EPA and approved by the Secretary prior to the operation of the CSSI. As a minimum, monitoring stations must be installed near intakes to the ventilation outlets, at the entry portals and at tunnel and ramp junctions.</p>   | Applicable          | Applicable       | Not Applicable | Not Applicable |                 |     |            |                 |            |            |                |                |
| E22                 | <p>All sampling points and visibility monitoring points must be audited prior to commencing monitoring, for compliance with the requirements set out in Conditions E3, E4, E5 and E20. Verification and compliance auditing is to be undertaken by an independent person(s) or organisation(s) whose appointment has been approved by the Secretary. The independent person(s) must be a Chartered Professional Engineer (either Mechanical, Chemical or Control Systems engineer).</p>   | Applicable          | Applicable       | Not Applicable | Not Applicable |                 |     |            |                 |            |            |                |                |
| E23                 | <p>Air quality monitoring data is to be made available in as close to real time as possible, under the website reporting requirements of Condition E28.</p>   | Applicable          | Applicable       | Not Applicable | Not Applicable |                 |     |            |                 |            |            |                |                |
| E24                 | <p>The Proponent must monitor (by sampling and obtaining results by analysis) the pollutants and parameters specified in Table 8 using the sampling method, units of measure, and sampling frequency specified in the table. Monitoring must be undertaken at the following locations as a minimum:</p> <ul style="list-style-type: none"> <li>a) two ground level receptors near the Rozelle ventilation outlet, at locations suitable for detecting any impact on air quality from the outlet;</li> <li>b) two ground level receptors near the Victoria Road ventilation outlet, at locations suitable for detecting any impact on air quality from the outlet;</li> </ul>              | Applicable          | Applicable       | Not Applicable | Not Applicable |                 |     |            |                 |            |            |                |                |

- c) two ground level receptors near the Campbell Road ventilation outlet, at locations suitable for detecting any impact on air quality from the outlet with one in a location different to that established under SSI 6788; and
- d) two ground level receptors near the Haberfield ventilation outlet, at location suitable for detecting any impact on air quality from the outlet (these may be the same as those established under SSI 6307).

**Table 8: Ambient Air Quality Monitoring Methodologies**

| Pollutant                      | Units of measurement | Averaging Period | Frequency  | Method <sup>1</sup>  |
|--------------------------------|----------------------|------------------|------------|--|
| NO                             | pphm                 | 1-hour           | Continuous | AM-12  |
| NO <sub>2</sub>                | pphm                 | 1-hour           | Continuous | AM-12  |
| NO <sub>x</sub>                | pphm                 | 1-hour           | Continuous | AM-12  |
| PM <sub>10</sub>               | µg/m <sup>3</sup>    | 24-hour          | Continuous | AS3580.9.8-2008 <sup>2</sup>   |
| PM <sub>2.5</sub> <sup>5</sup> | µg/m <sup>3</sup>    | 24-hour          | Continuous | AS3580.9.13-2013 <sup>3</sup> or as otherwise agreed by the Secretary in consultation with the EPA |
| CO                             | ppm                  | 1-hour,8-hour    | Continuous | AM-6   |
| Parameter <sup>4</sup>         | Units of measurement | Averaging Period | Frequency  | Method <sup>1</sup>  |
| Wind Speed @ 10 m              | m/s                  | 1-hour           | Continuous | AM-2 & AM-4  |
| Wind Direction @ 10 m          | °                    | 1-hour           | Continuous | AM-2 & AM-4  |
| Sigma Theta @ 10 m             | °                    | 1-hour           | Continuous | AM-2 & AM-4  |
| Temperature @ 2m               | K                    | 1-hour           | Continuous | AM-4   |
| Temperature @ 10 m             | K                    | 1-hour           | Continuous | AM-4   |
| Other                          | Units of measurement | Averaging Period | Frequency  | Method <sup>1</sup>  |
| Siting                         | NA                   | NA               | NA         | AM-1 & AM-4  |

**Notes:**

1. *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (EPA, 2007) or as otherwise agreed by EPA.*
2. *AS3580.9.8-2008, Methods for the Sampling and Analysis of Ambient Air – Determination of Suspended Particulate Matter – PM10 Continuous Direct Mass Method using Tapered Element Oscillating Microbalance Analyser (Standards Australia, 2008).*
3. *AS 3580.9.13-2013, Methods for the Sampling and Analysis of Ambient Air – Determination of Suspended Particulate Matter – PM2.5 Continuous Direct Mass Method using a Tapered Element Oscillating Microbalance Analyser (Standards Australia, 2013).*

|     |   |            |            |                |                |
|-----|---|------------|------------|----------------|----------------|
|     | <p>4. <i>TBD - location for meteorological monitoring station(s) to be representative of weather conditions likely to occur in the vicinity of the Haberfield, Rozelle (including the Rozelle Rail Yards and Victoria Road) and Campbell Road ventilation outlets.</i></p> <p>5. <i>Appropriately modified to include size selective inlet for PM2.5 or as otherwise approved by the EPA.</i></p>   |            |            |                |                |
| E25 | <p>The monitoring locations must be selected with the objective of achieving like-to-like comparison of monitoring results with available pre-construction data. The locations must also allow for the review of the accuracy of predicted environmental outcomes discussed in the documents referred to in Condition A1 against monitored air quality as part of the environmental audit required under Condition A36.</p> <p>The location of the monitoring stations must be agreed to by the AQCCC and subject to landowner's and occupier's agreement.</p> <p>The establishment and operation of the monitoring stations is to be undertaken in accordance with recognised Australian standards and undertaken by an organisation accredited by NATA for this purpose and approved by the Secretary in consultation with the EPA and the AQCCC. The quality of the monitoring results must be assured through a NATA accredited process prior to the data being considered as a basis for compliance/auditing purposes.</p> | Applicable | Applicable | Not Applicable | Not Applicable |
| E26 | <p>The Proponent must commence monitoring for at least 12 continuous months prior to operation and continue monitoring for at least two (2) years following the commencement of operation. At the conclusion of the two (2) year operational monitoring period, the Proponent must review the need for the continued use of ambient monitoring stations in consultation with the AQCCC and EPA. Closure or discontinued use of an ambient monitoring station will require the approval of the Secretary.</p>  | Applicable | Applicable | Not Applicable | Not Applicable |
| E27 | <p>The Proponent must develop and implement a reporting system for ventilation outlet, in-tunnel and ambient limits. The reporting system must be approved by the Secretary and fully implemented and operational prior to operation. Minimum analytical reporting requirements for air pollution monitoring stations must be as specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA, 2007, or as updated).</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E28 | <p>Results of hourly updated real-time monitoring and relevant meteorological data must be provided on a website in an easy to interpret format. This data must be preliminary until a quality assurance check has been undertaken by a person or organisation, who is accredited by NATA for this purpose.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |

|      |  |            |            |                |                |
|------|--|------------|------------|----------------|----------------|
| E29  | The availability of monitoring data must be conveyed to the local community by way of newsletter (including translation into common community languages in the area) and newspaper advertisement at least one month prior to the commencement of operation.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E29A | The Proponent must notify the Secretary, EPA and Ministry of Health of any recordings above the emission limits (Above-Emission Limit Recording) in Condition E2A as soon as possible and within 24 hours of the recording.<br><br>This notification must provide details of the circumstances of the event, including:<br><br>(a) the nature of the event;<br><br>(b) the concentration levels that occurred;<br><br>(c) the timing and duration of the event; and<br><br>(d) the measures employed to minimise the concentration levels.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E29B | Within one (1) month of any notification of Above-Emission Limit Recording, the Proponent must prepare and submit to the EPA for information a Report on Above-Emission Limit Recording that details the cause of the exceedance, the effectiveness of any action(s) taken in response to the exceedance and the options available to prevent recurrence.<br><br>The Report on Above-Emission Limit Recording must include consideration of improvements to the tunnel air quality management system so as to achieve compliance with the ventilation outlet emission limits.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E30  | In addition to the general reporting requirements specified in Condition E27, the Proponent must notify the Secretary, EPA and Ministry of Health of any recordings above the limits specified in Conditions E3, E4 and E5 as early as possible and within 24 hours of the recorded event.<br><br>This notification must provide details of the circumstances of the event, including:<br><br>a) the nature and location of the event, including details relating to the cause;<br><br>b) the timing and duration of the event;<br><br>c) the extent and severity of the event;<br><br>d) the measures employed to minimise the concentration levels, and measures to improve visibility levels in the event that visibility levels were above the specified limit;<br><br>e) the frequency of the event, including whether an event with the same or similar circumstances has occurred previously; and | Applicable | Applicable | Not Applicable | Not Applicable |

|     |  |            |            |                |                |
|-----|--|------------|------------|----------------|----------------|
|     | f) the date when the Proponent will submit a Tunnel Air Quality Management Systems Effectiveness Report in accordance with Condition E31.  |            |            |                |                |
| E31 | <p>Within 20 working days of a request by the Secretary, the Proponent must prepare and submit to the Secretary for information a Tunnel Air Quality Management Systems Effectiveness Report on the overall system performance and cause and major contributor of any exceedances, including:</p> <ul style="list-style-type: none"> <li>a) the overall performance and concentration levels in the tunnel for the preceding six (6) month period (or since commencement of operation, where the CSSI has operated for under six (6) months), including average and maximum levels and time periods;</li> <li>b) details of any instances throughout the operation of the CSSI where pollutant concentration levels in the tunnel have exceeded the limits specified in Conditions E3, E4 and E5; and</li> <li>c) consideration of improvements to the tunnel air quality management system.</li> </ul> <p>The Tunnel Air Quality Management Systems Effectiveness Report is to be prepared by the Proponent and reviewed by a suitably qualified and experienced independent specialist(s) whose appointment has been approved by the Secretary.</p> <p>The Proponent must comply with any requirements arising from the Secretary's review of the Tunnel Air Quality Management Systems Effectiveness Report.</p>  | Applicable | Applicable | Not Applicable | Not Applicable |
| E32 | <p>The Proponent must prepare an Ambient Air Quality Goal Protocol for evaluating a potential measurement that exceeds the goals in Condition E6. The Ambient Air Quality Goal Protocol must be developed by the Proponent in consultation with the AQCCC and submitted to the Secretary for approval at least 12 months prior to the commencement of operation of the CSSI.</p> <p>The Ambient Air Quality Goal Protocol must include:</p> <ul style="list-style-type: none"> <li>a) a process for notification of a recording above the ambient air quality goals in Condition E6, subject to Condition E33;</li> <li>b) the template that would be used for the Report on Above-Goal Recording, required by Condition E34; and</li> <li>c) a process for appointing an independent person/organisation to prepare the Report on Above-Goal Recording. The process must include - <ul style="list-style-type: none"> <li>i) approval of the independent person (independent of the environmental assessment, design and construction of the CSSI) by the Secretary prior to preparation of the report, and</li> <li>ii) the appointment of the independent person/organisation at least one (1) month prior to the commencement of operation, or at some other time prior to preparation of the report with the agreement of the Secretary.</li> </ul> </li> </ul> | Applicable | Applicable | Not Applicable | Not Applicable |

|     |  |            |            |                |                |
|-----|--|------------|------------|----------------|----------------|
| E33 | <p>In addition to the general reporting requirements specified in Condition E27, the Proponent must notify the Secretary, EPA and Ministry of Health of any recordings above the goals in Condition E6 as soon as possible and within 24 hours of the recording.</p> <p>This notification must provide details of the circumstances of the event, including:</p> <ul style="list-style-type: none"> <li>a) the nature of the event;</li> <li>b) the concentration levels that occurred;</li> <li>c) the timing and duration of the event;</li> <li>d) the measures employed to minimise the concentration levels; and</li> <li>e) the date when the Proponent will submit a Report on Above-Goal Recording in accordance with Condition E34.</li> </ul>  | Applicable | Applicable | Not Applicable | Not Applicable |
| E34 | <p>Within 20 working days of any Notification of Above-Goal Recording, the Proponent must prepare and submit to the Secretary for information a Report on Above-Goal Recording that details the cause and major contributor of the exceedance, the effectiveness of any action(s) taken in response to the exceedance and the options available to prevent recurrence.</p> <p>Where the operation of the tunnel is identified to be a significant contributor to the recorded above-goal reading, the Report on Above-Goal Recording must include consideration of improvements to the tunnel air quality management system so as to achieve compliance with the ambient air quality goals, including but not limited to installation of the additional ventilation management facilities allowed for under Condition E10.</p> | Applicable | Applicable | Not Applicable | Not Applicable |
| E35 | <p>The provision, operation and maintenance (including all auditing and validation of data) of all air quality monitoring and reporting must be funded by the Proponent.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E36 | <p>All continuous emissions monitoring systems installed and operated as a requirement of Condition E21 must undergo relative accuracy test audits at an interval not exceeding 12 months, or within another timeframe agreed with the Secretary.</p>  | Applicable | Applicable | Not Applicable | Not Applicable |
| E37 | <p>The Proponent must engage a person independent from the design and construction of the CSSI, to audit the air quality monitoring (in-tunnel and ambient) for the CSSI at six (6) monthly intervals</p>  | Applicable | Applicable | Not Applicable | Not Applicable |



|     |   |            |            |                |                |
|-----|---|------------|------------|----------------|----------------|
|     | following commencement of operation of the CSSI, or at any longer interval if approved by the Secretary.  |            |            |                |                |
| E38 | The Proponent must consult with the EPA and AQCCC before nominating the proposed auditor to the Secretary. Operation of the CSSI must not commence until the auditor's appointment is approved by the Secretary.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E39 | The auditor must ensure that the operating procedures and equipment to acquire air monitoring, meteorological data and emission monitoring data and monitoring reporting comply with NATA (or equivalent) requirements and sound laboratory practice.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E40 | The Proponent must document the results of the audit and make available all audit data for inspection by the Secretary upon request. A copy of the audit report must also be issued to the Proponent and AQCCC.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E41 | The Proponent must undertake appropriate quality assurance (QA) and quality control (QC) measures for air quality and ventilation outlet emission monitoring data. This must include, but not be limited to: accreditation/quality systems; staff qualifications and training; auditing; monitoring procedure; service and maintenance; equipment or system malfunction; and records/reporting. The QA/QC measures must be approved by an expert independent from the design and construction of the CSSI. The independent expert must be approved by the Secretary prior to monitoring of air quality and ventilation outlet emissions, as appropriate.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E42 | <p>The Proponent must assist the relevant planning authority(s) in developing an air quality assessment process for inclusion in a Development Control Plan or other appropriate planning instrument, in considering planning and building approvals for new development in areas adjacent to the ventilation outlets which would be within a potential three-dimensional zone of affectation (buffer volume).</p> <p>This process must include procedures for identifying the width and height of buildings that are likely to be either affected by the plume from the ventilation outlet or affect the dispersion of the plume from the ventilation outlet through building wake effects. A part of this process, the Proponent must provide data detailing the results of modelling of pollution concentrations at various heights and distances from the ventilation outlets. This information must be provided within 18 months following the date of this approval. The Proponent must meet all reasonable costs for the development of this process and any necessary amendments to the planning instrument(s) required to implement the process.</p> | Applicable | Applicable | Not Applicable | Not Applicable |

|     |  |            |                |  |   |
|-----|--|------------|----------------|--|---|
| E43 | During construction, where bus stops are required to be temporarily closed or relocated, such closure must not occur until relocated bus stops are functioning, have similar capacity and are relocated within a 400 metre walking distance of the existing bus stop. Closures and relocation of bus stops during construction must be undertaken in consultation with Transport for NSW and relevant council(s). Wayfinding signage must be provided directing commuters to adjacent or relocated bus stops. Footpaths must be provided to any relocated bus stops such that accessibility standards are met. | Applicable | Applicable     | Applicable   | Not Applicable  |
| E44 | Prior to the commencement of operation of the CSSI, all bus stops temporarily closed or relocated must be reinstated in a manner that provides equal or improved capacity and accessibility (including footpaths) in consultation with Transport for NSW and relevant council(s).  | Applicable | Applicable     | Applicable   | Not Applicable  |
| E45 | Access to Light Rail stops must be maintained at all times.  | Applicable | Applicable     | Applicable   | Not Applicable  |
| E46 | Access to all utilities and properties must be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.  | Applicable | Applicable     | Applicable   | Applicable  |
| E47 | 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.   | Applicable | Applicable     | Applicable   | Applicable  |
| E48 | Bignell Lane, Camperdown, must be reinstated to its preimpact alignment and length prior to operation, unless otherwise approved by the Secretary following consultation with the relevant council.  | Applicable | Not Applicable | Not Applicable   | Not Applicable  |
| E49 | Spoil haulage vehicles associated with the construction of the CSSI are not permitted to use local roads within one (1) kilometre of construction works and construction ancillary facilities, unless otherwise approved by the Secretary.   | Applicable | Applicable     | Not Applicable (spoil is generated during excavation of the tunnel and large bulk earthworks in Stage 1 and Stage 2) | Not Applicable (This stage does not include tunnel excavation or large bulk earthworks) |

|      |   |            |                |                |                |
|------|---|------------|----------------|----------------|----------------|
| E49A | Use of Route A as the primary route for spoil haulage from the Northcote Street construction ancillary facility is limited to the first two (2) months of spoil haulage commencing at the Northcote Street facility or once the G-Loop is operational, whichever is the sooner, unless an alternative time period is agreed to by the Planning Secretary. During this time period, spoil haulage vehicles are permitted to use Route A only between the hours of 7:00 am and 7:00 pm.   | Applicable | Not Applicable | Not Applicable | Not Applicable |
| E49B | <p>Once the G-Loop is operational, use of Route A by spoil haulage vehicles is limited to the following circumstances:</p> <ul style="list-style-type: none"> <li>a) during the hours of 7:00 am to 9:00 am and 4:00 pm to 6:00 pm Monday to Friday (excluding public holidays) and 8:00 am to 9:00 am and 4:00 pm to 6:00 pm on Saturdays;</li> <li>b) during periods of maintenance and/or unavailability of the G-Loop (such as repairs, signal failure, unauthorised standing of vehicles);</li> <li>c) in the event that there is an incident or maintenance works on the road network in the vicinity of the Northcote Street construction ancillary facility and the G-Loop that prevents spoil haulage vehicles from accessing or travelling on Route B;</li> <li>d) in the event that there is insufficient capacity for a spoil haulage vehicle to enter the Northcote Street construction ancillary facility and it must bypass the access gate; and</li> <li>e) in peak spoil generating period(s) of no greater than six months approved by the Planning Secretary.</li> </ul> <p>Notwithstanding the above, the use of Route A is restricted to 7:00 am to 7:00 pm daily.</p> | Applicable | Not Applicable | Not Applicable | Not Applicable |
| E49C | <p>The Proponent must submit to the Planning Secretary the following information when seeking the approval of the Planning Secretary under <b>Condition 0e</b>):</p> <ul style="list-style-type: none"> <li>a) the estimated dates and duration of the peak spoil generating period;</li> <li>b) the estimated hourly number of spoil haulage vehicle trips on Route A both during and outside the hours specified in <b>Condition 0a</b>) each day during the peak spoil generating period;</li> <li>c) at least six months of data as specified in <b>Condition 0a</b>) and <b>b</b>); and</li> <li>d) analysis of the operational performance of the G-Loop, including the need to restrict the use of the G-Loop during the hours identified in <b>Condition 0a</b>).</li> </ul>  | Applicable | Not Applicable | Not Applicable | Not Applicable |
| E49D | Within four (4) months following the commencement of tunnelling at the Northcote Street construction ancillary facility, and at three (3) monthly intervals thereafter until the completion of tunnelling and   | Applicable |                | Not Applicable | Not Applicable |

|      |  |                |                |   |   |
|------|--|----------------|----------------|---|---|
|      | <p>backfilling from that site, the Proponent must submit to the Secretary data which details on an hourly basis:</p> <ul style="list-style-type: none"> <li>a) the total number of spoil haulage vehicle trips associated with tunnelling and backfilling at the Northcote Street construction ancillary facility (inbound and outbound); and</li> <li>b) the number of trips (times) spoil haulage vehicles have used Route A, and Wattle Street / Parramatta Road (instead of the M4 East Motorway tunnels) when exiting the G-Loop, including the dates and times of use as well as the reasons for use of these routes noting the criteria for use specified in <b>Condition 0</b>.</li> </ul> <p><i>Notes: For the purposes of Conditions <b>Error! Reference source not found.</b> and 0:</i></p> <ol style="list-style-type: none"> <li>1. Spoil haulage vehicles includes vehicles removing spoil from the Northcote Street construction ancillary facility during tunnelling and delivering spoil to the site to backfill the construction access tunnel;</li> <li>2. Route A from the Northcote Street construction ancillary facility is left turn onto Wattle Street, left turn on Ramsay Street, left turn on Fairlight Street, left turn on Great North Road; and</li> <li>3. Route B from the Northcote Street construction ancillary facility is left turn onto Wattle Street, continue along Wattle Street/Dobroyd Parade and left turn into G-Loop, right-hand turn onto Dobroyd Parade from G-Loop, continue along Dobroyd Parade / Wattle Street into M4 East tunnel or onto Parramatta Road.</li> </ol> |                | Not Applicable |   |   |
| E50  | Construction vehicles must not use Robert Street, Rozelle to access the White Bay Civil Site and the Glebe Island Construction Ancillary Facility site.  | Not applicable | Applicable     | Not Applicable                          | Not Applicable                                    |
| E50A | All heavy vehicles must only access and exit the Parramatta Road East and Parramatta Road West construction ancillary facilities via Parramatta Road during the operation of the facilities, except for when exiting the Parramatta Road West site and they need to travel east. In these circumstances the site may be exited via Bland Street or as otherwise approved by the Planning Secretary.  | Applicable     | Not Applicable | Not Applicable                          | Not Applicable                                    |
| E51  | <p>All requests to the Secretary for local road usage need to include a traffic and pedestrian impact assessment, and should include a swept path analysis if required. The traffic and pedestrian impact assessment, incorporated in the Site Establishment Management Plan or Traffic and Transport CEMP as relevant, must:</p> <ul style="list-style-type: none"> <li>a) demonstrate that the local road usage will not compromise the safety of the public and have minimal amenity impacts;</li> <li>b) provide details as to the date of completion of the road dilapidation surveys for the subject local roads; and</li> </ul>   | Applicable     | Applicable     | Partially Applicable, Refer Appendix D. | Not Applicable (local roads will not be required) |

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|     | <p>c) describe the measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during peak times for operation.</p>   |            |            |  |   |
| E52 | <p>Construction vehicles (including staff vehicles) associated with the CSSI must be managed to:</p> <p>a) minimise parking on public roads;</p> <p>b) minimise idling and queuing on public roads; and</p> <p>c) ensure spoil haulage vehicles must adhere to the nominated haulage routes identified in the Traffic and Transport CEMP.</p>  | Applicable | Applicable | Applicable   | Applicable  |
| E53 | <p>The locations of all construction spoil haulage vehicles must be able to be monitored in real time and the records of monitoring be made available electronically to the Secretary and the EPA upon request for a period of no less than one year following construction.</p> <p><i>Note: Refer to Condition A44 in relation to vehicle identification.</i></p>   | Applicable | Applicable | Not applicable (spoil is generated during excavation of the tunnel and large bulk earthworks in Stage 1 and Stage 2) | Not Applicable (This stage does not include tunnel excavation or large bulk earthworks) |
| E54 | <p>A Construction Parking and Access Strategy must be prepared and implemented 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:</p> <p>a) confirmation and timing of the removal of on- and off-street parking associated with construction of the CSSI;</p> <p>b) parking surveys of all parking spaces to be removed to determine current demand during peak, off-peak, school drop off and pickup, and weekend periods;</p> <p>c) consultation with affected stakeholders utilising existing on- and off-street parking stock which will be impacted as a result of construction;</p> <p>d) assessment of the impacts of changes to on- and off-street parking stock taking into consideration outcomes of consultation with affected stakeholders;</p> <p>e) 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 parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds;</p> | Applicable | Applicable | Partially Applicable, Refer Appendix D.  | Applicable  |

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|      | <p>f) provision of a shuttle bus service(s) to transport workers to site(s) and details of the shuttle bus service(s), including service timing and frequency;</p> <p>g) mechanisms for monitoring, over appropriate intervals, to determine the effectiveness of implemented mitigation measures;</p> <p>h) provision of contingency measures should the results of mitigation monitoring indicate implemented measures are ineffective; and</p> <p>i) provision of reporting of monitoring results to the Secretary and relevant council(s) at three (3) monthly intervals.</p> <p>The Construction Parking and Access Strategy must be submitted to the Secretary for approval at least one (1) month prior to the commencement of any works that impact parking.</p> |            |                |                |                |
| E55  | <p>The CSSI (including new or modified local roads, parking, pedestrian and cycle infrastructure) must be designed to meet relevant capacity, design, engineering and safety guidelines, including the Austroads Guide to Traffic Management.</p> <p>Note: This includes ensuring sufficient capacity to accommodate pedestrians and cyclists waiting during non-crossing phases at the corner of The Crescent and Johnston Street intersection.</p>   | Applicable | Applicable     | Applicable     | Not Applicable |
| E56  | <p>An independent Road Safety Audit(s) is to be undertaken by an appropriately qualified and experienced person during detailed design to assess the safety performance of new or modified local road, parking, pedestrian and cycle infrastructure provided as part of the CSSI (including ancillary facilities) to ensure that they meet the requirements of relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Management. Audit findings and recommendations must be actioned prior to construction of the relevant infrastructure and must be made available to the Secretary on request.</p>   | Applicable | Applicable     | Applicable     | Not Applicable |
| E57  | <p>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, an alternate route which complies with the relevant standards must be provided and signposted prior to the restriction or removal of the relevant pedestrian and cyclist access.</p>   | Applicable | Applicable     | Applicable     | Applicable     |
| E57A | <p>A traffic controller must be present at entry and exit points on the Parramatta Road East and West construction ancillary facilities between the hours of 7:30 am to 9:30 am and 2:30 pm and 4:30 pm during school terms whenever:</p> <p>a) a heavy vehicle is to enter or exit the site via that point; and</p> <p>b) light vehicles are entering and exiting the site at that point during staff shift change over periods.</p>  | Applicable | Not Applicable | Not Applicable | Not Applicable |

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| E58  | <p>The Proponent must provide improved connectivity for cyclist and pedestrians between Roberts Street and Springside Street, and incorporate these in the Pedestrian and Cycle Implementation Strategy required by Condition E60.</p> <p><i>Note: This condition does not specifically require work to be undertaken in the Victoria Road reservation, but could include works on the parallel local road network.</i></p>   | Not Applicable | Not Applicable | Applicable                         | Not Applicable |
| E58A | <p>The Proponent must provide east-west connectivity for cyclists and pedestrians through the Rozelle Rail Yards open space area and north-south connectivity through the Rozelle Rail Yards open space area generally between Gordon Street, Rozelle and The Crescent and incorporate these in the Pedestrian and Cycle Implementation Strategy required by Condition E60.</p>   | Not applicable | Applicable     | Not Applicable                     | Not Applicable |
| E59  | <p>Enhanced cycle facilities at Rozelle Bay light rail stop must be investigated and implemented if possible, in consultation with Transport for NSW and incorporated into the <b>Pedestrian and Cycle Implementation Strategy</b> required by <b>Condition E60</b>.</p>  | Not Applicable | Applicable     | Not Applicable                     | Not Applicable |
| E60  | <p>A detailed Pedestrian and Cycle Implementation Strategy must be included as a component of the Urban Design and Landscape Plan required by Condition E133 and reviewed by the Design Review Panel. The Strategy must be prepared in consultation with relevant council(s) and Bicycle NSW. The Strategy must be consistent with the Active Transport Strategy in Volume 2F, Appendix N of the EIS and must incorporate the requirements of Conditions E58, E58A and E59 and include:</p> <ul style="list-style-type: none"> <li>a) details of selected routes and connections to existing local and regional routes;;</li> <li>b) timing and staging of all works;</li> <li>c) infrastructure details, including lighting, safety, security, and standards compliance;</li> <li>d) signage and wayfinding measures; and</li> <li>e) details of associated landscaping works, including on the southern portion of the pedestrian and cycling green link.</li> </ul> <p>All identified works arising from this condition are to be implemented prior to the commencement of project operations, except as permitted by this approval.</p> | Not Applicable | Applicable     | Applicable (implementation of E58) | Not Applicable |

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| E61 | <p>A Road Dilapidation Report must be prepared by a suitably qualified person, for local roads (and associated infrastructure within the road reserve) proposed to be used by heavy vehicles for works associated with the CSSI, before the commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to the relevant road authorities within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by such vehicles.</p>   | Applicable     | Applicable | Applicable     | Not Applicable<br>(local roads not required) |
| E62 | <p>If damage to roads occurs as a result of the construction of CSSI, the Proponent must either:</p> <ul style="list-style-type: none"> <li>a) compensate the relevant road authority for the damage so caused. The amount of compensation may be agreed with the relevant road authority, but compensation must be paid even if no agreement is reached; or</li> <li>b) rectify the damage so as to restore the road to at least the condition it was in pre- construction.</li> </ul>   | Applicable     | Applicable | Applicable     | Applicable                                   |
| E63 | <p>Prior to the commencement of operation of the full CSSI (mainline tunnel and Rozelle Interchange), the Proponent must prepare a Road Network Performance Plan in consultation with Transport for NSW and the relevant council(s). The Plan should incorporate operational traffic modelling results from the M4 East and New M5 (SSI 6307 and SSI 6788) projects, and include:</p> <ul style="list-style-type: none"> <li>a) consideration of movement and place analysis and local initiatives, such as local area improvement strategies and potential land use changes, and any traffic changes as a result of other major road projects within the project area;</li> <li>b) an updated analysis, including modelling of traffic impacts to the adjoining road network (including impacts on local roads from rat-running), as a consequence of the CSSI;</li> <li>c) an assessment of the performance of the road network, including potential 'pinch-points' where the merging of tunnel exit traffic and surface traffic would occur at the Haberfield Interchange, the St Peters Interchange and Rozelle Interchange and Iron Cove Link; and</li> <li>d) mitigation measures to manage predicted traffic performance impacts including local area traffic management and bus priority measures as relevant.</li> </ul> <p>The Road Network Performance Plan must be submitted to the Secretary and relevant council(s). The implementation of the Plan must have commenced prior to the full operation of the CSSI. The Proponent is responsible for the implementation of the identified measures under Condition E63(d).</p> <p><i>Note: Identified mitigation measures may need to be further assessed under the Environmental Planning and Assessment Act, 1979. Works will need to meet relevant design standards and be subject to independent road safety audits.</i></p> | Not Applicable | Applicable | Not Applicable | Not Applicable                               |



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| E64 | <p>The Proponent must prepare an Operational Road Network Performance Review, within 12 months and five (5) years after the commencement of operation of the full CSSI (of the mainline tunnels and Rozelle Interchange). The Review must address road network performance and review the performance of the CSSI on the adjoining road network. The Review must confirm the adequacy of the mitigation measures identified in the Road Network Performance Plan required under Condition E63.</p> <p>The Review must be undertaken in consultation with Transport for NSW and relevant council(s) and be completed within six (6) months of the review timeframes. The Review must be provided to the Secretary within 60 days of its completion.</p> <p>Further mitigation measures, if required, must be included in the Review. The Proponent is responsible for the implementation of the identified measures.</p> <p><i>Note: Identified mitigation measures may need to be further assessed under the Environmental Planning and Assessment Act, 1979. Works will need to meet relevant design standards and to subject to independent road safety audits.</i></p> | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E65 | <p>In the event that the Rozelle Interchange is not open to traffic within 24 months of the opening of the mainline tunnel, an Operational Road Network Performance Review must be prepared prior to the operation of the Rozelle Interchange.</p>  | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E66 | <p>A detailed land use survey must be undertaken to confirm sensitive receivers (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 prior to the commencement of works which generate construction or operational noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Construction Noise and Vibration Management Sub-plan.</p>  | Applicable     | Applicable | Not Applicable | Not Applicable |
| E67 | <p>All noise and vibration assessment, management and mitigation required by this approval must consider the cumulative noise impacts of approved CSSI and SSI projects. This includes using ambient and background levels which do not include other WestConnex M4 East and New M5 (SSI 6307 and SSI 6788) projects. This condition applies to all works and operation.</p>  | Applicable     | Applicable | Applicable     | Applicable     |
| E68 | <p>Works must be undertaken during the following hours:</p>   | Applicable     | Applicable | Applicable     | Applicable     |

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|     | <ul style="list-style-type: none"> <li>a) 7:00 am to 6:00 pm Mondays to Fridays, inclusive;</li> <li>b) 8:00 am to 1:00 pm Saturdays; and</li> <li>c) at no time on Sundays or public holidays.</li> </ul>  |   |            |                |                |
| E69 | Notwithstanding Condition E68, works may be undertaken between 1:00 pm to 6:00 pm on Saturday.  | Applicable  | Applicable | Applicable     | Applicable     |
| E70 | <p>Notwithstanding Conditions E68 and E69 the following works are permitted to be undertaken 24 hours a day, seven days a week:</p> <ul style="list-style-type: none"> <li>a) tunnelling activities excluding cut and cover tunnelling;</li> <li>b) haulage of spoil, excluding from the Iron Cove civil site (C8) at which haulage is limited to the work hours specified in Conditions E68 and E69, and delivery of material;</li> <li>c) works within an acoustic shed; and</li> <li>d) tunnel fit out works.</li> </ul> <p>Other surface works associated with tunnelling must only be undertaken in accordance with the requirements of Condition E73.</p>   | <p>Applicable</p> <p>(Partial – haulage of spoil from the Iron Cove civil site (C9) is not applicable for this stage)</p> | Applicable | Not Applicable | Not Applicable |
| E71 | Deleted.  |   |            |                |                |
| E72 | <p>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:</p> <ul style="list-style-type: none"> <li>a) between the hours of 8:00 am to 6:00 pm Monday to Friday;</li> <li>b) between the hours of 8:00 am to 1:00 pm Saturday; and</li> <li>c) in continuous blocks not exceeding three (3) hours each with a minimum respite from those activities and works of not less than one (1) hour between each block.</li> </ul> <p>For the purposes of this condition, 'continuous' includes any period during which there is less than a one (1) hour respite between ceasing and recommencing any of the work that are the subject of this condition.</p> | Applicable  | Applicable | Applicable     | Applicable     |

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| E73 | <p>Notwithstanding Conditions E68 to E72 works may be undertaken outside the hours specified under those conditions in the following circumstances:</p> <ul style="list-style-type: none"> <li>a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or</li> <li>b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or</li> <li>c) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or</li> <li>d) works approved under an Out-of-Hours Work Protocol for works not subject to an EPL as required by Condition E77; or</li> <li>e) construction, excluding spoil haulage from the Iron Cove civil site (C8) at which haulage is limited to the work hours specified in Conditions E68 and E69, that causes LAeq (15 minute) noise levels: <ul style="list-style-type: none"> <li>i) no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and</li> <li>ii) no more than the 'Noise affected' noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and</li> <li>iii) continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), and</li> <li>iv) intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006).</li> </ul> </li> </ul> <p><i>Note: Section 5.24(1)(e) of the EP&amp;A Act requires that an EPL be substantially consistent with this approval. Out of Hours Works considered under <b>Conditions E73(c) and (d)</b> must be justified and include an assessment of mitigation measures.</i></p> | Applicable<br><br>(Partial – haulage of spoil from the Iron Cove civil site (C9) is not applicable for Mainline tunnels) | Applicable | Partially Applicable<br><br>E73(a), (b) and (e) are only applicable for this stage | Partially Applicable<br><br>E73(a) and (b) are only applicable for this stage |
| E74 | <p>On becoming aware of the need for emergency works in accordance with Condition E73(b), the Proponent must notify the AA, the ER and the EPA of the need for that work. The Proponent must use best endeavours to notify all noise and/or vibration affected sensitive receivers of the likely impact and duration of those works.</p>   | Applicable   | Applicable | Applicable   | Applicable  |

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| E75 | <p>Out-of-hours works that are regulated by an EPL as per Condition E73(c) or through the Out-of-Hours Work Protocol as per Condition E77 include:</p> <ul style="list-style-type: none"> <li>a) works which could result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 “Risk Management – Principles and Guidelines”; or</li> <li>b) where the relevant road network operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to road network operational performance; or</li> <li>c) where the relevant utility service operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to the operation and integrity of the utility network; or</li> <li>d) where the TfNSW Transport Management Centre (or other road authority) has advised the Proponent in writing that a road occupancy licence is required and will not be issued for the works or activities during the hours specified in Condition E68 and Condition E69; or</li> <li>e) where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required.</li> </ul> <p><i>Note: Other out-of-hours works can be undertaken with the approval of an EPL, or through the project’s <b>Out-of-Hours Work Protocol</b> for works not subject to a EPL.</i></p> | Applicable | Applicable | Applicable                      | Applicable |
| E76 | <p>In order to undertake out-of-hours work described in Condition E75, the Proponent must identify appropriate respite periods for the out-of-hours works in consultation with the community at each affected location. This consultation must include (but not be limited to) providing the community with:</p> <ul style="list-style-type: none"> <li>a) a schedule of likely out-of-hours work for a period no less than three (3) months;</li> <li>b) the potential works, location and duration;</li> <li>c) the noise characteristics and likely noise levels of the works; and</li> <li>d) likely mitigation and management measures.</li> </ul> <p>The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour works must be provided to the AA, EPA and the Secretary.</p>  | Applicable | Applicable | Applicable                      | Applicable |
| E77 | <p>An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of works which are outside the hours defined in Conditions E68 and E69, and that are not subject to an EPL. The Protocol must be approved by the Secretary prior to</p>   | Applicable | Applicable | Applicable.<br>OOHW<br>Protocol | Applicable |

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|     | <p>commencement of the works. The Protocol must be prepared in consultation with the EPA and AA. The Protocol must:</p> <ul style="list-style-type: none"> <li>a) provide a process for the consideration of out-of-hours works against the relevant noise and vibration criteria, including the determination of low and high-risk activities;</li> <li>b) provide a process for the identification of mitigation measures for residual impacts, including respite periods in consultation with the community at each affected location, consistent with the requirements of Condition E76;</li> <li>c) identify procedures to facilitate the coordination of out-of-hours works approved by an EPL to ensure appropriate respite is provided;</li> <li>d) identify an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: <ul style="list-style-type: none"> <li>i) low risk activities can be approved by the ER in consultation with the AA, and</li> <li>ii) high risk activities that are approved by the Secretary; and</li> </ul> </li> <li>e) identify Department, EPA and community notification arrangements for approved out of hours works, which maybe detailed in the Communication Strategy.</li> </ul> |            |            | already approved in accordance with this condition will apply. | OOHW Protocol already approved in accordance with this condition will apply. |
| E78 | <p>All works undertaken for the delivery of the CSSI, including those undertaken by third parties, must be coordinated to ensure respite periods are provided. The Proponent must:</p> <ul style="list-style-type: none"> <li>a) reschedule any works to provide respite to impacted noise sensitive receivers so that the respite is achieved in accordance with Condition E76; or</li> <li>b) consider the provision of alternative respite or mitigation to impacted noise sensitive receivers; and</li> <li>c) provide documentary evidence to the AA in support of any decision made by the Proponent in relation to respite or mitigation.</li> </ul>   | Applicable | Applicable | Applicable   | Applicable   |
| E79 | <p>Construction Noise and Vibration Impact Statements must be prepared for construction ancillary facility(s) before any works that result in noise and vibration impacts commence, and include specific mitigation measures identified through consultation with affected sensitive receivers. The Statements must supplement the Construction Noise and Vibration Management Sub-plan or Site Establishment Management Plan(s) and are to be implemented for the duration of the works.</p> <p>The Construction Noise and Vibration Impact Statement for the White Bay Civil Site (C11) must be prepared in consultation with the Port Authority of NSW and NSW Heritage Council.</p>   | Applicable | Applicable | Not Applicable   | Not Applicable   |
| E80 | <p>Noise generating works in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres,</p>   | Applicable | Applicable | Applicable   | Applicable   |

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|     | laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.  |            |            |   |            |
| E81 | <p>Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria:</p> <ul style="list-style-type: none"> <li>a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009);</li> <li>b) vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure);</li> <li>c) Australian Standard AS 2187.2 - 2006 "Explosives - Storage and Use - Use of Explosives";</li> <li>d) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and</li> <li>e) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage).</li> </ul> <p>Comparison against the criteria must take into account the cumulative noise and vibration levels from concurrent activities associated with the CSSI.</p> <p>Any works identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the Construction Noise and Vibration Management Sub-plan. Predicted vibration levels must be used to select the specific management measures to be applied to individual properties during construction.</p> <p><i>Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.</i></p> | Applicable | Applicable | Partially Applicable, refer Appendix D. | Applicable |
| E82 | <p>Mitigation measures must be applied when the following residential ground-borne noise levels, including cumulative levels from concurrent activities associated with the CSSI, are exceeded:</p> <ul style="list-style-type: none"> <li>a) evening (6:00 pm to 10:00 pm) — internal LAeq(15 minute): 40 dB(A); and</li> <li>b) night (10:00 pm to 7:00 am) — internal LAeq(15 minute): 35 dB(A).</li> </ul> <p>The mitigation measures must be outlined in the Construction Noise and Vibration Management Sub-plan, including in any Out-of-Hours Work Protocol, required by Condition E77. Predicted ground-</p>  | Applicable | Applicable | Applicable                              | Applicable |

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|      | borne noise levels must be used to select the specific management measures to be applied to individual properties during construction.   |                |            |   |   |
| E83  | Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owner 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 Construction Noise and Vibration Management Sub-plan.  | Applicable     | Applicable | Applicable  | Applicable  |
| E84  | The Proponent must conduct vibration testing before and during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures.   | Applicable     | Applicable | Applicable  | Applicable  |
| E85  | The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage-listed structures.   | Applicable     | Applicable | Not Applicable                                      | Not Applicable                                      |
| E86  | All acoustic sheds must be erected as soon as site establishment works at the facilities are completed and before undertaking any works which are required to be conducted within the sheds.   | Applicable     | Applicable | Not Applicable                                      | Not Applicable                                      |
| E86A | Tunnelling and excavation works from the Iron Cove civil site (C8) to construct the ventilation tunnel and caverns must not commence until the chamber beneath the roof of the cut and cover structure has been converted into a temporary acoustic shed and fitted with a roller door.  | Not Applicable | Applicable | Not Applicable                                      | Not Applicable                                      |
| E87  | For out-of-hours work undertaken in accordance with Condition E75, at-receiver noise mitigation in the form of at-property treatment must be offered to the land owner for habitable living spaces, or other mitigation or management measures, as agreed by the occupier, to properties identified in Appendix D. Mitigation must be offered prior to out-of-hours work commencing.<br><br>This requirement does not apply if the sensitive receiver has been provided with noise mitigation under the RMS Noise Abatement Program or the State Environment Planning Policy (Infrastructure) 2007 (clause 102(3)). The adequacy of at-property treatments will be reviewed where previous treatments have been installed as part of other SSI or CSSI projects. | Not Applicable | Applicable | Not Applicable.<br>Already completed under Stage 2. | Not Applicable.<br>Already completed under Stage 2. |

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|     | <i>Note: This condition does not preclude the application of other noise and vibration mitigation and management measures.</i>  |            |                |                |                |
| E88 | <p>At receiver noise mitigation in the form of at-property treatment must be offered to the land owner for habitable living spaces, or other mitigation or management measures as agreed by the occupier, to residential properties identified in Appendix E. Mitigation must be offered prior to works commencing.</p> <p>This requirement does not apply if the sensitive receiver has been provided with noise mitigation under the RMS Noise Abatement Program or the State Environment Planning Policy (Infrastructure) 2007 (clause 102(3)). The adequacy of at-property treatments will be reviewed where previous treatments have been installed as part of other SSI or CSSI projects.</p> <p><i>Note: This condition does not preclude the application of other noise and vibration mitigation and management measures.</i></p> | Applicable | Not Applicable | Not Applicable | Not Applicable |
| E89 | <p>A Noise Insulation Program must be prepared and implemented for the duration of CSSI works for receivers at/to which the requirements of Conditions E87 and E88 apply. The Program must be incorporated into the Construction Noise and Vibration Management Sub-plan.</p> <p>The Noise Insulation Program must detail the following matters:</p> <ul style="list-style-type: none"> <li>a) receivers eligible for the scheme;</li> <li>b) the scope of the insulation package;</li> <li>c) responsibility for the noise insulation works;</li> <li>d) procedure and the terms of the noise insulation works;</li> <li>e) program monitoring; and</li> <li>f) program review and amendment.</li> </ul> <p>The Noise Insulation Program must be endorsed by the AA.</p>   | Applicable | Applicable     | Not Applicable | Not Applicable |
| E90 | Receivers which are eligible for receiving treatment under the Noise Insulation Program required under Condition E89 must have treatment implemented within six (6) months following the commencement of construction which would affect the receiver. The implementation of the Noise  | Applicable | Applicable     | Not Applicable | Not Applicable |



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|     | Insulation Program must be prioritised based on the degree and duration of exceedance with high priority exceedances undertaken within three (3) months of the commencement of construction.  |            |            |                |                |
| E91 | 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.   | Applicable | Applicable | Applicable     | Applicable     |
| E92 | <p>The Proponent must prepare an Operational Noise and Vibration Review (ONVR) to confirm noise and vibration control measures that would be implemented for the operation of the CSSI. The ONVR must be prepared in consultation with the Department, relevant council(s), other relevant stakeholders and the community and must:</p> <ul style="list-style-type: none"> <li>a) confirm the appropriate operational noise and vibration objectives and levels for adjoining development, including existing sensitive receivers;</li> <li>b) confirm the operational noise predictions based on the final design. Confirmation must be based on an appropriately calibrated noise model (which has incorporated noise monitoring, and concurrent traffic counting, where necessary for calibration purposes). The assessment must specifically include verification of noise levels at all fixed facilities, based on noise monitoring undertaken at appropriately identified noise catchment areas surrounding the facilities;</li> <li>c) confirm the operational noise and vibration impacts at adjoining development based on the final design of the CSSI, including operational daytime LAeq,15 hour and night-time LAe, 9 hour traffic noise contours;</li> <li>d) review the suitability of the operational noise mitigation measures identified in the documents listed in Condition A1and, where necessary, investigate, identify and implement additional noise and vibration mitigation measures required to achieve the noise criteria outlined in the NSW Road Noise Policy (DECCW, 2011) and NSW Industrial Noise Policy (EPA, 2000), including the timing of implementation;</li> <li>e) include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures; and</li> <li>f) procedures for the management of operational noise and vibration complaints.</li> </ul> <p>The ONVR is to be verified by a suitably qualified and experienced noise and vibration expert. The ONVR is to be undertaken at the Proponent's expense and submitted to the Secretary for approval prior to the implementation of mitigation measures.</p> | Applicable | Applicable | Not Applicable | Not Applicable |

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|      | The Proponent must implement the identified noise and vibration control measures and make the ONVR publicly available.  |                |            |                |                |
| E93  | Noise mitigation measures as identified in Condition E92 that will not be physically affected by works, or which have not been implemented in accordance with Conditions E87 and E88 must be implemented within six (6) months of the commencement of construction in the vicinity of the impacted receiver to minimise construction noise impacts, and detailed in the Construction Noise and Vibration Management Sub-plan for the CSSI.  | Applicable     | Applicable | Not Applicable | Not Applicable |
| E94  | Where implementation of operational noise mitigation measures are not proposed early in accordance with Condition E93, the Proponent must submit to the Secretary a report providing justification as to why, along with details of temporary measures that would be implemented to reduce construction noise impacts, until such time that the operational noise mitigation measures identified in Condition E92 are implemented. The report must be endorsed by the AA and submitted to the Secretary prior to the commencement of construction which would affect the identified sensitive receivers.  | Applicable     | Applicable | Not Applicable | Not Applicable |
| E94A | Within three months of commencement of operation of the high voltage regulators at Iron Cove, the Proponent must undertake noise monitoring to compare the actual noise level emitted by the regulators to the noise performance at sensitive receivers as predicted in the document WestConnex M4-M5 Link Rozelle Interchange Iron Cove Ventilation Underground Modification Report (dated November 2019) and project-specific noise level as determined in accordance with the NSW Industrial Noise Policy (EPA, 2000). Monitoring must capture the onload tap changer noise and peak loading. A report detailing the noise monitoring results must be provided to the Secretary for information within one month of undertaking the monitoring. If the noise level at the nearest sensitive receiver exceeds either the predicted noise level or project-specific noise level, then the Proponent must implement noise reduction measures within six months of when the noise monitoring was undertaken. | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E95  | <p>Within 12 months of the commencement of operation of the CSSI, the Proponent must undertake monitoring of operational noise to compare actual noise performance of the CSSI against the noise performance predicted in the review of noise mitigation measures required by Condition E92.</p> <p>The Proponent must prepare an Operational Noise Compliance Report to document this monitoring. The Report must include, but not necessarily be limited to:</p>  | Applicable     | Applicable | Not Applicable | Not Applicable |

|     |   |            |            |                |                |
|-----|---|------------|------------|----------------|----------------|
|     | <p>a) noise monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under Condition E92;</p> <p>b) a review of the operational noise levels in terms of criteria and noise goals established in the NSW Road Noise Policy 2011;</p> <p>c) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which CSSI noise levels are ascertained, with specific reference to locations indicative of impacts on sensitive receivers;</p> <p>d) details of any complaints and enquiries received in relation to operational noise generated by the CSSI between the date of commencement of operation and the date the report was prepared;</p> <p>e) any required recalibrations of the noise model taking into consideration factors such as noise monitoring and actual traffic numbers and proportions;</p> <p>f) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of mitigation measures; and</p> <p>g) identification of additional measures to those identified in the review of noise mitigation measures required by Condition E92, that would be implemented with the objective of meeting the criteria outlined in the NSW Road Noise Policy (EPA, 2011) and Industrial Noise Policy (EPA, 2000), when these measures would be implemented and how their effectiveness would be measured and reported to the Secretary and the EPA.</p> <p>The Operational Noise Report must be submitted to the Secretary and the EPA within 60 days of completing the operational noise monitoring and made publicly available.</p> |            |            |                |                |
| E96 | <p>If blasting is proposed a Blast Management Strategy must be prepared and must include:</p> <p>a) sequencing and review of trial blasting to inform blasting;</p> <p>b) regularity of blasting;</p> <p>c) intensity of blasting;</p> <p>d) impact mitigation measures including periods of relief; and</p> <p>e) blasting program.</p>  | Applicable | Applicable | Not Applicable | Not Applicable |
| E97 | <p>The Blast Management Strategy must be endorsed by a suitably qualified and experienced person and reviewed by an independent specialist.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E98 | <p>The Blast Management Strategy must be prepared in accordance with relevant guidelines and in consultation with the EPA to ensure that all blasting and associated activities are carried out so as not to generate unacceptable noise and vibration impacts or pose a significant risk to sensitive receivers.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |

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| E99  | The Blast Management Strategy must be submitted to the Secretary for information no later than one (1) month prior to the commencement of blasting. The Strategy as submitted to the Secretary, must be implemented for all blasting activities.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E100 | Blasting associated with the CSSI must only be undertaken during the following hours:<br>a) 9:00 am to 5:00 pm, Monday to Friday, inclusive;<br>b) 9:00 am to 1:00 pm, Saturday; and<br>c) at no time on Sunday or on a public holiday;  | Applicable | Applicable | Not Applicable | Not Applicable |
|      | or as authorised through an EPL if blasting is proposed outside of these hours.<br><br>This condition does not apply in the event of a direction from police or other relevant authority for safety or emergency reasons to avoid loss of life, property loss and/or to prevent environmental harm.  |            |            |                |                |
| E101 | A geotechnical model of representative geological and groundwater conditions must be prepared prior to excavation 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. | Applicable | Applicable | Not Applicable | Not Applicable |
| E102 | 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 E103 (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.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E103 | In the case of buildings, roads, parking areas and parks, the appropriate criteria which governs the greatest risk of damage are to be selected from Table 9 (Maximum Settlement, Maximum Angular Distortion or Limiting Tensile Strain) unless the Proponent has determined more stringent criteria as a result of Condition E102.  | Applicable | Applicable | Not Applicable | Not Applicable |

**Table 9: Settlement criteria**

| Surface and Sub-Surface Structures  | Maximum Settlement | Maximum Angular Distortion | Limiting Tensile Strain (percent)* |
|---|--------------------|----------------------------|------------------------------------|
| Buildings – Low or non-sensitive properties (i.e. ≤ 2 levels and carparks)              | 30 mm              | 1 in 350                   | 0.1                                |
| Buildings and pools – High or sensitive properties (i.e. ≥ 3 levels and heritage items) | 20 mm              | 1 in 500                   | 0.1                                |
| Roads and parking areas   | 40 mm              | 1 in 250                   | n/a                                |
| Parks   | 50 mm              | 1 in 250                   | n/a                                |

\* As defined in Burland et al. 'Building response to tunnelling – Case studies from construction of the Jubilee Link Extension', London, Thomas Telford (2001)

\* As defined in Burland et al. 'Building response to tunnelling – Case studies from construction of the Jubilee Link Extension', London, Thomas Telford (2001)

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| E104 | <p>Should the geotechnical model in Condition E101 identify exceedances of the relevant criteria established by Conditions E102 and E103, 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.</p> <p>The adopted criteria does 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 sub- surface structures resulting from the CSSI.</p> | Applicable | Applicable | Not Applicable | Not Applicable |
| E105 | <p>The Proponent must offer pre-dilapidation surveys and must undertake and prepare pre- dilapidation 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 E101. The pre-dilapidation surveys and 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.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |

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| E106 | Where pre-dilapidation surveys have been undertaken in accordance with Condition E105, subsequent post-dilapidation surveys must be undertaken to assess damage to the surface and sub-surface structures that may have resulted from the construction of the CSSI within three (3) months of the completion of construction.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E107 | The results of the surveys must be documented in a Condition Survey Report for each surface and sub-surface structure surveyed. Copies of the Condition Survey Reports must be provided to the owner(s) of the structures surveyed within three (3) weeks of completing the surveys and no later than four (4) months following the completion of construction.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E108 | 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 three (3) months of completion of the post-dilapidation surveys unless another timeframe is agreed with the owner of the affected surface or sub-surface structure.  | Applicable | Applicable | Applicable     | Applicable     |
| E109 | <p>The Proponent must establish an Independent Property Impact Assessment Panel before works that have the potential to result in property impacts commence. The Panel must comprise geotechnical and engineering experts independent of the design and construction team. The Panel will be responsible for independently reviewing Condition Survey Reports undertaken under Conditions E105 and E106, the resolution of property damage disputes, and the establishment of ongoing settlement and vibration monitoring requirements. The Secretary must be informed of the Panel Members prior to property impact.</p> <p>Either the affected owner or the Proponent may refer unresolved disputes arising from potential and/or actual property impacts to the Panel for resolution. All costs incurred in establishing and implementing the Panel must be borne by the Proponent regardless of which party makes a referral to the Panel.</p> | Applicable | Applicable | Applicable     | Not Applicable |
| E110 | The mitigation measures SE3, SE4 and SE5 in Chapter 29 of the EIS must be actioned for at least six (6) months following the final acquisition of residential and business-related properties.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E111 | Land considered surplus to needs for the operation of the motorway, as identified in the documents listed in Condition A1, as well as the opportunity sites in Rozelle as identified in Appendix L (Volume 2F of the EIS) and land not occupied by operational infrastructure at construction site C7, and that is not retained by the Proponent, is to be considered residual land and managed in accordance with Condition E112.   | Applicable | Applicable | Not Applicable | Not Applicable |

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| E112 | <p>A Residual Land Management Plan (RLMP) must be prepared in consultation with the relevant council(s) and government agencies. The RLMP must be submitted to the Secretary for approval at least 12 months prior to the commencement of operation of the CSSI. The RLMP must identify (and consider), but not be limited to:</p> <ul style="list-style-type: none"> <li>a) identification and illustration of all residual land following construction of the CSSI, including the physical location, land use characteristics, size and adjacent land uses;</li> <li>b) identification of feasible uses for each piece of residual land guided by relevant environmental planning instruments and - <ul style="list-style-type: none"> <li>i) the Eastern City District Plan (or where updated),</li> <li>ii) The Bays Precinct Urban Transformation Program (or where updated),</li> <li>iii) Parramatta Road Corridor Urban Transformation Strategy, and</li> <li>iv) other strategic planning documents applicable to any residual land from the CSSI;</li> </ul> </li> <li>c) identification of residual land that does not have feasible development potential; and</li> <li>d) timeframes for implementing the various components of the RLMP.</li> </ul> | Applicable     | Applicable | Not Applicable | Not Applicable |
| E113 | Residual land that is to be used for a public use and/or transferred to a public authority is to be in a condition suitable for end use that does not incur additional cost to the public authority to reasonably rehabilitate the land for the future development identified in the RLMP.  | Applicable     | Applicable | Not Applicable | Not Applicable |
| E114 | All residual land identified for open space uses in accordance with an approved RLMP must be made available to the relevant council or public authority within 12 months of the completion of construction.   | Applicable     | Applicable | Not Applicable | Not Applicable |
| E115 | All residual land is to be managed in accordance with the maintenance requirements of the UDLP until such time as it is transferred to a differing owner or authority in accordance with the RLMP, unless otherwise agreed with the Secretary (and any relevant authority to own the land).   | Applicable     | Applicable | Not Applicable | Not Applicable |
| E116 | 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.   | Applicable     | Applicable | Applicable     | Applicable     |
| E117 | The Proponent must investigate, and implement where reasonable, opportunities to consolidate operational ancillary facilities at the Rozelle Rail Yards to maximise the amount of open space across the site.   | Not Applicable | Applicable | Not Applicable | Not Applicable |

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| E117A | The façade of the high voltage switch room facing Victoria Road at Iron Cove must be articulated and landscaped to reduce its visual impact, unless otherwise approved in the UDLP.   | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E117B | Façades of operational buildings and walls at Iron Cove that are adjacent to or adjoin residential properties must be designed and have finishes that are sympathetic with the surrounding residential neighbourhood.   | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E117C | The stair access to the underground ventilation facility at Iron Cove must be designed and sited to optimise the extent of useable surplus land along Victoria Road.  | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E118  | The ventilation outlets at Rozelle and Iron Cove must incorporate a living vertical garden over their total areas. Notwithstanding, a reduced coverage or an alternative living green design treatment (such as wall climbers or landscape shielding) can be implemented subject to review by the Design Review Panel. The green elements are to be an integrated part of the architectural composition in aesthetic balance with the non-green elements and addressing key view corridors.   | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E119  | The design of the landscape verge associated with the Iron Cove Link (Area 01, figure 5.24 of Appendix L, Volume 2F of the EIS) must maximise planting opportunities.   | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E120  | A pedestrian and cycling green link, as described in Modification 2 Report and amended by Modification 2 Amendment Report, to be provided from the Rozelle Rail Yards to the Rozelle Bay light rail stop, must have adequate soil depth to facilitate planting along the majority of the bridge with a diverse range of vegetation. The bridge must be a minimum width of 15 metres, where the pedestrian and cycling green link spans from Rozelle Rail Yards across the City West Link, unless otherwise agreed by the Secretary. | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E121  | The mouth of Whites Creek north east of The Crescent and to the west of the proposed utilities bridge, must not be fully enclosed. Infrastructure over this section of the creek must be limited to the utilities bridge / shared user path, unless otherwise agreed by the Secretary.  | Not Applicable | Applicable | Not Applicable | Not Applicable |
| E122  | The Proponent must construct and operate the CSSI with the objective of minimising light spillage to residential properties. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces. Notwithstanding, the Proponent must provide mitigation measures to manage any                | Applicable     | Applicable | Applicable     | Applicable     |



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|       | residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.  |            |                |                |                |
| E122A | The Proponent must implement measures, in consultation with affected residents, to prevent headlights from vehicles exiting the G-Loop spilling onto residences in the vicinity of the intersection of Dobroyd Parade / Wattle Street / Waratah Street.   | Applicable | Not Applicable | Not Applicable | Not Applicable |
| E123  | The Proponent must construct and operate the CSSI with the objective of avoiding adverse or distracting lighting configuration, spillage or intensity to aircraft operations. All lighting associated with the construction and operation of the CSSI must adhere to the Lighting in the Vicinity of Aerodromes: Advice to Lighting Designer (CASA, 1999) and National Airports Safeguarding Framework Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports (DIRD, 2012). Notwithstanding, the Proponent must provide mitigation measures to manage any residual night lighting impacts to protect aircraft operations, in consultation with CASA and DIRD.   | Applicable | Applicable     | Not Applicable | Not Applicable |
| E124  | Notwithstanding Condition E123, the Proponent must consult with CASA, DIRD and Sydney Airport Operators prior to the commencement of construction to determine the need and potential positioning of aviation hazard lighting on any equipment or built form component associated with the CSSI where such consultation deems it necessary.   | Applicable | Applicable     | Not Applicable | Not Applicable |
| E125  | The Proponent must establish a Design Review Panel during detailed design and prior to construction.  | Applicable | Applicable     | Not Applicable | Not Applicable |
| E126  | During design development of the CSSI, the Design Review Panel must review the design (excluding the tunnels between portals) to assess whether it is consistent with the commitments and outcomes made in the documents listed in Condition A1.  | Applicable | Applicable     | Not Applicable | Not Applicable |
| E127  | The Design Review Panel must be given the opportunity to and may review and refine the design objectives for place making, public realm and urban and heritage interpretation applicable to the length of the project and provide advice on the application of the objectives to key design elements in relation to place making, architecture, heritage, urban and landscape design and public art and aesthetic aspects of the CSSI. The Panel must be given the opportunity to also review the Urban Design and Landscape Plan(s) prior to these being submitted to the Secretary. Evidence of this review and the Proponent's consideration of the review is to be provided to the Secretary. Where the Panel has decided to not review a plan, it must provide a written statement to this effect. | Applicable | Applicable     | Not Applicable | Not Applicable |

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| E128 | <p>The Design Review Panel must be comprised of, a suitably qualified, experienced and independent professional in each of the fields of:</p> <ul style="list-style-type: none"> <li>a) architecture;</li> <li>b) urban design;</li> <li>c) landscape design; and</li> <li>d) Aboriginal cultural heritage and non-Aboriginal heritage.</li> </ul> <p>The NSW Government Architect (or representative) is to be the Chair of the Panel.</p> <p>The Proponent and its contractor(s) are to be invited onto the Panel as observers only and to provide technical advice. The Proponent is to provide independent secretarial resources to the Panel.</p> <p>The Design Review Panel may seek specialist advice from Infrastructure NSW (when the Panel convenes to discuss matters relating to the Rozelle Rail Yards and its surrounds).</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E129 | <p>The Design Review Panel members must be nominated by the Proponent and approved by the Secretary in accordance with the timeframes in Condition E125.</p>  | Applicable | Applicable | Not Applicable | Not Applicable |
| E130 | <p>Nomination and appointments of the Design Review Panel must comply with the Public Service Commission's Appointment Standards: Boards and Committees in the NSW Public Sector guideline.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E131 | <p>Once the Design Review Panel is composed, and prior to the detailed design of the CSSI, a Design Review Panel Terms of Reference is to be developed and endorsed by all panel members. The Terms of Reference must be submitted to the Secretary for information and:</p> <ul style="list-style-type: none"> <li>a) establish best practice governance and protocols for the operation of the Design Review Panel;</li> <li>b) include a Code of Conduct;</li> <li>c) outline the agreed frequency of Design Review Panel meetings, coordinated with Proponent program requirements, to ensure timely advice and design adjustment; and</li> <li>d) outline secretariat functions and administration including the recording and storing of meeting agendas, minutes and actions.</li> </ul> <p>Details on the design and landscaping should be presented to the Design Review Panel by the suitably qualified and experienced urban design and landscape specialists who have been engaged on the CSSI.</p> | Applicable | Applicable | Not Applicable | Not Applicable |

|      |   |  |            |  |   |
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| E132 | The Design Review Panel is to be operated and managed in accordance with the approved Design Review Panel Terms of Reference and in accordance with the NSW Government Boards and Committees Guidelines (Department of Premier and Cabinet, September 2015).  | Applicable   | Applicable | Not Applicable   | Not Applicable  |
| E133 | An Urban Design and Landscape Plan(s) (UDLP) must be prepared based on the detailed design, and in accordance with the project objectives, and the commitments made in Chapters 13 and 29 of the EIS and updated in Part E of the SPIR.   | Applicable   | Applicable | Not applicable (design detailed in E58 report, and appended to UDLP) | Applicable  |
| E134 | <p>The Urban Design and Landscape Plan(s) must be prepared by a suitably qualified and experienced person(s) in consultation with the relevant council(s), Infrastructure NSW, the community and affected landowners and businesses. The UDLP(s) must include, but not necessarily be limited to:</p> <p>Objectives, Principles and Standards</p> <p>a) demonstrated consideration of design objectives, principles and standards including:</p> <ul style="list-style-type: none"> <li>i) local environmental and heritage values,</li> <li>ii) urban design context,</li> <li>iii) sustainable design and maintenance,</li> <li>iv) community safety, amenity and privacy including 'safer by design' principles where relevant,</li> <li>v) relevant design standards and guidelines,</li> <li>vi) prioritising the visual amenity and values of adjoining receivers over the road user experience,</li> <li>vii) minimising the footprint of the project (including operational facilities), and</li> <li>viii) the urban design principles outlined in the document referred to in Condition A1, and</li> <li>ix) the urban design principles outlined in Better Placed and Greener Places by the NSW Government Architect; and</li> <li>x) DRP review.</li> </ul> <p>Consultation</p> <p>b) details of where and how recommendations from the Design Review Panel have been incorporated into the plan;</p> | Applicable (Partial - the Urban Design and Landscape Plan for Mainline tunnels will not address Part (f)(ii), Part (f)(iii), Part (g), Part (h), Part (l)(i), Part (l)(ii), Part (i), Part (n), Part (q)). | Applicable | Not Applicable   | Applicable (Urban Design and Landscape Plan will be updated to reflect Stage 4 design enhancements) |

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|  | <p>c) evidence of consultation with the relevant council(s), Infrastructure NSW and the community on the proposed urban design and landscape measures, prior to finalisation of the UDLP, and details of how the outcomes of this consultation have informed the development of the UDLP;</p> <p>Context and Form</p> <p>d) an analysis of the built, natural and community context and the urban design objectives, principles and standards for the CSSI;</p> <p>e) detailed consideration of integration and continuity with urban design and landscape outcomes for the M4 East and New M5 projects taking into account the respective UDLP(s) for each project;</p> <p>f) landscaping (soft and/or hard) and building and bridge design opportunities to mitigate the visual impacts of road and active transport infrastructure and operational fixed facilities (including ventilation outlets, tunnel portals, Motorway Operations Complexes, noise walls and The Crescent overpass (and related pedestrian and cycling green link, traffic islands and medians).), including:</p> <p>i) building placement, designs and landscaping that are reflective of the local built form,</p> <p>ii) a living vertical garden(s) or alternative treatment for ventilation outlets consistent with the requirements of Condition E118,</p> <p>iii) enhancing the amenity and interface between the pedestrian and cycling green link, light rail stop and shared user path ramp, to provide a sense of place;</p> <p>Access</p> <p>g) the Pedestrian and Cycle Implementation Strategy identified in Condition E60;</p> <p>h) the following interim park infrastructure must be provided at Rozelle Rail Yards to support passive recreational uses of the land: toilet facilities, seating, bins and bicycle parking;</p> <p>i) details of staging to maximise progressive public access and use of the Rozelle Rail Yards site;</p> <p>Design</p> <p>j) the design of the project landform and earthworks;</p> <p>k) the design of the CSSI elements including their form, materials and detail (including the City West Link pedestrian and cycling green link identified in Condition E120);</p> <p>l) a description of the CSSI design features, including graphics such as sections, perspective views and sketches of key elements of the CSSI;</p> <p>(i) visualisations (from a distance and within the intersections) of The Crescent overpass, the pedestrian and cycling green link, shared user path ramp and the at-grade pedestrian and cyclist crossing of The Crescent, and;</p> |  |  |  |  |
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|  | <ul style="list-style-type: none"> <li>(ii) cross sections showing the full width of The Crescent between Johnston Street and The Crescent/City West Link intersection;</li> <li>m) visual screening requirements;</li> <li>n) development and delivery of public art opportunities throughout the Rozelle Rail Yards and where possible within the construction footprint surrounding the intersection of The Crescent and City West Link using local artists;</li> <li>o) demonstrated integration of Crime Prevention Through Environmental Design principles into the detailed design process;</li> </ul> <p>Lighting</p> <ul style="list-style-type: none"> <li>p) an assessment of the location, design and impacts of operational lighting associated with the CSSI and measures proposed to minimise lighting impacts in accordance with Conditions E122, E123 and E124;</li> <li>q) development of a Rozelle Rail Yards Lighting and Wayfinding Strategy that provides for effective, safe and innovative lighting and wayfinding throughout the Rozelle Rail Yards land and that also explores lighting as a public art opportunity whilst ensuring adherence to conditions E122, E123 and E124;</li> </ul> <p>Heritage</p> <ul style="list-style-type: none"> <li>r) the location of existing heritage items;</li> <li>s) information on the reuse of heritage items and items of significance to the urban form and landscape character including identification of opportunities for interpretative and innovative reuse of salvaged items from the Rozelle Rail Yards to ensure the character of the land remains connected to previous and surrounding industrial, transport and maritime land uses;</li> </ul> <p>Landscaping</p> <ul style="list-style-type: none"> <li>t) a description of disturbed areas (including construction ancillary facilities) and details of the strategies to progressively rehabilitate, regenerate and/or revegetate these areas;</li> <li>u) details on the location of existing vegetation and proposed landscaping (including use of endemic and advanced tree stock where appropriate). Details of species to be replanted/revegetated must be provided, including their appropriateness to the areas and habitat for threatened species;</li> <li>v) demonstrated integration of water-sensitive urban design principles into the detailed design process and maximisation of integration of existing and enhanced water features into the open space features of the site including enhancements to Whites Creek and other waterways as well as the constructed wetland;</li> </ul> <p>Implementation and monitoring</p> |  |  |  |  |
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|       | <p>w) the timing for implementation of access, landscape and open space initiatives; and</p> <p>x) monitoring and maintenance procedures for the built elements, rehabilitated vegetation and landscaping (including weed control) including performance indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail.</p>  |            |                |                |   |
| E135  | The Urban Design and Landscape Plan(s), and its sub-plans, must be reviewed by the Design Review Panel. The Proponent must respond to the outcomes of the Design Review Panel's review and submit the UDLP to the Secretary for approval no later than one (1) month prior to the construction of permanent built surface works that are the subject of the Urban Design and Landscape Plan(s) (in the area to which the UDLP applies) or earth works for the final surface contouring of the Rozelle Rail Yards open space, whichever is the sooner.   | Applicable | Applicable     | Not Applicable | Partially Applicable<br><br>DRP Chair endorsement |
| E136  | Construction of permanent built works or landscaping that are the subject of the Urban Design and Landscape Plan must not be commenced (in the area to which the UDLP applies) until the Urban Design and Landscape Plan(s) has been approved by the Secretary, after taking into consideration advice received from the Design Review Panel.   | Applicable | Applicable     | Not Applicable | Applicable  |
| E137  | The Urban Design and Landscape Plan(s), as approved by the Secretary, must be implemented during construction, as required, and operation.  | Applicable | Applicable     | Not Applicable | Applicable  |
| E137A | The Urban Design and Landscape Plan (UDLP) must be updated to include the interim design of the Northcote Street permanent closure. A copy of the UDLP must be provided to the Planning Secretary and relevant council for information within one (1) month of commencement of the works.   | Applicable | Not Applicable | Not Applicable | Not Applicable                                    |
| E137B | <p>The UDLP must be updated for the final design of Northcote Street in consultation with the relevant council and be reviewed by the Design Review Panel in accordance with Condition E135. The UDLP must be submitted to the Planning Secretary one (1) month prior to the construction of permanent works that relate to the urban design, no more than two (2) years from the approval date of Modification 7, or another time as agreed by the Planning Secretary. The final design must have regard to:</p> <p>a) the Haberfield heritage conservation area,</p> <p>b) integration with the existing streetscape and development on adjoining sites (actual or planned)</p> <p>c) interface with Parramatta Road, and</p> <p>d) improved geometry for the turnaround of vehicles on Northcote Street.</p> | Applicable | Not Applicable | Not Applicable | Not Applicable                                    |

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| E138 | <p>Existing residential properties (and approved residential developments, at the time of this approval) that are affected by overshadowing from the CSSI (including any noise mitigation measures) are to receive a minimum of three (3) hours of direct sunlight in habitable rooms and in at least 50% of the principal private open space area between 9:00 am and 3:00 pm on 21 June. Such properties must be identified for further consideration by the Proponent in a Solar Access and Overshadowing Report which addresses compliance with these requirements.</p> <p>The Solar Access and Overshadowing Report must be reviewed by the Design Review Panel. The Proponent must respond to the outcomes of the Design Review Panel's review and then submit the Report to the Secretary prior to the commencement of construction of any structures that may cause overshadowing of residential premises, whenever is the sooner and must include:</p> <ul style="list-style-type: none"> <li>a) identification of potentially affected properties;</li> <li>b) assessment of the detailed design's compliance at each property, informed by – <ul style="list-style-type: none"> <li>i) a review of the habitable rooms within structures,</li> <li>ii) the size and nature of private open spaces, and</li> <li>iii) shadow diagrams in plan and elevation at hourly intervals between 9:00 am and 3:00 pm on 21 June; and</li> </ul> </li> <li>c) a consultation plan to detail how potential impacts and mitigation measures will be discussed and negotiated with potentially affected landowners in the event that compliance with this condition is not achieved.</li> </ul> <p>Where existing residential development currently receives less than the required amount of solar access, existing access to sunlight should not be unreasonably reduced.</p> <p>Where affected properties include dwellings held under strata or community title, this condition must be interpreted in relation to individual units within those properties.</p> | Applicable | Applicable | Not Applicable | Not Applicable |
| E139 | <p>The ongoing maintenance and operation costs of urban design, open space, landscaping and recreational items and works implemented as part of this approval will remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Prior to the transfer of assets, the Proponent will maintain items and works to at least the design standards established in the Urban Design and Landscape Plan, and its sub-plans, required by Condition E133.</p>   | Applicable | Applicable | Applicable     | Applicable     |

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| E140 | <p>A Utilities Management Strategy must be prepared and implemented for all utility works. The Strategy must identify how utility works will be defined and managed.</p> <p>The Utilities Management Strategy must include:</p> <ul style="list-style-type: none"> <li>a) a definition of low impact utility work. The definition must consider parameters including, but not limited to, type of works, duration of works, hours of works, noise impacts, and traffic and access impacts;</li> <li>b) the functions of the Utility Coordination Manager as required by Condition E141;</li> <li>c) a description of all utility works to be undertaken, including low impact utility works and how they meet the definition in subclause (1); and</li> <li>d) the management measures that will be implemented to manage dust, noise, traffic, access and lighting impacts associated with low impact utility works.</li> </ul> <p>The Utilities Management Strategy must be submitted to the Secretary for approval at least one (1) month prior to the commencement of low impact utility works.</p> <p><i>Note: Utility works that are not low impact are construction and appropriate management measures would be included in the CEMP.</i></p> | Applicable | Applicable | Not Applicable | Not Applicable |
| E141 | <p>A Utility Coordination Manager must be appointed for the duration of the CSSI works. The role of the Utility Coordination Manager must include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a) the management and coordination of all utility works associated with the delivery of the CSSI, to ensure respite is provided to the community, as required under Condition E75;</li> <li>b) providing advice to the Public Liaison Officer(s), regarding upcoming utility works, including the scope of the works and responsibility for the works; and</li> <li>c) investigating complaints received from the Community Complaints Mediator or the Public Liaison Officer(s), relating to utility works, and providing a response to the Community Complaints Mediator or Public Liaison Officer(s).</li> </ul>  | Applicable | Applicable | Not Applicable | Not Applicable |
| E142 | <p>Prior to operation, the Proponent must prepare an Emergency Response Plan, in consultation with FRNSW and NSW Police Force.</p> <p>The Emergency Response Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a) protocols and procedures to be followed during emergency situations associated with the operation of the project (including fires, explosions and, for the purposes of this condition, vehicle collisions). The protocols and procedures are to take into account the needs of people with a disability or who may experience access problems in emergency situations;</li> </ul>  | Applicable | Applicable | Not Applicable | Not Applicable |



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|      | <ul style="list-style-type: none"> <li>b) details of traffic management measures to be implemented during emergencies, where appropriate, to minimise the potential for escalation of the emergency;</li> <li>c) design and management measures for containment of contaminated fire-fighting water, fuel spills and gaseous combustion products;</li> <li>d) details of a training and testing program to ensure that - <ul style="list-style-type: none"> <li>i) all operational staff familiar with the Emergency Response Plan, and</li> <li>ii) coordination with FRNSW and NSW Police is regularly exercised; and</li> </ul> </li> <li>e) provision for a simulated emergency response exercise, including the Proponent, FRNSW and NSW Police, to be conducted in accordance with the approved Emergency Response Plan on at least one occasion prior to the opening of the tunnel to traffic. The time for the exercise is to be agreed by the participants.</li> </ul> |            |            |                |                |
| E143 | <p>Fire simulation and hot smoke testing must be undertaken as part of the simulated emergency response exercise to be staged prior to opening of the project to traffic as required in Condition E142façade.</p> <p>The Proponent must respond in writing to any recommendations made by FRNSW and NSW Police as a result of the exercise.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E144 | <p>The Proponent must undertake annual Hazard Reviews of the project for the first five (5) years of operation. The Hazard Review must detail all hazardous incidents that have occurred during the preceding period, identify safety measures required to rectify those incidents, and address any ongoing issues.</p> <p>The first Hazard Review must be undertaken for the first three (3) months of operation after the opening of the project to traffic. Subsequent Hazard Reviews must be undertaken for the following nine (9) months and thereafter at 12 monthly intervals.</p> <p>FRNSW may also direct the Proponent to undertake a Hazard Review following any major incident in the tunnel.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E145 | <p>A Hazard Review Report, outlining the results of the Hazard Review, and any proposed additional safety measure(s) to be implemented in response to the findings of the Hazard Review, must be submitted to FRNSW no later than one (1) month after the review period.</p> <p>The Proponent must respond in writing to any recommendation made by FRNSW in relation to the findings of a Hazard Review, within such time as may be agreed to by FRNSW.</p>  | Applicable | Applicable | Not Applicable | Not Applicable |

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| E146 | <p>The Proponent must develop a Fire Engineering Brief and Fire Engineering Report to address fire and life safety in the tunnel, in consultation with FRNSW. The documents must be prepared prior to finalising the relevant design details for the tunnel. The documents must outline fire protection systems and other tunnel equipment, systems, and operational protocols required for fire and smoke management.</p> <p>The Proponent must respond in writing to any recommendation made by FRNSW in relation to the Fire Engineering Brief and Fire Engineering Report, within such time as may be agreed by FRNSW.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E147 | <p>In developing the Fire Engineering Brief and Fire Engineering Report, the Proponent must undertake a detailed Fire Engineering Study in accordance with Australian Building Codes Board codes and guides, and Fire Safety Engineering Guidelines. Detailed design of the tunnel must incorporate the design and operational measures developed in the Fire Engineering Study to minimise the potential for, and effect of, fire and hazardous material incidents in the tunnel.</p> <p>The final design of the tunnel in relation to the fire and life safety features must be verified against the Fire Engineering Study in consultation with FRNSW by an Accredited Fire Engineer.</p> | Applicable | Applicable | Not Applicable | Not Applicable |
| E148 | <p>Prior to the opening of the project to traffic, a full audit of the fire and life safety system as defined by the Fire Engineering Study required by Condition E147 must be undertaken by an Accredited Fire Engineer. The objective of the audit must be to ensure that all design and operational measures outlined in the fire engineering study has been installed, are operational, and achieve the required design criteria.</p> <p>The results of the audit must be submitted to FRNSW prior to opening of the project to traffic. The Proponent must respond in writing to any recommendations resulting from the FRNSW review of the audit.</p>                                  | Applicable | Applicable | Not Applicable | Not Applicable |
| E149 | <p>A detailed maintenance-testing program outlining the methods of testing the fire and life safety systems and schedule for implementation must be developed in consultation with FRNSW prior to opening of the project to traffic.</p> <p>The Proponent must respond in writing to any recommendations made by FRNSW.</p>  | Applicable | Applicable | Not Applicable | Not Applicable |
| E150 | <p>Maintenance testing of fire and life safety systems must be undertaken at least annually, or any other interval as required by the design engineer and in consultation of FRNSW.</p>  | Applicable | Applicable | Not Applicable | Not Applicable |

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|      | Results of maintenance testing must be made available to FRNSW for review, and the Proponent must respond in writing to any recommendations from FRNSW to ensure the reliability of the fire and life safety systems.  |            |            |                |                |
| E151 | <p>The CSSI must be designed so that the following flooding characteristics are not exceeded on adjacent lands / properties:</p> <ul style="list-style-type: none"> <li>a) a maximum increase in inundation time of one hour in a 1 in 100 year ARI rainfall event;</li> <li>b) a maximum increase of 10 mm in inundation at properties where floor levels are currently exceeded in a 1 in 100 year ARI rainfall event;</li> <li>c) a maximum increase in 50 mm in inundation at properties where floor levels would not be exceeded in a 1 in 100 year ARI rainfall event; and</li> <li>d) no inundation of floor levels which are currently not inundated in a 1 in 100 year ARI rainfall event.</li> </ul>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E152 | Flood information including flood reports, models and geographic information system outputs, and work as executed information from a registered surveyor certifying finished ground levels and the dimensions and finished levels of all structures within flood prone land, must be provided to the relevant council(s) and the SES. The relevant council(s) and the SES must be notified in writing that the information is available no later than one (1) month following the completion of construction and be provided with that information. Information requested by the relevant council(s) or the SES must be provided no later than six (6) months following the completion of construction or within another timeframe agreed with the relevant council(s) and the SES.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E153 | <p>The Proponent must prepare a Flood Review Report(s) after the first defined flood event for any of the following flood magnitudes – the 5 year ARI event, 20 year ARI event, 100 year ARI event and probable maximum flood – to assess the actual flood impact against that predicted in the documents referred to in Condition A1. The Flood Review Report(s) must be prepared within three (3) months of each flood event. The report(s) must prepared by an appropriately qualified person(s) and include:</p> <ul style="list-style-type: none"> <li>a) identification of the properties and infrastructure affected by flooding during the reportable event;</li> <li>b) a comparison of the actual extent, level, velocity and duration of the flooding event against the impacts predicted in the documents referred to in Condition A1 and the requirements specified in Condition E151; and</li> <li>c) where the actual extent and level of flooding exceed the predicted level and / or the requirements specified in Condition E151, with the consequent effect of adversely impacting on property(s), structures and infrastructure, identification of the measures to be</li> </ul> | Applicable | Applicable | Not Applicable | Not Applicable |

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|      | <p>implemented to reduce future impacts of flooding related to the CSSI works, including the timing and responsibilities for implementation.</p> <p>Flood mitigation measures must be developed in consultation with the affected property / structure / infrastructure owners and the relevant council(s).</p> <p>A copy of the Flood Review Report(s) must be submitted to the Secretary and relevant council(s) within one (1) months of finalising the report(s).</p>   |                |            |                |                      |
| E154 | The Proponent must not destroy, modify or otherwise physically affect any heritage items, including human remains, outside of the CSSI boundary, or undertake works in or on Alexandra Canal.   | Applicable     | Applicable | Applicable     | Applicable           |
| E155 | The Proponent must not to harm, modify, or otherwise impact human remains uncovered during the construction of the CSSI.  | Applicable     | Applicable | Applicable     | Applicable           |
| E156 | Identified impacts to heritage items and heritage conservation areas must be minimised through both detailed design and construction. The measures for ensuring this are to be detailed in the Construction Non-Aboriginal Heritage Management Sub-Plan and Aboriginal Cultural Heritage Management Sub-Plan required by Conditions C4(g) and (h), respectively.  | Applicable     | Applicable | Applicable     | Partially Applicable |
| E157 | <p>An Unexpected Heritage Finds Procedure must be prepared:</p> <ul style="list-style-type: none"> <li>a) to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or OEH; and</li> <li>b) by a suitably qualified and experienced heritage specialist.</li> </ul> <p>The Procedure must be included in the Construction Non-Aboriginal Heritage Management Sub-plan and Aboriginal Cultural Heritage Management Sub-Plan required by Conditions C4(g) and (h).</p> <p><i>Note: Human remains that are found unexpectedly during works are under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.</i></p> | Applicable     | Applicable | Applicable     | Applicable           |
| E158 | <p>The Proponent must not destroy, modify or otherwise cause direct damage to the following items:</p> <ul style="list-style-type: none"> <li>a) Southern Penstock associated with White Bay Power Station; and</li> <li>b) 5 Lilyfield Road, Rozelle.</li> </ul>   | Not Applicable | Applicable | Not Applicable | Not Applicable       |

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| E159 | The Proponent must undertake a condition survey of the Southern Penstock and establish and maintain a suitable exclusion zone around the penstock for the duration of construction. The extent of the exclusion zone must be determined in consultation with the Heritage Division of OEH.   | Not Applicable  | Applicable  | Not Applicable | Not Applicable |
| E160 | The Proponent must investigate the feasibility of retaining Cadden Le Messurier (84 Lilyfield Road), Former Hotel (78 Lilyfield Road) and tfaçadeade of the former Bank of NSW building (164 Parramatta Road) during detailed design.  | Applicable<br>–Partial - the Mainline tunnels will not address this condition for the properties at 84 Lilyfield Road or 78 Lilyfield Road) | Applicable<br>–Partial - the Rozelle interchange will not address this condition for the property at 164 Parramatta Road) | Not Applicable | Not Applicable |
| E161 | Works on Whites Creek Stormwater Channel No. 95 must be undertaken in consultation with Sydney Water and a suitably qualified and experienced heritage consultant. The consultation process must include consultation on the final design and location of the works. All reasonable steps must be undertaken to ensure that the lateral extent and degree of impact to the canal fabric is minimised.  | Not Applicable  | Applicable  | Not Applicable | Not Applicable |
| E162 | Prior to conducting acoustic treatment at any heritage item identified in the documents listed in Condition A1 the advice of a suitably qualified and experienced built heritage expert must be obtained and implemented to ensure any such work minimises any adverse impacts on the heritage significance of the item.   | Applicable  | Applicable  | Not Applicable | Not Applicable |
| E163 | The Proponent must prepare a Heritage Archival Recording and Salvage Report, including photographic recording of heritage items which have been identified for demolition in the documents referred to in Condition A1 and outline how any salvage or recovery of material will be undertaken from these items.<br><br>Archival recording must be undertaken by a suitably qualified heritage specialist and prepared in accordance with NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998) and Photographic Recording of Heritage Items Using Film or Digital Capture (2006). | Applicable  | Applicable  | Not Applicable | Not Applicable |

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|      | Within 12 months of completing the archival recording, the Proponent must submit the Heritage Archival Recording and Salvage Report to the Secretary, relevant council(s), relevant local libraries and local historical societies in the respective local government area(s).   |  |   |                |                |
| E164 | <p>Archival recording as required by Condition E163 must also be undertaken for the Cadden Le Messurier, former Hotel and the former Bank of NSW building, should these structures be demolished, and for The Crescent Mural at Annandale.</p> <p>Note: The Crescent Mural must not be destroyed.</p>  | <p>Applicable<br/>–Partial - the Mainline tunnels will not address this condition for the properties at 84 Lilyfield Road,78 Lilyfield Road or The Crescent Mural)</p> | <p>Applicable<br/>–Partial - the Rozelle interchange will not address this condition for the property at 164 Parramatta Road)</p> | Not Applicable | Not Applicable |
| E165 | <p>Following archival recording as required by Condition E163, and prior to demolition, the Proponent must assess options for sympathetic reuse (including integrated heritage displays and interpretation) on the project or other options for conservation, including architectural salvage for re-use in comparable buildings and display.</p> <p>Where salvage supports good conservation outcomes, the material is to be collected and stored in suitable repository locations established in consultation with relevant council(s). The salvage from any State-listed items or elements must be determined in consultation with the Heritage Division of OEH.</p> <p>Any residual items and materials are to be made available, through a process to be developed by the Proponent in consultation with the relevant council(s), to landowners within the locality from where the material originated.</p> | Applicable   | Applicable  | Not Applicable | Not Applicable |
| E166 | The Proponent must investigate options for utilising salvaged rail related infrastructure from the Rozelle Rail Yards into the landscaping of the Rozelle Rail Yards. How the items are to be used is to be detailed in the Urban Design and Landscape Plan required by Condition E133.  | Not Applicable   | Applicable  | Not Applicable | Not Applicable |

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| E167 | <p>The Proponent must prepare a Heritage Interpretation Plan, as committed to in the SPIR (NAH02) which identifies and interprets the key heritage values and stories of heritage items and heritage conservation areas impacted by the CSSI. The Heritage Interpretation Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a) a discussion of the key interpretive themes, stories and messages proposed to interpret the history and significance of the affected heritage items and sections of heritage conservation areas; and</li> <li>b) identification of interpretive initiatives implemented to mitigate impacts to archaeological relics, heritage items and conservation areas affected by the CSSI.</li> </ul>   | Applicable | Applicable | Not Applicable   | Not Applicable          |
| E168 | <p>Prior to works that have a direct material impact on a Historical Archaeological Management Unit (HAMU), the Proponent must engage a suitably qualified archaeologist whose experience complies with the Heritage Council of NSW's Criteria for Assessment of Excavation Directors (July, 2011) (referred to as the Excavation Director) to oversee and advise on matters associated with historic archaeology and to prepare an Historical Archaeological Research Design and Excavation Methodology.</p>  | Applicable | Applicable | Applicable if triggered  | Applicable if triggered |
| E169 | <p>The Historical Archaeological Research Design and Excavation Methodology must to be submitted to the Heritage Council of NSW (or its delegate) for review and comment prior to finalisation. The Historical Archaeological Research Design and Excavation Methodology must:</p> <ul style="list-style-type: none"> <li>a) be consistent with the NSW Heritage Council's Archaeological Assessments Guideline (1996) or as updated;</li> <li>b) provide for the detailed analysis of any heritage items discovered during the investigations;</li> <li>c) include management options for discovered heritage items, whether known or unexpected finds (including options for avoidance, salvage, relocation and display);</li> <li>d) for unexpected finds that are determined to be relics, set out the assessment process that will determine an appropriate archaeological response to managing their significance;</li> <li>e) include procedures for notifying the Heritage Council of NSW (or its delegate) and Secretary of any relic findings; and</li> <li>f) if the findings of the investigations are significant, provide for the preparation and implementation of a Heritage Interpretation Plan, as required under Condition E167.</li> </ul> | Applicable | Applicable | Partially Applicable (implement Historical Archaeological Research Designs covering Historical Archaeological Management Units 4 (Victoria Road/City West Link) and 8 (Iron Cove). | Not Applicable          |

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| E170 | Where excavation works are required in the vicinity of potential archaeological sites, the Excavation Director must be consulted to advise on how the works are to be managed and any archaeological impact minimised. The Excavation Director must be given the authority to advise on the duration and extent of oversight required during excavation.  | Applicable | Applicable | Applicable if triggered | Not Applicable          |
| E171 | Works within the vicinity of the find must not recommence until the relevant requirements of the Historical Archaeological Research Design and Excavation Methodology or advice on unexpected finds from the Excavation Director have been met.   | Applicable | Applicable | Applicable if triggered | Applicable if triggered |
| E172 | The Proponent must prepare an Archaeological Excavation Report containing the findings of any excavations, including artefact analysis and the identification of a final repository of any finds. The report must be submitted to the Secretary within 12 months of completing all archaeological investigations. The Archaeological Excavation Report must also be submitted to the Heritage Council of NSW, the local library and the local Historical Society in the relevant local government area(s). A copy of the Archaeological Excavation Report must be retained with the relics at all times.  | Applicable | Applicable | Applicable if triggered | Not Applicable          |
| E173 | The Proponent must take all reasonable steps so as not to harm, modify or otherwise impact any Aboriginal object associated with the CSSI except as authorised by this approval.  | Applicable | Applicable | Applicable              | Applicable              |
| E174 | The clearing of native vegetation must be minimised with the objective of reducing impacts to any threatened species, populations and ecological communities to the greatest extent practicable. Impacted vegetation must be rehabilitated with endemic species (in the first instance) and locally native species to the greatest extent practicable.  | Applicable | Applicable | Applicable              | Not Applicable          |
| E175 | Prior to removing/clearing any vegetation, or demolition of structures identified as potential roosting sites for microbats, pre-clearing/demolition inspections for microbats and threatened species must be undertaken. The inspections, and any subsequent relocation of species and associated management/offset measures, must be undertaken under the guidance of a suitably qualified and experienced ecologist. Surveys for the presence of microbat roosting must be undertaken to cover the period of roosting, under guidance of a suitably qualified and experienced. Survey methodologies must be incorporated into the Construction Flora and Fauna Management Sub-plan required under Condition C4 and Site Establishment Management Plan required under Condition C22, as relevant. | Applicable | Applicable | Applicable if triggered | Not Applicable          |
| E176 | The Proponent must prepare a Microbat Management Strategy in the case that microbats or evidence of roosting are identified during pre-clearing/demolition surveys. The strategy must detail short- and long-term measures to avoid, minimise and mitigate impacts to these species.  | Applicable | Applicable | Not Applicable          | Not Applicable          |



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| E177 | The CSSI must be designed to retain as many trees as possible. Where trees are to be removed, the Proponent must provide a net increase in the number of replacement trees. Replacement trees must be planted within, and on public land up to 500 metres from the CSSI boundary. Replacement tree plantings can be undertaken beyond 500 metres on public land within the local government areas to which the CSSI approval applies if no more plantings are practicable within and up to 500 metres from the CSSI boundary. The location of the trees must be determined in consultation with the relevant authority(s). | Applicable | Applicable | Not Applicable | Not Applicable |
| E178 | Replacement trees are to have a minimum pot size of 75 litres except where the plantings are consistent with the pot sizes specified in a relevant authority's plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant authority(s).   | Applicable | Applicable | Applicable     | Not Applicable |
| E179 | The Proponent must submit to the Secretary a report which details the type, size, number and location of replacement trees. The report must demonstrate how any replacement plantings with a pot size less than 75 litres are consistent with the requirements of Condition E178. The report must be submitted to the Secretary one (1) month prior to operation.  | Applicable | Applicable | Applicable     | Not Applicable |
| E180 | All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise any water pollution. When implementing such controls, any relevant guidance in the Managing Urban Stormwater series must be considered.  | Applicable | Applicable | Applicable     | Applicable     |
| E181 | A Site Contamination Report, documenting the outcomes of Phase 1 and Phase 2 contamination assessments of land upon which the CSSI is to be carried out, that is suspected, or known to be, contaminated must be prepared by a suitably qualified and experienced person in accordance with guidelines made or approved under the Contaminated Land Management Act 1997 (NSW).   | Applicable | Applicable | Not Applicable | Not Applicable |
| E182 | If a Site Contamination Report prepared under Condition E181 finds such land contains contamination, a site audit is required to determine the suitability of a site for a specified use. If a site audit is required, a Site Audit Statement and Site Audit Report must be prepared by a NSW EPA Accredited Site Auditor. Contaminated land must not be used for the purpose approved under the terms of this approval until a Site Audit Statement is obtained that declares the land is suitable for that purpose and any conditions on the Site Audit Statement have been complied with.                               | Applicable | Applicable | Not Applicable | Not Applicable |
| E183 | A copy of the Site Audit Statement and Site Audit Report must be submitted to the Secretary and relevant council for information no later than one (1) month prior to the commencement of operation.   | Applicable | Applicable | Not Applicable | Not Applicable |

|      |  |            |            |                |                |
|------|--|------------|------------|----------------|----------------|
| E184 | An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared and must be followed should unexpected contaminated land or asbestos be excavated or otherwise discovered during construction.   | Applicable | Applicable | Applicable     | Applicable     |
| E185 | The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.   | Applicable | Applicable | Applicable     | Applicable     |
| E186 | The CSSI construction water treatment plant discharge criteria must comply with the ANZECC (2000) 90 per cent species protection level unless an EPL is in force in respect to the CSSI. Discharge criteria for iron during construction must comply with the ANZECC (2000) recreational water quality criteria.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E187 | The CSSI operational water treatment plant discharge criteria must comply with the ANZECC (2000) 95 per cent species protection level and a 99 per cent protection level for contaminants that bioaccumulate unless other discharge criteria are agreed in consultation with relevant stakeholders including EPA, DPI Water and Sydney Water. Discharge criteria for iron during operation must comply with the ANZECC (2000) recreational water quality criteria. | Applicable | Applicable | Not Applicable | Not Applicable |
| E188 | Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be undertaken in accordance with relevant guidelines and designed by a suitably qualified and experienced person.  | Applicable | Applicable | Not Applicable | Applicable     |
| E189 | Works on waterfront land must be undertaken in accordance with DPI controlled activity guidelines.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E190 | The Proponent must take all practicable 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.   | Applicable | Applicable | Not Applicable | Not Applicable |
| E191 | The Proponent must identify and commit to the implementation of 'make good' provisions for groundwater users in the event of a decline in water supply levels, quality and quantity from registered existing bores associated with groundwater changes from either construction and/or ongoing operational dewatering caused by the CSSI.  | Applicable | Applicable | Not Applicable | Not Applicable |

|      |   |            |            |                |                |
|------|---|------------|------------|----------------|----------------|
| E192 | <p>The Proponent must undertake further modelling of groundwater drawdown, tunnel inflows and saline water migration (using particle tracking) prior to finalising the design of the tunnels and undertaking any works that would impact on groundwater flows or levels. The modelling must be undertaken in consultation with DPI Water and include the results and hydrogeological analyses of at least 12 continuous months of current baseline groundwater monitoring data from bores identified in the EIS and SPIR. The modelling must also include data from any other existing monitoring bores identified in consultation with DPI Water, as required to supplement baseline data.</p>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E193 | <p>The results of the groundwater modelling must be documented in a Groundwater Modelling Report. The Groundwater Modelling Report must be finalised in accordance with the Australian Groundwater Modelling Guidelines (National Water Commission, 2012) and prepared in consultation with DPI Water. The Groundwater Modelling Report must include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a) justification for layer choice;</li> <li>b) specification and justification of the grid based hydraulic conductivity and storage parameters (specific yield and specific storage) assigned to each layer and/or zone with reference to those values determined from data analyses and the literature;</li> <li>c) an explanation of how groundwater flow was simulated within each model layer with reference to confined, unconfined or variably saturated flow solutions;</li> <li>d) an explanation and justification of the drain-cell conductance term(s) applied to the tunnel boundaries to limit tunnel inflows;</li> <li>e) an explanation and justification of the groundwater recharge values applied across the model domain, including around the modelled specific yield values and the water table fluctuations observed within the monitoring data in response to rainfall-fed groundwater recharge;</li> <li>f) details (including figures) of the expected changes in groundwater flow directions in the vicinity of landfills, groundwater wells and surface water receptors;</li> <li>g) cross-section diagrams of geology showing baseline groundwater levels in the monitoring piezometres, and for the predicted baseline condition groundwater levels in 2030 and 2100;</li> <li>h) statistical evaluation of the model's calibration;</li> <li>i) details of the groundwater monitoring data inputs (levels and quality);</li> <li>j) details of the proposed groundwater model update and validation as additional data is collected;</li> <li>k) assessment of impacts of groundwater drawdown, taking into consideration the NSW Aquifer Interference Policy (DPI, 2012), including potential impacts on licensed bores and groundwater dependent ecosystems;</li> </ul> | Applicable | Applicable | Not Applicable | Not Applicable |

|      |  |            |            |                |                |
|------|--|------------|------------|----------------|----------------|
|      | <p>l) a comparison of the results with the modelling results detailed in the documents referred to in Condition A1; and</p> <p>m) documentation of any additional measures that would be implemented to manage and/or mitigate groundwater impacts not previously identified.</p> <p>A copy of the Groundwater Modelling Report must be submitted to the Secretary prior to finalising the tunnel design. The Groundwater Modelling Report must include details of consultation with DPI Water.</p>  |            |            |                |                |
| E194 | The groundwater model must be updated once 24 months of construction groundwater monitoring data are available and the results of the updated modelling provided to the Secretary and DPI Water in an updated Groundwater Modelling Report.  | Applicable | Applicable | Not Applicable | Not Applicable |
| E195 | The Proponent must undertake further hydrological and hydraulic modelling based on the detailed design of the CSSI to determine the ability of the receiving drainage systems to effectively convey pavement drainage from the CSSI and include wastewater flows from operational water treatment plants where it is proposed to discharge these flows to the receiving drainage systems. The modelling must be undertaken in consultation with the relevant council(s) and Sydney Water and the outcomes documented in the <b>Stormwater Drainage Report</b> required under <b>Condition E196</b> .   | Applicable | Applicable | Not Applicable | Not Applicable |
| E196 | <p>The <b>Stormwater Drainage Report</b> must be prepared at least one (1) month prior to the commencement of any new drainage works, modifications or connections to existing drainage works, construction of hard surfaces that are associated with the operation of the project and would result in runoff to existing stormwater drainage systems, and the discharge of wastewater flows from operational water treatment plants to existing stormwater drainage systems. The <b>Stormwater Drainage Report</b> must:</p> <p>a) assess the potential impacts of pavement drainage discharges from the CSSI drainage systems and wastewater flows from operational water treatment plants on the receiving environment and capacity of council or Sydney Water drainage infrastructure;</p> <p>b) identify all mitigation measures to be implemented where pavement drainage from the CSSI drainage systems or wastewater flows from operational water treatment plants are predicted to adversely impact on the receiving environment or capacity of council or Sydney Water drainage infrastructure; and</p> <p>c) set out a clear time frame for the implementation of mitigation measures.</p> <p>Nothing in this condition prevents the Proponent from preparing separate Stormwater Drainage Reports for pavement discharges or wastewater discharges from operational water treatment plants</p> | Applicable | Applicable | Not Applicable | Not Applicable |

|      |  |            |            |                |                |
|------|--|------------|------------|----------------|----------------|
|      | to the drainage system provided that each report is prepared at least one month prior to the subject works/discharges commencing.  |            |            |                |                |
| E197 | <p>All new or modified drainage systems associated with the CSSI must be designed to:</p> <ul style="list-style-type: none"> <li>a) meet the capacity constraints of any council's drainage system to receive and convey the proposed flows from the CSSI, or otherwise upgrade council's drainage system at the Proponent's expense, in consultation with the relevant council(s);</li> <li>b) minimise impacts on the receiving environment at the final outflow point resulting from any additional flow volume (including, but not limited to scour, flooding, water quality impacts, and impacts on riparian vegetation, aquatic ecology and property); and</li> <li>c) ensure mitigation measures are implemented where increased flows through cross drainage systems adversely impact on council or Sydney Water drainage infrastructure and the receiving environment.</li> </ul>   | Applicable | Applicable | Not Applicable | Not Applicable |
| E198 | <p>The Proponent must prepare a Water Reuse Strategy which sets out options for the reuse of collected stormwater and groundwater during construction and operation of the CSSI. The Water Reuse Strategy must include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a) evaluation of reuse options;</li> <li>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; and</li> <li>c) a time frame for the implementation of the preferred reuse option(s).</li> </ul> <p>The Water Reuse Strategy must consider public health risks from water recycling and must be managed to avoid misuse of recycled water as potable water. The Water Reuse Strategy must be undertaken following best practice and advice from sought from relevant agencies as required.</p> <p>Justification must be provided in the event that it is concluded that no reuse options prevail.</p> <p>A copy of the Water Reuse Strategy must be submitted to the Secretary for approval prior to commencement of tunnelling works.</p> <p>Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational phases of the CSSI. Where a separate Strategy is prepared for the operation of the CSSI, this must be submitted to the Secretary for approval at least six (6) months prior to the commencement of operation of the CSSI.</p> | Applicable | Applicable | Not Applicable | Not Applicable |

|      |   |            |            |  |   |
|------|---|------------|------------|--|---|
| E199 | 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.   | Applicable | Applicable | Not Applicable due to small scale nature of works  | Not Applicable due to small scale nature of works |
| E200 | The Sustainability Strategy must be submitted to the Secretary for information prior to the commencement of works, and must be implemented throughout construction and operation.   | Applicable | Applicable | Not Applicable due to small scale nature of works. | Not Applicable due to small scale nature of works |
| E201 | Opportunities to reduce operational greenhouse gas emissions must be investigated during detailed design. The sustainability initiatives identified must be implemented, reviewed, updated regularly throughout the design development and construction.  | Applicable | Applicable | Applicable   | Applicable  |
| E202 | Waste generated during delivery of the CSSI is to be dealt with in accordance with the following priorities:<br><ul style="list-style-type: none"> <li>a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced;</li> <li>b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered; and</li> <li>c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of at a waste management facility or premise lawfully permitted to accept the materials 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.</li> </ul> | Applicable | Applicable | Applicable   | Applicable  |
| E203 | Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the Protection of the Environment Operations Act 1997, if such a licence is required in relation to that waste.  | Applicable | Applicable | Applicable   | Applicable  |
| E204 | All waste generated during construction and operation must be classified in accordance with the EPA’s Waste Classification Guidelines, with appropriate records and disposal docketts retained for audit purposes.  | Applicable | Applicable | Applicable   | Applicable  |



## Appendix B Revised Environmental Management Measures applicability

Note: For **Stage 2** post opening of the Rozelle Interchange, consistent with the applicability of conditions of approval detailed in Appendix A, the following REMMs are not applicable to the remaining Western Harbour Tunnel enabling works construction: SW01, SW02, SW04, B1 and NAH01.



| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br><br>(Stage 3)* | Rozelle Parkland Enhancement<br><br>(Stage 4) |
|------|---|---|---|
| TT01 | <p>A Construction Traffic and Access Management Plan (CTAMP) will be prepared as part of the CEMP. The CTAMP will include the guidelines, general requirements and principles of traffic management to be implemented during construction. It will be prepared in accordance with Austroads Guide to Road Design (with appropriate Roads and Maritime supplements), the RTA Traffic Control at Work Sites Manual and AS1742.3: Manual of uniform traffic control devices – Part 3: Traffic control for works on roads, and any other relevant standard, guide or manual. The CTAMP will be prepared in consultation with relevant transport stakeholders and local councils.</p> <p>The overarching strategy of the CTAMP will be to:</p> <ul style="list-style-type: none"> <li>• Ensure all relevant stakeholders are considered during all stages of the project</li> <li>• Provide safe routes for pedestrians and cyclists during construction</li> <li>• Design the permanent works and Develop construction methodologies so that interaction with existing road users is minimised thereby creating a safer work and road user environment Plan and stage works to minimise the need for road occupancy, where possible</li> <li>• Develop project staging plans in consultation with relevant traffic and transport stakeholders</li> <li>• Minimise the number of changes to the road users' travel paths and, where changes are required, develop and implement an effective community communication strategy, coupled with temporary wayfinding signage to warn, inform and guide. This will aim to minimise confusion by providing clear and concise traffic management schemes</li> <li>• Comprehensively communicate changes in traffic conditions to roads or paths to emergency services, public transport operators, other road user groups and any other affected stakeholders</li> <li>• Identify measures to manage the movements of construction-related traffic to minimise traffic and access disruptions in the public road network</li> <li>• Minimise the use of local roads for heavy vehicles</li> </ul> | Partially Applicable, refer Appendix D.   | Partially applicable, refer Appendix E.       |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)            |
|------|--|--|---|
|      | <ul style="list-style-type: none"> <li>Minimise the loss of on-road parking for local residents</li> <li>Describe a car parking strategy for construction staff at the various worksites and ancillary facilities</li> </ul>   |  |   |
| TT02 | Identify potential road user delays during the planning and consultation phases and include strategies within the CTAMP to reduce identified delays.   | Partially Applicable, refer Appendix D.  | Partially applicable, refer Appendix E.           |
| TT03 | Develop construction staging and temporary works that minimises conflicts with the existing road network and maximises spatial separation between work areas and travel lanes.   | Not applicable due to small scale nature of works                                | Applicable, refer Appendix E.                     |
| TT04 | <p>The car parking strategy described in the CTAMP will:</p> <ul style="list-style-type: none"> <li>Quantify construction workforce parking demand around project work sites and ancillary facilities during site establishment and the construction phase generally</li> <li>Identify public transport options and other management measures (such as carpooling and shuttle-buses) to reduce construction workforce parking demand</li> <li>Identify all locations that will be used for construction workforce parking (including potential use of government owned land and other potential areas near to the construction ancillary facilities)</li> <li>Identify potential offsite areas that could be used for construction workforce parking that would be investigated and secured for use during construction where required and possible</li> <li>Identify parking exclusion zones, in consultation with potentially affected stakeholders, around construction sites and facilities where construction workforce parking would be restricted.</li> </ul> <p>The strategy will also be developed in consultation with the M4 East and New M5 contractors to identify opportunities to use existing parking arrangements associated with those projects during their respective construction periods and once those periods are completed.</p> | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |
| TT05 | Isolate work areas from general traffic through the implementation of appropriate traffic and access controls.   | Applicable   | Applicable  |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)            |
|------|--|--|---|
| TT06 | Develop and implement work methods to minimise delays and road user impacts, for example utilising more efficient plant and equipment, and applying different design solutions.  | Applicable   | Applicable  |
| TT07 | Provide temporary closed-circuit television (CCTV) and Variable Message Signs (VMS) in consultation with the Traffic Management Centre (TMC) to link with the existing TMC network to facilitate real time monitoring and management of impacts and traffic safety in the vicinity of the project. | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |
| TT08 | During construction, work with the TMC to improve traffic conditions around work and incidents from CCTV footage and modify sites wherever practicable.  | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |
| TT09 | Provide a mechanism for the community to report incidents and delays, for example a project phone number. Advertise details along the construction site's interface with the road network.   | Applicable   | Applicable  |
| TT10 | Schedule construction-related transport movements to avoid peak traffic periods and minimise project-related congestion, where possible.   | Applicable   | Applicable  |
| TT11 | Develop and adopt robust community and stakeholder communication protocols regarding altered traffic conditions.   | Applicable   | Applicable  |
| TT12 | Minimise impacts on the pedestrian paths and cycle lanes, and provide timely alternatives during construction where practical and safe to do so.   | Applicable   | Applicable  |
| TT13 | Identify impacts on bus stops and provide alternative locations and access in consultation with Transport for NSW.   | Applicable   | Not applicable                                    |
| TT14 | Manage local road closures and maintain adequate property access. This will be undertaken in consultation with Roads and Maritime, local councils and property owners likely to be impacted.   | Applicable   | Applicable  |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br><br>(Stage 3)* | Rozelle Parkland Enhancement<br><br>(Stage 4)     |
|------|---|---|---|
| TT15 | Identify spoil haulage routes and designated routes for other project-related heavy vehicles and communicate, along with site access requirements and restrictions, to all relevant drivers. Designated heavy vehicle routes will be identified with consideration of potentially affected stakeholders, such as schools, day care centres, nursing homes and places of worship, around project sites that might be adversely affected by project-related heavy vehicle movements. Routes and associated restrictions of use of the routes will be developed to minimise identified potential impacts. Project-related heavy vehicle routes and any associated restrictions of use will be documented in the CTAMP. | Not applicable due to small scale nature of works                                       | Not applicable due to small scale nature of works |
| TT16 | Develop and implement a truck management strategy (as part of the CTAMP) that: <ul style="list-style-type: none"> <li>• Identifies truck marshalling areas that will be used by project-related heavy vehicles</li> <li>• Describes management measures for project-related heavy vehicles to avoid queuing and site-circling in adjacent streets and other potential traffic and access disruptions</li> <li>• Describes monitoring programs to demonstrate that project-related heavy vehicles are complying with the strategy.</li> </ul>  | Not applicable due to small scale nature of works                                       | Not applicable due to small scale nature of works |
| TT17 | Monitor and manage project-related heavy vehicle movements to and from sites with the aim of limiting any associated increases in road traffic noise levels during the night-time period to no more than 2 dBA. Any increases in road traffic noise of more than 2 dBA due to project-related vehicle movements will be managed in accordance with the Construction Noise and Vibration Guideline (Roads and Maritime 2016).  | Not applicable due to small scale nature of works                                       | Not applicable due to small scale nature of works |
| TT18 | Prepare a road dilapidation report, 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.   | Applicable  | Applicable  |
| TT19 | Roads and Maritime will continue to consult with the Port Authority of NSW and other stakeholders as appropriate to ensure coordination between the operation of the White Bay civil site (C11) and other relevant projects in the vicinity, including existing operations associated with port activities.   | Applicable  | Not applicable                                    |

| REMM  | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)            |
|-------|---|--|---|
| TT20  | An Active Transport Network Implementation Strategy will be prepared for the project. The strategy will be consistent with the Active transport strategy in Appendix N of the EIS. The strategy will be prepared in consultation with relevant councils and Bicycle NSW and implemented prior to the commencement of project operations or as otherwise agreed to by the Secretary of NSW Department of Planning and Environment.   | Applicable   | Not applicable due to small scale nature of works |
| OpTT1 | A review of operational network performance will be undertaken 12 months and five years from the opening of the project to confirm the operational impacts of the project on surrounding arterial roads and major intersections in proximity to the Wattle Street interchange, Rozelle interchange and St Peters interchange. The assessment will be based on updated traffic surveys at the time and the methodology used will be comparable with that used in this assessment. The results of the review will be considered in future operational network performance planning carried out by Roads and Maritime. | Not applicable   | Not applicable due to small scale nature of works |
| OpTT2 | To manage potential performance constraints at the Wattle Street interchange, Roads and Maritime will investigate the implementation of the following in consultation with local councils: <ul style="list-style-type: none"> <li>• Queuing and capacity monitoring and management on the Frederick Street/Milton Street corridor</li> <li>• Managing lane use and utilisation to improve the operation of the corridor.</li> </ul>   | Not applicable   | Not applicable due to small scale nature of works |
| OpTT3 | Roads and Maritime will develop a strategy to ensure appropriate network integration in the areas surrounding the Rozelle interchange. The strategy will include a review of: <ul style="list-style-type: none"> <li>• Capacity improvement measures</li> <li>• The interface with road based public transport on the Western Distributor and Victoria Road in consultation with Transport for NSW</li> <li>• Project staging options</li> <li>• Demand management measures</li> </ul>  | Not applicable   | Not applicable                                    |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)  |
|------|---|--|---|
| AQ1  | A Construction Air Quality Management Plan will be developed and implemented to monitor and manage potential air quality impacts associated with the construction for the project. The management plan will include controls required to reduce the emission of dust out of the door openings of acoustic sheds. The Plan will be implemented for the duration of construction. | Partially Applicable, refer Appendix D.  | Partially Applicable, refer Appendix E. |
| AQ2  | Regular communication to be carried out with other WestConnex projects under construction sites in close proximity to ensure that measures are in place to manage cumulative dust impacts   | Not Applicable   | Not Applicable                          |
| AQ3  | Regular site inspections will be conducted to monitor for potential dust issues. The site inspections, required actions and ongoing issues, will be recorded and actioned appropriately within agreed timeframes by relevant project personnel.   | Applicable   | Applicable                              |
| AQ4  | Construction activities with the potential to generate dust will be modified or ceased during unfavourable weather conditions to reduce the potential for dust generation.  | Applicable   | Applicable                              |
| AQ5  | Measures to reduce potential dust generation, such as the use of water carts, sprinklers, dust screens and surface treatments, will be implemented within project sites as required   | Applicable   | Applicable                              |
| AQ6  | Access roads within project sites will be maintained and managed to reduce dust generation.   | Applicable   | Applicable                              |
| AQ7  | Where reasonable and feasible, appropriate control methods will be implemented to minimise dust emissions from the project site.  | Applicable   | Applicable                              |
| AQ8  | Storage of materials that have the potential to result in dust generation will be minimised within project sites at all times   | Applicable   | Applicable                              |
| AQ9  | All construction vehicles and plant will be inspected regularly and maintained to ensure that they comply with relevant emission standards.   | Applicable   | Applicable                              |

| REMM | Description  | Rozelle Interchange<br>Pedestrian and<br>Cyclist<br>Improvement<br>Strategy (E58)<br><br>(Stage 3)* | Rozelle<br>Parkland<br>Enhancement<br><br>(Stage 4)                     |
|------|--|---|---|
| AQ10 | Engine idling will be minimised when plant is stationary, and plant will be switched off when not in use to reduce emissions.  | Applicable  | Applicable  |
| AQ11 | The use of mains electricity will be favoured over diesel or petrol-powered generators where practicable to reduce site emissions.   | Applicable  | Applicable  |
| AQ12 | Haul roads will be treated with water carts and monitored during earthworks operations, ceasing works if necessary during high winds where dust controls are not effective.  | Applicable  | Applicable  |
| AQ13 | Suitable dust suppression and/or collection techniques will be used during cutting, grinding or sawing activities likely to generate dust in close proximity to sensitive receivers.   | Applicable  | Applicable  |
| AQ14 | The potential for dust generation will be considered during the handling of loose materials. Equipment will be selected and handling protocols developed to minimise the potential for dust generation.  | Applicable  | Applicable  |
| AQ15 | All loaded spoil haulage trucks and other project-related heavy vehicles carrying materials with the potential to result in dust generation will be covered to prevent dust emissions during transport in accordance with relevant road regulations. | Applicable  | Applicable  |
| AQ16 | Demolition activities will be planned and carried out to minimise the potential for dust generation.   | Not applicable.<br>Demolition not<br>proposed as part of<br>Stage 3.                                | Not applicable<br><br>Demolition not<br>proposed as part<br>of Stage 4. |
| AQ17 | Adequate dust suppression will be applied during all demolition works required to facilitate the project.  | Not applicable.<br>Demolition not<br>proposed as part of<br>Stage 3.                                | Not applicable<br><br>Demolition not<br>proposed as part<br>of Stage 4. |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)                      |
|------|---|--|---|
| AQ18 | All potentially hazardous material will be identified and removed from buildings in an appropriate manner prior to the commencement of and/or progressively during demolition and in accordance with all relevant codes of practice   | Not applicable. Demolition not proposed as part of Stage 3.                      | Not applicable. Demolition not proposed as part of Stage 4. |
| AQ19 | Areas of soil exposed during construction will be minimised at all times to reduce the potential for dust generation  | Applicable   | Applicable  |
| AQ20 | Exposed soils will be temporarily stabilised during weather conditions conducive to dust generation and prior to extended periods of inactivity to minimise dust generation.  | Applicable   | Applicable  |
| AQ21 | Exposed soils will be permanently stabilised as soon as practicable following disturbance to minimise the potential for ongoing dust generation.  | Applicable   | Applicable  |
| AQ22 | Ensure that stockpiles of materials with the potential to result in dust emissions are adequately protected and managed to reduce potential dust generation.  | Applicable   | Applicable  |
| AQ23 | Ensure fine materials are stored and handled to minimise dust.  | Applicable   | Applicable  |
| AQ24 | All sealed surfaces within sites and site accesses will be managed to reduce dust generation and sediment tracking onto roads.  | Applicable   | Applicable  |
| AQ25 | At the commencement of establishment of project ancillary facilities, controls such as wheel washing systems and rumble grids will be installed at all site exits to prevent deposition of loose material on sealed surfaces outside project sites to reduce potential dust generation. | Not applicable. Ancillary sites not proposed as part of Stage 3.                 | Applicable  |
| AQ26 | Tunnel infrastructure will be designed in such a way that the generation of pollutant emissions by the traffic using the tunnel is minimised. The main considerations are minimising gradients and ensuring that lane capacity remains constant or increases from entry to exit point.  | Not applicable   | Not applicable  |



| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br>(Stage 3)* | Rozelle Parkland Enhancement<br>(Stage 4) |
|------|--|---|---|
| AQ27 | <p>An in-tunnel air quality monitoring system will be included in the detailed design. The system will monitor oxides of nitrogen, nitrogen dioxide, carbon monoxide and visibility (as a minimum) throughout the tunnel.</p> <p>Monitoring of each pollutant will be undertaken throughout the tunnel. The locations of monitoring equipment will generally be at the beginning and end of each ventilation section. This will include, for example, monitors at each entry ramp, exit ramp, merge point and ventilation exhaust and supply point. The location of monitors will be governed by the need to meet the in-tunnel air quality criteria for all possible journeys through the tunnel system, especially for nitrogen dioxide. This will require sufficient, appropriately placed monitors to calculate a journey average.</p> | Not applicable  | Not applicable                            |
| AQ28 | <p>Air velocity monitors will be placed in each tunnel ventilation section and at portal entry and exit points. The specific location of air velocity monitors will be subject to the detailed design of the project. The velocity monitors in combination with the air quality monitors will be used to modulate the ventilation within the tunnel to manage air quality and to ensure net air inflow at all tunnel portals.</p>  | Not applicable  | Not applicable                            |
| AQ29 | <p>Ambient air quality monitoring will be carried out in the vicinity of the ventilation outlets installed as part of the project. Monitoring will occur at key representative locations, identified in consultation with an independent air quality specialist and an Air Quality Community Consultative Committee (AQCCC), to allow direct comparison of measured ambient air quality with dispersion model predictions. The monitoring will commence at least 12 months prior to and continue for at least two years following the commencement of operation. Monitoring results and a comparison of monitoring results against dispersion model predictions and relevant ambient air quality criteria will be made publicly available.</p>   | Not applicable  | Not applicable                            |
| NV1  | <p>A suitably qualified and experienced acoustics advisor Acoustics Advisor, who is independent of the design and construction personnel, will be engaged for the duration of construction of the project. The Acoustics Advisor will be responsible for:</p> <ul style="list-style-type: none"> <li>• Reviewing management plans related to noise and vibration and endorsing that they address all relevant conditions of approval and requirements of all applicable guidelines</li> </ul>  | Applicable  | Applicable                                |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br><br>(Stage 3)* | Rozelle Parkland Enhancement<br><br>(Stage 4) |
|------|---|---|---|
|      | <ul style="list-style-type: none"> <li>• Reviewing location and activity specific noise and vibration impact assessments prepared during the project and endorsing the assessments and proposed mitigation measures</li> <li>• Reviewing proposals regarding works outside standard construction hours, confirming that the works are appropriate and endorsing the proposed mitigation measures</li> <li>• Monitoring noise and vibration from construction generally and: <ul style="list-style-type: none"> <li>○ Confirming that actual noise and vibration levels and impacts are consistent with predictions</li> <li>○ Confirming that reasonable and feasible noise and vibration mitigation measures are being implemented</li> <li>○ Suggesting additional reasonable measures to further reduce impacts</li> </ul> </li> <li>• Monitoring and providing advice in relation to compliance with conditions of approval and project commitments related to noise and vibration</li> <li>• Providing advice in relation to complaints regarding noise and vibration impacts that cannot be resolved between the complaint and the project</li> <li>• Reviewing and endorsing the proposed operational noise controls, the associated noise model and the proposed implementation program.</li> </ul> |   |   |
| NV2  | <p>A Construction Noise and Vibration Management Plan (CNVMP) will be prepared for the project. The plan will:</p> <ul style="list-style-type: none"> <li>• Identify relevant performance criteria in relation to noise and vibration</li> <li>• Identify noise and vibration sensitive receivers and features in the vicinity of the project</li> <li>• Include standard and additional mitigation measures from the Construction Noise and Vibration Guideline (CNVG) (Roads and Maritime 2016) and details about when each will be applied</li> <li>• Describe the process(es) that will be adopted for carrying out location and activity specific noise and vibration impact assessments to assist with the selection of appropriate mitigation measures</li> </ul>  | Partially Applicable, refer Appendix D.   | Partially applicable, refer Appendix E.       |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|---|--|--|
|      | <ul style="list-style-type: none"> <li>• Include protocols that will be adopted to manage works required outside standard construction hours in accordance with relevant guidelines</li> <li>• Detail monitoring that will be carried out to confirm project performance in relation to noise and vibration performance criteria.</li> </ul> <p>The CNVMP will be implemented for the duration of construction of the project.</p>  |  |  |
| NV3  | <p>Detailed noise assessments will be carried out for all ancillary facilities required for construction of the project. The assessment will consider the proposed site layouts and noise generating activities that will occur at the facilities and assess predicted noise levels against the relevant noise management levels determined in accordance with the requirements of the Interim Construction Noise Guideline (ICNG) (NSW Department of Environment and Climate Change NSW (DECC) 2009). The assessments will be used to determine the appropriate heights and configurations of noise barriers, and other appropriate noise management measures, consistent with the requirements of the ICNG and the CNVG. Noise barriers, as confirmed through the noise assessments, will be installed as early as possible during site establishment and as a minimum prior to the commencement of excavation associated with tunnel access.</p> | Not applicable due to small scale nature of works                                | Not applicable                         |
| NV4  | <p>Location and activity specific noise and vibration impact assessments will be carried out prior to (as a minimum) activities:</p> <ul style="list-style-type: none"> <li>• With the potential to result in noise levels above 75 dBA at any receiver</li> </ul> <p>Required outside standard construction hours likely to result in noise levels greater than the relevant noise management levels</p> <ul style="list-style-type: none"> <li>• With the potential to exceed relevant performance criteria for vibration.</li> </ul> <p>The assessments will clarify predicted impacts at relevant receivers in the vicinity of the activities to assist with the selection of appropriate management measures, consistent with the requirements of ICNG and CNVG that will be implemented during the works.</p>   | Partially Applicable, refer Appendix D.  | Applicable                             |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)  |
|------|---|--|---|
| NV5  | <p>An out-of-hours works protocol will be developed for the construction of the project. The protocol will include:</p> <ul style="list-style-type: none"> <li>• Details of works required outside standard construction hours, including justification of why the activities are required outside standard construction hours</li> <li>• Measures that will be implemented to manage potential impacts associated with works outside standard construction hours</li> <li>• Location and activity specific noise and vibration impact assessment process(es) that will be followed to identify potentially affected receivers, clarify potential impacts and select appropriate management measures</li> <li>• Details of the approval process (internal and external) for works proposed outside standard construction hours.</li> </ul> <p>The protocol will be included in the CNVMP, prepared in consultation with NSW Department of Planning and Environment and the NSW EPA, endorsed by the Acoustics Advisor for the project and implemented during construction of the project.</p> | Applicable, refer Appendix D.  | Applicable                              |
| NV6  | Monitoring will be carried out at the commencement of activities for which a location and activity specific noise and vibration impact assessment has been prepared to confirm that actual noise and vibration levels are consistent with noise and vibration impact predictions and that the management measures that have been implemented are appropriate.   | Not applicable due to small scale nature of works                                | Partially applicable, refer Appendix E. |
| NV7  | Acoustic sheds will be designed within with consideration of the activities that will occur within them and the relevant noise management levels in adjacent areas. Monitoring will be carried out to confirm that the actual acoustic performance of each shed is consistent with predicted acoustic performance.  | Not applicable   | Not applicable                          |
| NV8  | <p>A Blast Management Strategy will be prepared and implemented for the project if blasting is proposed.</p> <p>The strategy will:</p>  | Not applicable   | Not applicable                          |

| REMM | Description  | Rozelle Interchange<br>Pedestrian and<br>Cyclist<br>Improvement<br>Strategy (E58)<br><br>(Stage 3)* | Rozelle<br>Parkland<br>Enhancement<br><br>(Stage 4) |
|------|--|---|---|
|      | <ul style="list-style-type: none"> <li>• Identify relevant performance criteria in relation to potential noise and vibration impacts due to blasting with reference to (as a minimum) Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration (Australian and New Zealand Environment Conservation Council (ANZECC), 1990) and Australian Standard AS 2187.2-2006 Explosives - Storage, transport and use, Part 2: Use of explosives</li> <li>• Describe trials that will be carried out to confirm vibration levels from blasting and facilitate development of predictive tools to allow potential noise and vibration impacts to be identified</li> <li>• Include details of management measures that will be implemented to ensure compliance with relevant performance criteria</li> <li>• Include details of community consultation requirements prior to commencing blasting.</li> </ul> <p>The Blast Management Strategy will be implemented for all blasting carried out as part of the project.</p> |   |   |
| NV9  | Receivers that qualify for assessment for at receiver treatment in relation to operational noise that are also predicted to experience significant exceedances of noise management levels due to construction will be given priority preference for assessment for treatment based on the severity and timing of impact. Where the building owner accepts the at receiver treatment proposal, the treatments will be installed as soon as possible.  | Not applicable  | Not applicable                                      |
| NV10 | Where reasonable and feasible, operational noise mitigation such as noise barriers, berms and at property treatments identified during detailed design should be installed early in the project so as to provide a benefit to receivers during the construction phase of the project.  | Not applicable  | Not applicable                                      |
| NV11 | Open Graded Asphalt (OGA) or equivalent will be investigated during detailed design taking into account whole life engineering considerations and the overall social, economic and environmental effects. If low noise pavement is found to be appropriate, it will be considered as a management measure when assessing operation noise impacts based on the detailed design.   | Not applicable  | Not applicable                                      |
| NV12 | The area in the vicinity of the western portal of the Iron Cove Link, Rozelle, will be assessed further during development of the detailed design to identify appropriate noise mitigation measures to address predicted increases   | Not applicable  | Not applicable                                      |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|--|--|--|
|      | in road traffic noise to the project. The measures that will be considered will include low road noise pavement, noise barriers, at-property treatments and the project design.  |  |  |
| NV13 | Potential operational noise performance of the project based on the detailed design will be assessed in accordance with NSW Road Noise Policy (DECCW 2011) and appropriate management measures will be confirmed and implemented.  | Not applicable.  | Not applicable                         |
| NV14 | Within 12 months of the commencement of the operation of the project, actual operational noise performance will be compared to predicted operational noise performance. The need for any additional management measures to address any identified operational performance issues and meet relevant operational noise criteria will be assessed and implemented where reasonable and feasible.  | Not applicable.  | Not applicable                         |
| PL1  | Land acquisition for the project will be undertaken in accordance with the Land Acquisition (Just Terms Compensation) Act 1991 (NSW) and the Roads and Maritime Services Land Acquisition Information Guide (Roads and Maritime 2014) and the land acquisition reforms announced by the NSW Government in 2016.  | Not applicable. Land acquisition not proposed for Stage 3.                       | Not applicable                         |
| PL2  | Access to all properties will be maintained during construction, where feasible and reasonable, unless otherwise agreed by the relevant property owner or occupier. Any access physically affected by the project will be reinstated to at least an equivalent standard, unless agreed with by the property owner.   | Applicable   | Applicable                             |
| PL3  | <p>A Residual Land Management Plan will be prepared in consultation with relevant local councils and other key stakeholders. The plan will:</p> <ul style="list-style-type: none"> <li>• Identify and illustrate all remaining project land following construction of the project, including the physical location, land use characteristics, size and adjacent land uses</li> <li>• Identify feasible uses for remaining project land including justification for the selected use</li> <li>• Identify timeframes for implementation of the actions in relation to the identified feasible uses.</li> </ul> | Not applicable   | Not applicable                         |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|--|--|--|
| PL4  | <p>Existing residential properties (and approved residential developments approved prior to project approval) that are affected by overshadowing from the final detailed design of the project (including any noise mitigation measures) are to receive a minimum of three hours of direct sunlight in habitable rooms and in at least 50 per cent of the principal private open space area between 9.00 am and 3.00 pm on 21 June. Such properties must be identified for further consideration by the Proponent in a Solar Access and Overshadowing Report which addresses compliance with these requirements:</p> <ul style="list-style-type: none"> <li>• Where existing residential development currently receives less than the required amount of solar access, existing access to sunlight during operation should not be unreasonably reduced</li> <li>• Where affected properties include dwellings held under strata or community title, these requirements must be interpreted in relation to individual units within those properties.</li> </ul> | Not applicable   | Not applicable                         |
| PL5  | Detailed design of the ventilation facility building at the Iron Cove Link motorway operations complex (MOC4) will include consideration of treatments to minimise overshadowing on properties south of Victoria Road. This may include reducing the height of the building and/or increasing building setbacks or recessing the building.   | Not applicable   | Not applicable                         |
| PL6  | Ground settlement will be managed to comply with the following criteria where possible:  | Not applicable   | Not applicable                         |

| REMM  | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |                            |                                     |   |       |          |     |   |       |          |     |                         |       |          |     |       |       |          |     |  |  |
|---|--|--|--|----------------------------|-------------------------------------|---|-------|----------|-----|---|-------|----------|-----|-------------------------|-------|----------|-----|-------|-------|----------|-----|--|--|
|   | <table border="1" data-bbox="347 421 1285 831"> <thead> <tr> <th>Beneath structure/facility</th> <th>Maximum settlement</th> <th>Maximum angular distortion</th> <th>Limiting tensile strain (per cent)*</th> </tr> </thead> <tbody> <tr> <td>Buildings – Low or non-sensitive properties<br/>(ie less than or equal to two levels and carparks)</td> <td>30 mm</td> <td>1 in 350</td> <td>0.1</td> </tr> <tr> <td>Buildings – High or sensitive properties<br/>(ie greater than or equal to 3 levels and carparks)</td> <td>20 mm</td> <td>1 in 500</td> <td>0.1</td> </tr> <tr> <td>Roads and parking areas</td> <td>40 mm</td> <td>1 in 250</td> <td>N/A</td> </tr> <tr> <td>Parks</td> <td>50 mm</td> <td>1 in 250</td> <td>N/A</td> </tr> </tbody> </table> <p data-bbox="347 858 1563 919">* As defined in Burland et al. 'Building response to tunnelling – Case Studies from construction of the Jubilee Line Extension', London, Thomas Telford (2001)</p>                    | Beneath structure/facility   | Maximum settlement                     | Maximum angular distortion | Limiting tensile strain (per cent)* | Buildings – Low or non-sensitive properties<br>(ie less than or equal to two levels and carparks) | 30 mm | 1 in 350 | 0.1 | Buildings – High or sensitive properties<br>(ie greater than or equal to 3 levels and carparks) | 20 mm | 1 in 500 | 0.1 | Roads and parking areas | 40 mm | 1 in 250 | N/A | Parks | 50 mm | 1 in 250 | N/A |  |  |
| Beneath structure/facility  | Maximum settlement   | Maximum angular distortion   | Limiting tensile strain (per cent)*    |                            |                                     |   |       |          |     |   |       |          |     |                         |       |          |     |       |       |          |     |  |  |
| Buildings – Low or non-sensitive properties<br>(ie less than or equal to two levels and carparks) | 30 mm  | 1 in 350   | 0.1                                    |                            |                                     |   |       |          |     |   |       |          |     |                         |       |          |     |       |       |          |     |  |  |
| Buildings – High or sensitive properties<br>(ie greater than or equal to 3 levels and carparks)   | 20 mm  | 1 in 500   | 0.1                                    |                            |                                     |   |       |          |     |   |       |          |     |                         |       |          |     |       |       |          |     |  |  |
| Roads and parking areas   | 40 mm  | 1 in 250   | N/A                                    |                            |                                     |   |       |          |     |   |       |          |     |                         |       |          |     |       |       |          |     |  |  |
| Parks   | 50 mm  | 1 in 250   | N/A                                    |                            |                                     |   |       |          |     |   |       |          |     |                         |       |          |     |       |       |          |     |  |  |
| PL7   | <p data-bbox="347 959 1563 1126">Further assessment of potential settlement impacts, including numerical modelling, will be undertaken during detailed design. In areas where ground movement in excess of settlement criteria is predicted, an instrumentation and monitoring program to measure settlement, distortion or strain will be implemented. Feasible and reasonable measures will be investigated and implemented to ensure where possible that the predicted settlement is within the criteria. Measures that will be considered may include (but are not limited to):</p> <ul data-bbox="394 1155 1048 1374" style="list-style-type: none"> <li>• Review of the proposed tunnel design including: <ul style="list-style-type: none"> <li>○ the depth and alignment of tunnels</li> <li>○ the proximity of multiple tunnels to each other</li> <li>○ the proposed tunnel support system</li> <li>○ the tunnel lining to manage groundwater inflows</li> </ul> </li> </ul> | Not applicable   | Not applicable                         |                            |                                     |   |       |          |     |   |       |          |     |                         |       |          |     |       |       |          |     |  |  |



| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|--|--|--|
|      | <ul style="list-style-type: none"> <li>• Rationalising the layout of the proposed ventilation tunnels including the number, location and length of tunnels</li> <li>• Review of the proposed construction methodology</li> <li>• Consideration of ground improvement options.</li> </ul>   |  |  |
| PL8  | <p>A Settlement Monitoring Plan Program will be prepared that will provide details on:</p> <ul style="list-style-type: none"> <li>• Settlement criteria and predictions</li> <li>• Location of monitoring points</li> <li>• Duration of monitoring</li> <li>• Data collection and review (type and method)</li> <li>• Comparison of actual settlement with predictions</li> <li>• Triggers and corrective actions that will be implemented if, based on monitoring results, actual settlement is likely to exceed predictions or the relevant criteria, with the aim of complying with the criteria.</li> </ul> <p>The Settlement Monitoring Program will be endorsed the Independent Property Impact Assessment Panel (see PL11) prior to the commencement of any construction activities with the potential to result in settlement, as determined by the panel, unless otherwise agreed to by the Secretary</p> | Not applicable   | Not applicable                         |
| PL9  | Settlement monitoring will be carried out for the period in accordance with the program starting prior to commencement of tunnel construction through to until all settlement has stabilised following completion of tunnel construction. The results of settlement monitoring will be compared to predicted settlement. The implementation and adequacy of the Settlement Monitoring Program will be monitored by the Independent Property Impact Assessment Panel  | Not applicable   | Not applicable                         |
| PL10 | Building condition surveys will be offered to property owners within the zone of influence of tunnel settlement (50 metres from the outer edge of the tunnels and within 50 metres of surface works) or as otherwise directed by the   | Not applicable   | Not applicable                         |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br><br>(Stage 3)* | Rozelle Parkland Enhancement<br><br>(Stage 4) |
|------|--|---|---|
|      | Independent Property Impact Assessment Panel (see PL11). Building condition surveys of properties will be carried out prior to the commencement of any project works in the vicinity that have the potential to result in damage to the properties, as identified by the contractor and confirmed by the Independent Property Impact Assessment Panel. Building condition surveys will be carried out by a structural engineer.  |   |   |
| PL11 | <p>An Independent Property Impact Assessment Panel comprising geotechnical and engineering experts, will be established prior to the commencement of works with the potential to result in ground movement and settlement or damage due to vibration. The panel will be responsible for:</p> <ul style="list-style-type: none"> <li>• Independently reviewing the verifying building condition survey reports process and checking that reports are adequate to assist with any property damage disputes</li> <li>• Resolving any property damage disputes</li> <li>• Endorsing the Settlement Management Program and monitoring its implementation and ongoing adequacy.</li> </ul> <p>The panel will include at least one specialist with experience with ground movement and settlement due to excavations.</p> | Applicable  | Not applicable                                |
| PL12 | <p>Interface agreements will be entered into with the owners of infrastructure and utility services likely to be impacted by construction of the project. The agreements will likely identify:</p> <ul style="list-style-type: none"> <li>• Minimum separation distances and appropriate settlement criteria for utility infrastructure</li> <li>• Settlement monitoring requirements during construction</li> <li>• Contingency actions in the event that settlement limits are exceeded.</li> </ul>  | Not applicable  | Not applicable                                |
| PL13 | <p>In the event that damage occurs to a property as a result of the construction of the project, the damage will be appropriately rectified. Any disputes between a property or infrastructure owners regarding damage and rectification will be referred to the Independent Property Impact Assessment Panel (see PL11) for resolution.</p>   | Applicable  | Applicable                                    |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br><br>(Stage 3)* | Rozelle Parkland Enhancement<br><br>(Stage 4)                 |
|------|---|---|---|
| PL14 | The Utilities Management Strategy (Appendix F of the EIS) will be implemented.  | Not Applicable, See Appendix D  | Not applicable  |
| UD1  | Prepare an Urban Design and Landscape Plans Plan (UDLPs) for permanent built works and landscaping in consultation with relevant councils, stakeholders and the community. The construction of permanent built works will not commence until the element is included in a suitably prepared and approved UDLP, unless otherwise agreed to by the Secretary. | Not applicable due to small scale nature of works                                       | Partially Applicable, UDLP will be updated to reflect Stage 4 |
| UD2  | Specific design measures at construction ancillary facilities to prevent crime, based on principles of Crime Prevention Through Environmental Design (CPTED), will be identified and implemented at each facility prior to the commencement of facility operation.  | Not applicable due to small scale nature of works                                       | Applicable  |
| UD3  | Specific design measures at surface operational infrastructure to prevent crime, based on principles of CPTED, will be identified and implemented at each facility prior to the commencement of facility operation.   | Not applicable  | Not applicable  |
| UD4  | Wayfinding signage for the road infrastructure will be developed to the satisfaction of Roads and Maritime. Consultation will occur with the relevant local council regarding road signs for council roads. Signage for road infrastructure will be installed prior to the commencement of operation.   | Applicable  | Not applicable  |
| UD5  | Establish an Urban Design Review Panel to provide advice and input into the development of the UDLP and associated sub-plans. Where an UDLP is required to address heritage matters, the panel will include an independent heritage architect.  | Not applicable due to small scale nature of works                                       | Not applicable  |
| LV1  | Ancillary facilities, including the locations of visible structures and plant and perimeter fencing and treatments, will be developed to minimise visual impacts for adjacent receivers where feasible and reasonable. Measures to minimise visual impacts for adjacent receivers will be implemented progressively during the site establishment phase.    | Not Applicable. Ancillary facilities not proposed for Stage 3.                          | Applicable  |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|--|--|--|
| LV2  | Site lighting will be designed to minimise glare issues and light spillage in adjoining properties and will be generally consistent with the requirements of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting.             | Applicable   | Applicable                             |
| LV3  | Regular maintenance of site hoarding and perimeter site areas should be undertaken, including the prompt removal of graffiti and litter.   | Applicable   | Applicable                             |
| LV4  | Construction worksites and construction ancillary facilities will be established in such a manner as to minimise the need to remove screening vegetation wherever practicable.   | Applicable   | Applicable                             |
| LV5  | Hoardings and temporary noise walls will be erected as early as possible within the site establishment phase to provide visual screening.  | Not applicable   | Not applicable                         |
| LV6  | Acoustic sheds will be designed to be visually recessive and minimise potential overshadowing impacts where possible.  | Not applicable   | Not applicable                         |
| LV7  | Where necessary, construction lighting will comply with the requirements of the Civil Aviation Safety Authority (CASA) and Sydney Airport at all times.  | Not applicable   | Not applicable                         |
| LV8  | Visible elements of operational facilities will be designed to satisfy functional requirements and adopt the design principles detailed in the M4-M5 Link Urban Design Report. The proposed designs will be documented in the relevant UDLP for the project. | Not applicable   | Not applicable                         |
| LV9  | The slopes of vegetated batters that form part of the final urban design and landscaping solution will be limited to no more than 1:4 where possible in order to maximise the impact of vegetation on these batters and minimise maintenance.                | Not applicable   | Not applicable                         |
| LV10 | Where construction ancillary facilities are located in close proximity to sensitive residential receivers such as residents and users of recreational space, high quality fencing suitable for parks and public spaces should be considered.                 | Not Applicable. Ancillary facilities not proposed for Stage 3.                   | Applicable                             |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|--|--|--|
| LV11 | Investigate options for planting of vegetation to screen residents on the southern side of Darley Road from the Darley Road motorway operations complex. Include feasible and reasonable measures in the relevant UDLP.  | Not applicable   | Not applicable                         |
| LV12 | Architectural design and detailing of the water treatment facility, substation and front fencing should achieve articulation, visual interest, and integrate with the streetscape.   | Not applicable   | Not applicable                         |
| LV13 | Integrate the new open space at Rozelle with the Lilyfield Road streetscape through considered street tree planting and associated landscape works in accordance with Austroads guidelines.  | Not applicable   | Not applicable                         |
| LV14 | Implement urban design and landscape measures that allow permeable views between the City West Link carriageway and the new open space to provide a sense of openness and connection with the open space for motorists and the community.  | Not applicable   | Not applicable                         |
| LV15 | Investigate measures to minimise view impacts of the project to sensitive residential receptors in the vicinity of the Rozelle Rail Yards as described in this assessment and include in the relevant UDLP where reasonable and feasible.  | Not applicable   | Not applicable                         |
| LV16 | Develop a design that aims to incorporate the ventilation outlets at the Rozelle Rail Yards as an integral component of the larger open space composition, with reference and consideration to the Ventilation Facility Design Review (Annexure 2 of Appendix L (Technical working paper: Urban design)).  | Not applicable   | Not applicable                         |
| LV17 | Consult with UrbanGrowth NSW regarding the interface between the project footprint and the White Bay Power Station precinct. Design the interface to ensure optimise compatibility between the two areas from a landscaping, visual, heritage and active transport connectivity perspective.   | Not applicable   | Not applicable                         |
| LV18 | Investigate options to retain the mature trees of high retention value adjacent to the light rail corridor at the corner of The Crescent and City West Link and to, or provide screen planting alongside the retaining wall edge of the light rail corridor, to minimise landscape and visual impacts. Implement options where feasible and reasonable with consideration of site constraints. | Not applicable   | Not applicable                         |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|--|--|--|
| LV19 | Investigate vegetative and other screening measures along Victoria Road to improve the visual amenity of the streetscape and reduce impacts associated with the ventilation outlet and increased glare from the portals to residential dwellings to the north of Victoria Road. Reasonable and feasible landscaping measures will be included in the relevant UDLP.  | Not applicable   | Not applicable                         |
| LV21 | The UDLP sub-plan for the area adjoining Campbell Road motorway operations complex is to be consistent with the New M5 St Peters Interchange Recreational Area Sub-plan at St Peters.  | Not applicable   | Not applicable                         |
| LV22 | Investigate measures during detailed design to reduce the height, bulk, scale and enhance the landscape setting of the ventilation outlets, subject to achieving desired ventilation outcomes, and in accordance with the design principles detailed in the M4-M5 Link Urban Design Report.  | Not applicable   | Not applicable                         |
| SE1  | <p>A Business Management Plan will be prepared and will include:</p> <ul style="list-style-type: none"> <li>• Identification of businesses that have the potential to be adversely affected by construction activities that will occur as part of the project</li> <li>• Management measures that will be implemented to maintain appropriate vehicular and pedestrian access to businesses and business clusters during business hours and to maintain visibility of the businesses and communicate access arrangements to potential customers during construction, including alternative arrangements for times when access and visibility cannot be maintained. These will be determined in consultation with the owners of the identified businesses.</li> </ul> | Not applicable   | Not applicable                         |
| SE2  | <p>A Community Communication Strategy will be prepared that details:</p> <ul style="list-style-type: none"> <li>• Procedures and mechanisms that will be implemented in response to the key social impacts identified for the project</li> <li>• Property acquisition support services that will be provided</li> </ul>  | Applicable   | Applicable                             |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br>(Stage 3)* | Rozelle Parkland Enhancement<br>(Stage 4)                      |
|------|--|---|--|
|      | <ul style="list-style-type: none"> <li>Procedures and mechanisms to communicate to project stakeholders (including affected communities), the access and connectivity enhancements and new community and social facilities that will be delivered as part of the project through the Social Infrastructure Plan and to update stakeholders on delivery progress</li> <li>Procedures and mechanisms that will be used to engage with affected business owners to identify potential access, parking, business visibility and other impacts to develop measures to address potential impacts on a case by case basis.</li> </ul> |   |  |
| SE3  | Property acquisition will continue to be undertaken in accordance with the Roads and Maritime Services Land Acquisition Information Guide (Roads and Maritime 2014), the Land Acquisition (Just Terms Compensation) Act 1991 (NSW) and the land acquisition reforms announced by the NSW Government in 2016 (NSW Government 2016). A property acquisition factsheet that outlines the process and provides further information for concerned residents will continue to be made available online and in hard copy at project information centres.  | Not applicable. Property acquisition not proposed for Stage 3.                      | Not applicable. Property acquisition not proposed for Stage 4. |
| SE4  | Affected households will continue to have access to a counselling service that assists people through the property acquisition process.  | Not applicable. Property acquisition not proposed for Stage 3.                      | Not applicable. Property acquisition not proposed for Stage 4. |
| SE5  | An independent service will continue to be provided to vulnerable households (eg elderly, those suffering an illness) to assist with relocation. Assistance could include finding a suitable house for relocation, arranging removalists, disconnecting services and attending appointments with solicitors or other representatives.  | Not applicable. Property acquisition not proposed for Stage 3.                      | Not applicable. Property acquisition not proposed for Stage 4. |
| SE6  | A community relations support toll-free telephone line will be operated to respond to any community concerns or requests for translation services.   | Applicable  | Applicable   |
| OSE8 | A Social Infrastructure Plan will be prepared that details:  | Not applicable  | Not applicable   |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br><br>(Stage 3)* | Rozelle Parkland Enhancement<br><br>(Stage 4)     |
|------|--|---|---|
|      | <ul style="list-style-type: none"> <li>• Measures that will be delivered as part of the project to improve community connectivity in areas affected by the project, including pedestrian and cyclist access</li> <li>• Community and social facilities, for example open space, that will be delivered or enhanced as part of the project</li> <li>• Community initiatives and programs that will receive support as part of the project, including the manner in which support will be provided.</li> </ul> <p>The Social Infrastructure Plan will be prepared by a suitably qualified and experienced person in consultation with the community and relevant councils and implemented as part of the project.</p>  |   |   |
| SW01 | A Construction Soil and Water Management Plan (CSWMP) will be prepared for the project. The plan will include the measures that will be implemented to manage and monitor potential surface water quality impacts during construction. The CSWMP will be developed 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 and Water 2008), commonly referred to as the 'Blue Book'.  | Partially Applicable, Refer Appendix D  | Partially Applicable, Refer Appendix E            |
| SW02 | A program to monitor potential surface water quality impacts due to the project will be developed and included in the CSWMP. The program will include the water quality monitoring parameters and the monitoring locations identified in Annexure E of Appendix Q (Technical working paper: Surface water and flooding) to the EIS where appropriate. The monitoring program will commence prior to any ground disturbance to establish appropriate baseline conditions and continue for the duration of construction and until the affected waterways are rehabilitated to an acceptable condition as certified by a suitably qualified and experienced independent expert (or as otherwise required by any project conditions of approval). Further details to be included in the program are outlined in Appendix Q (Technical working paper: Surface water and flooding) of the EIS. | Not applicable due to small scale nature of works                                       | Not applicable due to small scale nature of works |
| SW03 | Erosion and Sediment Control Plans (ESCPs) will be prepared for all work sites in accordance with the Blue Book. ESCPs will be implemented in advance of site disturbance and will be updated as required as the work progresses and the sites change.   | Applicable, Refer Appendix D  | Applicable, Refer Appendix E                      |



| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)            |
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| SW04 | A soil conservation specialist will be engaged for the duration of construction to provide advice regarding erosion and sediment control.  | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |
| SW05 | The extent of ground disturbance and exposed soil will be minimised to the greatest extent practicable to minimise the potential for erosion.  | Applicable   | Applicable  |
| SW06 | Disturbed ground and exposed soils will be temporarily stabilised prior to extended periods of site inactivity to minimise the potential for erosion.  | Applicable   | Applicable  |
| SW07 | Disturbed ground and exposed soils will be permanently stabilised and proposed landscaped areas will be suitably profiled and vegetated as soon as possible following disturbance to minimise the potential erosion.   | Applicable   | Applicable  |
| SW08 | <p>The proposed bridge crossing over and widening of Whites Creek, including all associated temporary and permanent infrastructure, will be designed and constructed in a manner consistent with:</p> <ul style="list-style-type: none"> <li>• Controlled Activities on Waterfront Land, Guidelines for watercourse crossings on waterfront land (NSW Department of Primary Industries (DPI) 2012)</li> <li>• Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (Fairfull and Witheridge 2003)</li> <li>• Policy and Guidelines for Fish Friendly Waterway Crossings (NSW Fisheries February 2004)</li> <li>• Policy and Guidelines for Fish Habitat Conservation and Management Update 2013 (DPI-Fisheries 2013).</li> </ul> <p>Appropriate fish passage will be provided for crossings of fish habitat streams.</p> | Not applicable   | Not applicable                                    |
| SW09 | Consultation will be undertaken with Sydney Water regarding the timing of the works at Whites Creek and compatibility of the proposed design and Sydney Water's naturalisation works.  | Not applicable   | Not Applicable                                    |

| REMM  | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|-------|---|--|--|
| SW10  | <p>Temporary construction water treatment plants will be designed and managed so that treated water will be of suitable quality for discharge to the receiving environment.</p> <p>An ANZECC (2000) species protection level of 90 per cent is considered appropriate for adoption as discharge criteria for toxicants where practical and feasible. The discharge criteria for the treatment facilities will be included in the CSWMP.</p> | Not applicable   | Not applicable                         |
| SW11  | <p>Procedures, prepared in accordance with the requirements of the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee 1998), will be included in the CSWMP and implemented in the event that acid sulfate soils, rocks or monosulfidic black oozes are encountered during construction of the project.</p>   | Partially Applicable, See Appendix D   | Not applicable                         |
| OSW12 | <p>Stormwater from the project during operation will be treated prior to discharge. Where space is available, bioretention systems or constructed wetlands will be installed. Where space is not available, other smaller devices, such as proprietary stormwater treatment devices, will be installed. The final design of treatments will be supported by MUSIC modelling and water sensitive urban design principles.</p>                | Not applicable due to small scale nature of works                                | Not Applicable                         |
| OSW13 | <p>Maintenance requirements for all stormwater treatment systems and devices installed as part of the project will be identified and included in relevant operational maintenance schedules/systems.</p>  | Not Applicable   | Not Applicable                         |
| OSW14 | <p>Spill containment will be provided on the motorway. Spill management and emergency response procedures will be documented in the Operation Environmental Management Plan (OEMP) and/or Emergency Response Plan.</p>  | Not applicable   | Not Applicable                         |
| OSW15 | <p>The constructed wetland at the Rozelle interchange will be appropriately designed considering Water Sensitive Urban Design Principles to cater for the continuous release of treated groundwater from the water treatment plant and onsite stormwater flows and lined to prevent potential interaction with groundwater.</p>   | Not applicable   | Not Applicable                         |
| OSW16 | <p>The operational water treatment facilities will be designed and managed such that effluent will be of suitable quality for discharge to the receiving environment. Opportunities to incorporate nutrient treatment within the plant at Darley Road will be investigated during detailed design.</p>  | Not applicable   | Not Applicable                         |

| REMM  | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br>(Stage 3)* | Rozelle Parkland Enhancement<br>(Stage 4) |
|-------|--|---|---|
|       | <p>Discharge criteria will be developed in accordance with the ANZECC (2000) and relevant NSW WQOs, including the following discharge criteria:</p> <ul style="list-style-type: none"> <li>• 0.3 milligrams per litre for iron</li> <li>• 1.9 milligrams per litre for manganese.</li> </ul> <p>The discharge criteria for the treatment facilities will be nominated during detailed design in consultation with relevant stakeholders and included in the OEMP.</p>                            |   |   |
| OSW17 | New discharge outlets will be designed with appropriate energy dissipation and scour protection measures as required to minimise the potential for sediment disturbance and resuspension in the receiving waters. Outlet design and energy dissipation/scour protection measures will be informed by drainage modelling.   | Not applicable due to small scale nature of works                                   | Not Applicable                            |
| OSW18 | Existing drainage outlets that will be subject to increased inflow from the project will be assessed. If necessary, energy dissipation or scour protection will be added to prevent sediment disturbance and resuspension in receiving waters.   | Not applicable due to small scale nature of works                                   | Not Applicable                            |
| CM01  | <p>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 1997 (NSW) (CLM Act).</p> <p>This includes further investigations in areas of potential contamination identified in the project footprint. If contamination posing a risk to human or ecological receptors is identified, a Remediation Action Plan will be prepared.</p> | Not Applicable  | Applicable                                |
| CM02  | Asbestos handling and management will be undertaken in accordance with an Asbestos Management Plan (or similar) prepared in accordance with relevant legislation, regulations and codes of practice) as described in Chapter 23 (Resource use and waste minimisation) of the EIS.  | Applicable, Refer Appendix D.   | Applicable.                               |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br><br>(Stage 3)* | Rozelle Parkland Enhancement<br><br>(Stage 4)                        |
|------|---|---|--|
| CM03 | A hazardous materials assessment will be carried out prior to and during the demolition of buildings. Demolition works will be undertaken in accordance with the relevant Australian Standards and relevant NSW WorkCover Codes of Practice, including the Work Health and Safety Regulation 2011 (NSW).  | Not applicable. Building demolition not proposed as part of Stage 3.                    | Not applicable. Building demolition not proposed as part of Stage 4. |
| CM04 | The Construction Waste Management Plan for the project, prepared as described in Chapter 23 (Resource use and waste minimisation) of the EIS, will include procedures for handling and storing potentially contaminated substances.   | Partially Applicable, refer Appendix D.   | Partially Applicable, refer Appendix E.                              |
| CM05 | Stockpile management procedures will be implemented to control dust, odour and cross contamination.   | Not Applicable. No stockpiling  | Applicable   |
| CM06 | <p>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) and detailed in the CEMP. The procedure will include:</p> <ul style="list-style-type: none"> <li>• Cease work in the vicinity</li> <li>• Initial assessment by an appropriately qualified environmental consultant</li> <li>• Further assessment and management of contamination, if confirmed, in accordance with section 105 of the CLM Act.</li> </ul> | Applicable, refer Appendix D.   | Applicable, refer Appendix E.  |
| CM07 | A Construction Soil and Water Management Plan will be prepared for the project including procedures to minimise the interaction of stormwater with contaminated land, including acid sulfate soils, and manage potentially contaminated stormwater runoff, as described in Chapter 15 (Soil and water quality) of the EIS.  | Partially Applicable, refer Appendix D  | Partially Applicable, refer Appendix E                               |
| CM08 | Measures identified in Chapter 25 (Hazard and risk) of the EIS will be implemented to appropriately store contaminated materials and materials with the potential to cause contamination dangerous goods and reduce the potential for environmental contamination due to spills and leaks.  | Partially Applicable, refer Appendix D.   | Partially Applicable, refer Appendix E                               |

| REMM   | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)            |
|--------|--|--|---|
| OpCM01 | Procedures to address spills, leaks and tunnel washing will be developed as part of an OEMP and implemented during operation of the project.   | Not Applicable   | Not Applicable                                    |
| FD01   | <p>A Flood Mitigation Strategy (FMS) will be prepared by a suitably qualified and experienced person in consultation with directly affected landowners, DPI-Water, NSW Office of Environment and Heritage (OEH), State Emergency Services (SES), Sydney Water and the relevant local councils. It will include but not be limited to:</p> <ul style="list-style-type: none"> <li>• Identification of flood risks to the project and adjoining areas, including consideration of local drainage catchment assessments and climate change implications on rainfall, drainage and tidal characteristics</li> <li>• Identification of design and mitigation measures to protect proposed operations and not worsen existing flooding characteristics during construction and operation, including soil erosion and scouring</li> <li>• Identification of drainage system upgrades</li> <li>• The 100 year annual recurrence interval (ARI) flood level will be adopted in the assessment of measures which are required to mitigate flood risk to the project, as well as any adverse impacts on surrounding property</li> <li>• Changes in flood behaviour under probable maximum flood (PMF) conditions will also be assessed in order to identify impacts on critical infrastructure and significant changes in flood hazards as a result of the project</li> <li>• Consideration of limiting flooding characteristics to the following levels: <ul style="list-style-type: none"> <li>○ A maximum increase in inundation time of one hour in a 100 year ARI rainfall event</li> <li>○ No inundation of floor levels which are currently not inundated in a 100 year ARI rainfall event</li> <li>○ A maximum increase of 10 mm in inundation at properties where floor levels are currently exceeded in a 100 year ARI rainfall event</li> <li>○ A maximum increase of 50 mm in inundation at properties where floor levels will not be exceeded in a 100 year ARI rainfall event</li> <li>○ Or else provide alternative flood mitigation solutions consistent with the intent of these limits</li> </ul> </li> </ul> | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |

| REMM | Description   | Rozelle Interchange<br>Pedestrian and<br>Cyclist<br>Improvement<br>Strategy (E58)<br><br>(Stage 3)* | Rozelle<br>Parkland<br>Enhancement<br><br>(Stage 4) |
|------|---|---|---|
|      | <ul style="list-style-type: none"> <li>o Consideration of the EIS documents.</li> </ul>   |   |   |
| FD02 | <p>Hydrologic and hydraulic assessments will be carried out for all temporary project components (including ancillary facilities) and permanent design features that have the potential to affect flood levels in the vicinity of the project.</p> <p>The results of the assessment will inform the preparation of the Flood Mitigation Strategy (FD01) as well as the design development of temporary and permanent works.</p>   | Not applicable due to small scale nature of works   | Not applicable due to small scale nature of works   |
| FD03 | <p>Measures developed to manage potential flood impacts, as identified in the Flood Mitigation Strategy, will be incorporated into the design of temporary and permanent project components and construction and operational management systems as relevant.</p>  | Not applicable due to small scale nature of works   | Not applicable due to small scale nature of works   |
| FD04 | <p>All entries (portals) into the tunnels will be designed so that they are located above the peak level of the PMF or the 100 year ARI design flood plus 0.50 metres, whichever is greater. The same hydrological standard will be applied to tunnel ancillary facilities such as tunnel ventilation and emergency response facilities, electrical substations and water treatment plants. where the ingress of floodwaters will also have the potential to flood the tunnels.</p> | Not applicable  | Not applicable                                      |
| FD05 | <p>Bridge crossings over existing waterways and proposed drainage channels will be designed for the underside of bridge structure to be above the peak 100 year ARI design flood level.</p>   | Not applicable  | Not applicable                                      |
| FD06 | <p>The need to maintain flood conveyance will be factored into construction planning associated with the new bridge structure over Whites Creek.</p>  | Not applicable  | Not applicable                                      |
| FD07 | <p>Parts of the site that will be adversely affected by floodwaters, such as tunnel dive shafts, portals and cut and cover sections, will be protected from floodwater ingress during construction. The flood level adopted for design of temporary protection will be informed by consideration of both mainstream and local overland flows, the potential risk to the environment, safety and the potential disruption and damage to project works.</p>                           | Not applicable  | Not applicable                                      |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br>(Stage 3)* | Rozelle Parkland Enhancement<br>(Stage 4)        |
|------|---|---|--|
| FD08 | The Pyrmont Bridge Road tunnel site (C9) will be designed with consideration of and to appropriately manage the existing surface water flow path on Bignell Road Lane.  | Not applicable  | Not applicable                                   |
| FD09 | The permanent surface water conveyance solution within the Rozelle Rail Yards will be implemented as soon as possible.  | Not applicable  | Not applicable<br>(completed as part of Stage 2) |
| FD10 | Flood contingency measures will be prepared and implemented where construction ancillary facilities and vulnerable temporary facilities (including fuel storages, water treatment plants and substations) are located in the 20 year ARI design flood extent.   | Not applicable due to small scale nature of works                                   | Not Applicable                                   |
| FD11 | <p>Further hydrological and hydraulic modelling based on the detailed design will be undertaken to determine the ability of the receiving drainage systems to effectively convey drainage discharges from the project once operational. The modelling must be undertaken in consultation with the relevant council(s). It will include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• Confirming the location, size and capacity of all receiving drainage systems affected by the operation of the project</li> <li>• Assessing the potential impacts of drainage discharges from the project drainage systems on the receiving drainage systems</li> <li>• Identifying all feasible and reasonable mitigation measures to be implemented where drainage from the project is predicted to adversely impact on the receiving drainage systems.</li> </ul> | Not applicable due to small scale nature of works                                   | Not Applicable                                   |
| FD12 | Where drainage systems are to be upgraded or replaced during the project, existing systems will be left in place and remain operational during the process wherever possible.   | Applicable  | Applicable                                       |
| FD13 | Runoff generated from project construction and operational facilities and discharges from water treatment facilities will be managed to mitigate risk of overloading the receiving drainage system.   | Not Applicable. Such facilities not relevant to Stage 3.                            | Applicable                                       |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)            |
|------|---|--|---|
| FD14 | Entry points to the stormwater used by or immediately downgradient from the project sites will be inspected regularly for blockages and cleaned as required to maintain performance.  | Applicable   | Applicable  |
| FD15 | Hydrological and hydraulic assessments of the permanent design will consider the climate change related flood risk to the project and flood impacts from the project, and will confirm requirements for any management measures. The assessment will be undertaken in accordance with the Practical Considerations of Climate Change – Floodplain Risk Management Guideline (DECC 2007).  | Not applicable due to small scale nature of works                                | Not Applicable                                    |
| FD16 | Where peak levels in the 100 year ARI design flood are predicted to increase at any residential, commercial and/or industrial buildings due to construction or operation of the project, a floor level survey will be carried out. If the survey indicates flood impacts in excess of the limits set in FD01, further refinements will be made to the temporary or permanent designs as required to minimise impacts.   | Not applicable due to small scale nature of works                                | Not Applicable                                    |
| FD17 | <p>A Flood Review Report will be prepared after the first defined flood event affecting the project works for any of the following flood magnitudes – the five year ARI event, 20 year ARI event and 100 year ARI event - to assess the actual flood impact against those predicted in the design reports or as otherwise altered by the FMS. The Flood Review Report(s) must be prepared by an appropriately qualified person(s) and include:</p> <ul style="list-style-type: none"> <li>• Identification of the properties and infrastructure affected by flooding during the reportable event</li> <li>• A comparison of the actual extent, level, velocity and duration of the flooding event against the impacts predicted in the design reports or as otherwise altered by the FMS</li> <li>• Where the actual extent and level of flooding exceeds the predicted level with the consequent effect of adversely impacting of property(ies), structures and infrastructure, identification of the measures to be implemented to reduce future impacts of flooding related to the M4-M5 Link project including the timing and responsibilities for implementation.</li> </ul> <p>Flood mitigation measures will be developed in consultation with the affected property, structure and/or infrastructure owners, OEH and the relevant council(s).</p> | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |



| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br><br>(Stage 3)* | Rozelle Parkland Enhancement<br><br>(Stage 4) |
|------|---|---|---|
| B1   | <p>A Construction Flora and Fauna Management Plan (CFFMP) will be developed and implemented during construction. The CFFMP will include the following:</p> <ul style="list-style-type: none"> <li>• Identification of guidelines relevant to construction, the matters they apply to and what is required to ensure compliance</li> <li>• Pre-disturbance inspection requirements to identify features of biodiversity conservation significance and select appropriate management measures and environmental controls</li> <li>• Management measures and environmental controls to be implemented before and during construction including: <ul style="list-style-type: none"> <li>○ An unexpected threatened species finds procedure</li> <li>○ Section 3.3.2 Standard precautions and mitigation measures of the Policy and Guidelines for Fish Habitat Conservation and Management Update 2013 (DPI-Fisheries 2013)</li> <li>○ Tree assessment and management protocols consistent with AS 4970-2009 Protection of trees on development sites</li> <li>○ Weed management protocols.</li> </ul> </li> </ul> <p>The plan will include management measures outlined in Appendix S (Technical paper: Biodiversity) and from any additional assessments carried out during detailed design and project delivery as relevant.</p> | Partially Applicable, refer Appendix D  | Partially Applicable, refer Appendix E        |
| B2   | <p>Prior to the commencement of any works associated with the modification of the Victoria Road bridge, an inspection will be carried out by a suitably qualified and experienced ecologist to confirm the presence of roosting microbats. If roosting microbats are identified, measures to manage potential impacts will be developed in consultation with an appropriate microbat expert and included in the CFFMP prior to the commencement of any work with the potential to disturb the roosting locations (as confirmed by the microbat expert).</p>   | Not applicable  | Not applicable                                |
| B3   | <p>The proposed road bridge at Whites Creek will be designed with consideration of Policy and Guidelines for Fish Habitat Conservation Update 2013 (DPI-Fisheries 2013) and Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW-Fisheries 2003).</p>  | Not applicable  | Not applicable                                |

| REMM | Description  | Rozelle Interchange<br>Pedestrian and<br>Cyclist<br>Improvement<br>Strategy (E58)<br><br>(Stage 3)* | Rozelle<br>Parkland<br>Enhancement<br><br>(Stage 4) |
|------|--|---|---|
| B4   | <p>Site-specific Erosion and Sediment Control Plans (ESCPs) will be prepared for each work location associated with or in the vicinity of waterways and culverts that will be modified as part of the project.</p> <p>The ESCPs will contain measures to stabilise all surfaces disturbed as a result of the project as soon as possible following the disturbance to prevent erosion and to minimise sedimentation in adjacent aquatic environments</p>   | Applicable  | Applicable  |
| B5   | <p>The CFFMP will include measures to manage potential impacts on trees. Measures will include:</p> <ul style="list-style-type: none"> <li>• The establishment of tree protection zones</li> <li>• Ground protection measures for trees to be retained.</li> </ul>   | Applicable, refer Appendix D  | Partially applicable, Refer Appendix E              |
| B6   | <p>As many trees as possible will be retained during construction. In the event that tree removal cannot be avoided, a tree replacement strategy will be prepared. Replacement trees will be included in the relevant UDLP. Opportunities for the provision of replacement trees outside the project boundary will be investigated in consultation with local councils.</p>  | Applicable  | Applicable  |
| B7   | <p>The CFFMP will include tree management protocols and provision for the development of tree management plans (in accordance with the requirements of AS 4970-2009) where required for specific trees. Protection of trees on development sites will be carried out in consultation with an arborist with a minimum Australian Qualifications Framework (AQF) Level 5 qualification in arboriculture for each tree proposed for retention where works associated with the project have the potential to impact on the tree root zone.</p> | Partially Applicable, refer Appendix D  | Partially Applicable, refer Appendix E              |
| B8   | <p>Tree removal, pruning and maintenance work will be carried out by an arborist with a minimum AQF Level 3 qualification in accordance with AS 4373-2007 Pruning of Amenity Trees and the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998) and advice provided by an arborist with a minimum AQF Level 5 qualification in arboriculture (or equivalent).</p>   | Applicable  | Applicable  |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)                      |
|------|---|--|---|
| OB9  | <p>The UDLP will be prepared and implemented to include compensatory planting for trees removed by the project. The plan will include:</p> <ul style="list-style-type: none"> <li>• A tree replacement strategy</li> <li>• Species recommendations for the landscape design to consider, including foraging trees for the Grey-headed Flying-fox</li> <li>• Relevant project specific rehabilitation and revegetation measures associated with the M4 East and New M5 projects, where there is an overlap in use of project footprint.</li> </ul> | Not applicable due to small scale nature of works                                | Partially Applicable, UDLP to be updated to reflect Stage 4 |
| OB10 | <p>Consultation will be undertaken with Sydney Water regarding integration of naturalisation works at Whites Creek, including re-establishment of vegetation where possible following construction activities. Vegetation re-establishment will be undertaken in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and Management Biodiversity on RTA Projects (NSW Roads and Traffic Authority 2011).</p>  | Not applicable   | Not applicable  |
| GW1  | <p>Groundwater inflows within the tunnels will be minimised by designing the final tunnel alignment to minimise intersections with known palaeochannels and alluvium present in the project footprint.</p>  | Not applicable   | Not applicable  |
| GW2  | <p>Appropriate waterproofing measures will be identified and included in the detailed design to permanently, where reasonable and feasible, reduce the inflow into the tunnels to below one litre per second per kilometre for any kilometre length of the tunnel.</p>  | Not applicable   | Not applicable  |
| GW3  | <p>Appropriate measures will be investigated and implemented at dive structures and shafts and for cut- and-cover sections of the tunnel to minimise groundwater inflow.</p>  | Not applicable   | Not applicable  |
| GW4  | <p>Further assessment of the risk posed by the presence of sulfate reducing bacteria and groundwater aggressivity will be undertaken prior to construction. A corrosion assessment will be undertaken by the construction contractor to assess the impact on building materials that may be used in the tunnel infrastructure such as concrete, steel,</p>  | Not applicable   | Not applicable  |

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|------|---|---|---|
|      | aluminium, stainless steel, galvanised steel and polyester resin anchors. The outcomes of the corrosion assessment will be considered when selecting building materials likely to encounter groundwater.  |   |   |
| GW5  | In accordance with the Aquifer Interference Policy (DPI-Water 2012), measures will be taken to 'make good' the impact on an impacted water supply bore by restoring the water supply to pre-development levels. The measures taken will be dependent upon the location of the impacted bore but could include, for example, deepening the bore, providing a new bore or providing an alternative water supply.  | Not applicable  | Not applicable                                      |
| GW6  | Potential impacts associated with subsurface components of the project intercepting and altering groundwater flows and levels will be considered during detailed design. Measures to reduce potential impacts will be identified and included in the detailed construction methodology and the detailed design as relevant.   | Not applicable  | Not applicable                                      |
| GW7  | A detailed groundwater model will be developed by the construction contractor during detailed design. The model will be used to predict groundwater inflow rates and volumes within the tunnels and groundwater levels (including drawdown) in adjacent areas during construction and operation of the project.   | Not applicable  | Not applicable                                      |
| GW8  | Groundwater inflow within and groundwater levels in the vicinity of the tunnels will be monitored during construction and compared to model predictions and groundwater performance criteria applied to the project. The groundwater model will be updated based on the results of the monitoring as required and proposed management measures to minimise potential groundwater impacts adjusted accordingly to ensure that groundwater inflow performance criteria are met. | Not applicable  | Not applicable                                      |
| GW9  | Further investigations will be carried out to identify areas where groundwater inflows to the tunnels are likely to be elevated, to guide the development of the detailed design and construction methodology. The investigations will be carried out prior to the commencement of excavations with the potential to result in groundwater inflow at each identified location.  | Not applicable  | Not applicable                                      |
| OGQ9 | A groundwater monitoring program will be prepared and implemented to monitor groundwater inflows in the tunnels and groundwater levels as well as groundwater quality in the three main aquifers and inflows during construction.   | Not applicable  | Not applicable                                      |

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|-------|--|---|---|
|       | <p>The program will identify groundwater monitoring locations, performance criteria in relation to groundwater inflow and levels and potential remedial actions that will be considered to address any non-compliances with performance criteria. As a minimum, the program will include manual groundwater level and quality monitoring monthly and inflow volumes and quality weekly.</p> <p>The monitoring program will be developed in consultation with the NSW EPA, DPI-Fisheries, DPI- Water, City of Sydney Council and Inner West Council.</p>  |   |   |
| OGQ10 | <p>The groundwater monitoring program prepared and implemented during construction will be augmented and continued during the operational phase. Groundwater will be monitored during the operations phase for three years or as otherwise required by the project conditions of approval and will include trigger levels for response or remedial action based on monitoring results and relevant performance criteria.</p> <p>At least three monitoring wells and vibrating wire piezometers (VWPs) should be constructed as close as possible to the tunnel centrelines to allow for the comparison of pore pressures and standing water levels. The wells could be constructed about 5-10 metres above the top of the tunnel crown to allow for groundwater drawdown monitoring in the Hawkesbury Sandstone.</p> <p>The program will include procedures for monitoring and reporting of extracted groundwater volumes to DPI-Water annually for the duration of construction and operation, unless otherwise agreed to or directed by the Secretary. The operational groundwater monitoring program will be developed in consultation with the NSW EPA, DPI-Water and relevant councils and documented in the OEMP or EMS.</p> | Not applicable  | Not applicable                                |
| OGW11 | <p>Where the corrosion assessment that will be carried out prior to construction indicates potential issues, corrosion and other associated impacts of highly aggressive groundwater on the tunnel infrastructure will be monitored during operations. The monitoring program will be documented in the OEMP or EMS. Corroded or otherwise impacted infrastructure will be repaired or replaced as required to maintain operational integrity of the road infrastructure.</p>  | Not applicable  | Not applicable                                |
| OGW12 | <p>In accordance with the NSW Aquifer Interference Policy (DPI-Water 2012), measures will be taken to 'make good' the impact on an impacted water supply bore by restoring the water supply to pre- development levels. The measures</p>   | Not applicable  | Not applicable                                |

| REMM  | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)    |
|-------|--|--|---|
|       | taken will be dependent upon the location of the impacted bore but could include, for example, deepening the bore, providing a new bore or providing an alternative water supply.  |  |   |
| NAH01 | <p>Construction Heritage Management Plan (CHMP) will be prepared and implemented as part of the Construction Environmental Management Plan. The CHMP will include:</p> <ul style="list-style-type: none"> <li>• Measures that will be implemented to manage potential impacts to items of heritage significance</li> <li>• Inclusion of heritage awareness and management training for relevant personnel involved in site works</li> <li>• Details regarding the conservation and curation of any historical artefacts recovered during works.</li> </ul>   | Partially Applicable, refer to Appendix D  | Partially Applicable, refer to Appendix E |
| NAH02 | <p>An Interpretation Strategy will be developed and implemented to identify and interpret the key heritage values and stories of the heritage areas affected by the project and inform the development of the Urban Design and Landscape Plan for the project, in accordance with Interpreting Heritage Places and Items Guideline (NSW Heritage Office 2005). The Interpretation Strategy will:</p> <ul style="list-style-type: none"> <li>• Build on themes, stories and initiatives proposed as part of other stages of WestConnex to ensure a consistent approach to heritage interpretation for the project</li> <li>• Include themes and stories including the Rozelle railways historic functions, trains and trams transport, industrialisation and The Rozelle-Darling Harbour Goods Line</li> <li>• Identify how the rail related infrastructure salvaged from the Rozelle Rail Yards will be reused.</li> </ul> | Not applicable   | Not applicable                            |
| NAH03 | <p>Photographic archival recording will be undertaken of:</p> <ul style="list-style-type: none"> <li>• Infrastructure associated with the White Bay Power Station site that could be affected by the project.</li> <li>• Whites Creek Stormwater Channel (in the area to be impacted)</li> <li>• Stormwater Canal off Lilyfield Road</li> <li>• 'Cadden Le Messurier' at 84 Lilyfield Road</li> </ul>  | Not applicable   | Not applicable                            |

| REMM  | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|-------|--|--|--|
|       | <ul style="list-style-type: none"> <li>• Former Hotel at 78 Lilyfield Road</li> <li>• Victoria Road overbridge</li> <li>• Each house at 260–266 Victoria Road</li> <li>• Each house at 248–250 Victoria Road</li> <li>• Former Bank of NSW (164 Parramatta Road).</li> </ul> <p>It will be undertaken in accordance with the NSW Heritage Office guidelines Photographic Recording of Heritage Items Using Film or Digital Capture (2006).</p> <p>The photographic archival recording will occur prior to any works that have the potential to impact upon the items and the report development process will include the identification of appropriate stakeholders to receive copies of the documentation.</p>  |  |  |
| NAH04 | <p>As part of the CHMP, a Historical Archaeological Research Design (HARD) will be prepared before the start of proposed works within each of the following Historical Archaeological Management Units (HAMUs): HAMU 3, HAMU 6, HAMU 7, HAMU 9, HAMU 10, and HAMU 11. The HARD will be prepared by a qualified archaeologist in consultation with the NSW Heritage Council and will include:</p> <ul style="list-style-type: none"> <li>• Descriptions of clear significance thresholds for possible archaeological items that may be uncovered during works</li> <li>• A methodology and scope for a program of archaeological excavation, investigation, and recording of any historical archaeological remains that will be impacted by the project</li> <li>• Requirement for post-excavation reporting, including artefact analysis and additional historical research, where necessary, and long term management of records</li> <li>• Details of what will happen with any artefacts uncovered and associated reports.</li> </ul> | Not applicable   | Not applicable                         |
| NAH05 | Before excavation of archaeological management sites, a suitably qualified Excavation Director who complies with Criteria for Assessment of Excavation Directors (Heritage Council of NSW 2011) will be engaged to advise on   | Not applicable   | Not applicable                         |

| REMM  | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br>(Stage 3)* | Rozelle Parkland Enhancement<br>(Stage 4) |
|-------|--|---|---|
|       | matters associated with historic archaeology. Where archaeological excavation is required, the Excavation Director will oversee excavation and advise on archaeological matters.   |   |   |
| NAH06 | Potential vibration impacts to features of heritage significance will be managed in accordance with the CNVMP prepared for the project.  | Applicable  | Partially applicable                      |
| NAH07 | Potential heritage impacts due to settlement and ground movement caused by the project will be managed in accordance with the relevant measures identified in the land use and property section of this table and monitored in accordance with the Settlement Monitoring Plan Program.   | Not applicable due to small scale nature of works                                   | Not applicable                            |
| NAH08 | Any items of potential heritage conservation significance or human remains discovered during construction will be managed in accordance with an Unexpected Heritage Finds and Humans Remains Procedure developed for the project in accordance with relevant guidance provided by the Heritage Council of NSW, the NSW Heritage Division of OEH and the Standard Management Procedure regarding notification of relevant agencies and the NSW Police and will be implemented for the duration of construction. | Applicable  | Applicable                                |
| NAH09 | A Heritage Salvage Strategy will be prepared to identify the salvage potential of the fabric and features from heritage items and potential heritage items that will be demolished to facilitate the project. This could include timber joinery, fireplaces, stained glass, stairs, decorative tiles, bricks, steel truss structures, windows etc. The strategy will also identify options and a process for dissemination of salvaged items to owners, community groups and interested parties.               | Not applicable  | Not applicable                            |
| NAH10 | Sandstone kerbing in the vicinity of 32 and 34 Victoria Road, Rozelle that will be removed to facilitate the project will be salvaged and provided to Inner West Council.  | Not applicable  | Not applicable                            |
| NAH11 | The potential for impacts to the railway cutting on the eastern side of Victoria Road, associated with the White Bay Power Station, will be considered during the development of the detailed design for the realigned Victoria Road and associated bridge. The final design will seek to avoid impact to the railway cutting and maintain the visual relationship   | Not applicable  | Not applicable                            |



| REMM  | Description   | Rozelle Interchange<br>Pedestrian and<br>Cyclist<br>Improvement<br>Strategy (E58)<br><br>(Stage 3)* | Rozelle<br>Parkland<br>Enhancement<br><br>(Stage 4) |
|-------|---|---|---|
|       | between the cutting and the White Bay Power Station site. Landscaping sympathetic to the relationship, developed in consultation with a heritage specialist, will be included in the UDLP for the project.  |   |   |
| NAH12 | A condition assessment of the southern penstock (and its associated water channels) will be carried out by a heritage specialist and a structural engineer prior to any works in the vicinity with the potential impact upon the item. If required any conservation works required to limit potential impacts on deteriorated fabric (loose bricks, corroded steel) will be identified and implemented prior to construction.   | Not applicable  | Not applicable                                      |
| NAH13 | The southern penstock and its associated water channels (location and extent unknown) will be protected during works associated with the reconstruction of the Victoria Road bridge.  | Not applicable  | Not applicable                                      |
| NAH14 | The new bridge over the Whites Creek Stormwater Channel must not impact the extant significant heritage fabric of the channel and should be a solely independent structure.   | Not applicable  | Not applicable                                      |
| NAH15 | Landscaping, following the construction of the substation, should consider screening the substation and water treatment plant, from the Leichhardt (Charles Street) Underbridge. The design and location of the landscaping will be informed by a heritage specialist and should seek to create a visual separation between the new structure and the heritage item.  | Not applicable  | Not applicable                                      |
| NAH16 | A condition assessment of the northern penstock will also be carried out by a heritage specialist and a structural engineer prior to any vibratory works in the vicinity that have the potential to impact on the item. The condition assessment will inform additional management measures to protect the northern penstock, if required. Any conservation works required to limit potential impacts on deteriorated fabric (loose bricks, corroded steel) will be identified and implemented prior to commencement of the relevant vibratory works in the vicinity. | Not applicable  | Not applicable                                      |
| AH1   | Any items of potential Aboriginal archaeological or cultural heritage conservation significance or human remains discovered during construction will be managed in accordance with the Unexpected Heritage Finds and Humans Remains Procedure developed for the project.  | Applicable  | Applicable  |

| REMM | Description  | Rozelle Interchange<br>Pedestrian and<br>Cyclist<br>Improvement<br>Strategy (E58)<br><br>(Stage 3)* | Rozelle<br>Parkland<br>Enhancement<br><br>(Stage 4) |
|------|--|---|---|
| AH2  | Subject to gaining access from the relevant landholder, a suitably qualified archaeologist will visit AHIMS site #45-6-2278 prior to the commencement of any vibration intensive construction activities in the vicinity of the site to verify the site to confirm and record its current condition.   | Not applicable  | Not applicable                                      |
| AH3  | If the AHIMS site #45-6-2278 is verified, an assessment will be completed by a suitably qualified and experienced person prior to the commencement of any vibration intensive construction activities in the vicinity. The assessment will consider all vibration intensive activities that will occur in the vicinity, the likely vibration levels and relevant vibration criteria and identify the management measures, including monitoring, that will be implemented to prevent and reduce potential impacts. A final condition assessment will be carried out at the completion of construction detailing recommendations for remediation measures if required. | Not applicable  | Not applicable                                      |
| GHG1 | An Energy Efficiency and Greenhouse Gas Emissions Strategy and Management Plan will be prepared for the project as part of the project's Sustainability Management Plan and will be implemented to assist in achieving 'Design' and 'As Built' ratings of Excellent under the Infrastructure Sustainability Council of Australia infrastructure rating tool.   | Not applicable due to small scale nature of works   | Not applicable due to small scale nature of works   |
| GHG2 | Undertake an updated greenhouse gas (GHG) assessment based on detailed design for ongoing monitoring and review of emissions during construction.  | Not applicable due to small scale nature of works   | Not applicable due to small scale nature of works   |
| GHG3 | Opportunities to use low emission construction materials, such as recycled aggregates in road pavement and surfacing, and cement replacement materials will be investigated and incorporated where feasible and cost-effective.  | Applicable  | Applicable  |
| GHG4 | Construction plant and equipment will be operated and maintained to maximise efficiency and reduce emissions, with construction planning used to minimise vehicle wait times and idling onsite and machinery turned off when not in use.   | Applicable  | Applicable  |

| <b>REMM</b> | <b>Description</b>   | <b>Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)*</b> | <b>Rozelle Parkland Enhancement (Stage 4)</b>     |
|-------------|--|---|---|
| GHG5        | Locally produced goods and services will be procured where feasible and cost effective to reduce transport fuel emissions.   | Applicable  | Applicable  |
| GHG6        | At least 20 per cent of construction energy (electricity) required for the project will be sourced from possible. Six per cent of construction energy (electricity) requirements will be offset, with any offset undertaken in accordance with the Australian Government National Carbon Offset Standard.  | Not applicable due to small scale nature of works                                       | Not applicable due to small scale nature of works |
| OGHG7       | The tunnel will be designed with appropriate vertical alignments and grades to allow vehicles to maintain constant speeds and minimise fuel use to reduce potential greenhouse gas emissions.  | Not applicable  | Not applicable                                    |
| OGHG8       | Energy efficiency will be considered during the design of mechanical and electrical systems such as the tunnel ventilation system, tunnel lighting, water treatment systems and electronic toll and surveillance systems. Energy efficient systems will be installed where reasonable and practicable.   | Not applicable  | Not applicable                                    |
| OGHG9       | At least six per cent of operational energy (electricity) required for the project will be sourced from an accredited GreenPower energy supplier and/or through renewable energy generated onsite.   | Not applicable  | Not applicable                                    |
| RW1         | Construction material will be sourced in accordance with the relevant aims of the WestConnex Sustainability Strategy (Sydney Motorway Corporation 2015) and a Sustainability Management Plan (that will be developed during detailed design), including to optimise resource efficiency and waste management, and select locally sourced materials and prefabricated assets where possible, to reduce greenhouse gas emissions.<br><br>Unnecessary resource consumption will be avoided through the detailed design of the project and by making realistic predictions about the required quantities of resources, such as construction materials. | Not applicable due to small scale nature of works                                       | Applicable  |
| RW2         | Wastes will be managed and disposed of in accordance with relevant NSW legislation and government policies.  | Applicable  | Applicable  |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|--|--|--|
| RW3  | A Construction Waste Management Plan will be prepared as part of the CEMP and regularly updated during detailed design and construction, detailing appropriate procedures for waste management. The plan will include the waste management measures described in this EIS.   | Partially Applicable, refer Appendix D   | Partially Applicable, refer Appendix E |
| RW4  | <p>Wastes will be managed using the waste hierarchy principles of:</p> <ul style="list-style-type: none"> <li>• Avoidance of unnecessary resource consumption to reduce the quantity of waste being generated</li> <li>• Recovery of resources for reuse on-site or off-site for the same or similar use, without reprocessing</li> <li>• Recovery of resources through recycling and reprocessing so that waste can be processed into a similar non-waste product and reused</li> <li>• Disposal of residual waste.</li> </ul>  | Applicable   | Applicable                             |
| RW5  | <p>Resource recovery will be applied to the management of construction waste and will include:</p> <ul style="list-style-type: none"> <li>• Recovery of resources for reuse - reusable materials generated by the project will be segregated for reuse on site, or off site where possible, including the reuse of the major waste streams (VENM)</li> <li>• Recovery of resources for recycling - recyclable resources (such as metals, plastics and other recyclable materials) generated during construction and demolition</li> <li>• Resources will be segregated for recycling and sent to an appropriate recycling facility for processing</li> <li>• Recovery of resources for reprocessing - cleared vegetation will be mulched or chipped on-site and used for landscaping, in the absence of a higher beneficial use being identified.</li> </ul> | Applicable   | Applicable                             |
| RW6  | Options identified for the off-site reuse of waste will comply with relevant NSW EPA resource recovery exemptions and requirements.  | Applicable   | Applicable                             |
| RW7  | The Construction Waste Management Plan will document anticipated volumes of spoil that will be generated by the project, spoil storage locations within project sites and likely spoil disposal sites.   | Not Applicable   | Not applicable                         |

| REMM | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)                               |
|------|---|--|--|
|      | The Construction Waste Management Plan and spoil reuse opportunities will be regularly reviewed and updated during detailed design and project construction.  |  |  |
| RW8  | The project will reuse or recycle around 95 per cent of uncontaminated spoil generated for beneficial purposes, either within the project or at other locations in accordance with the project spoil management hierarchy.  | Not applicable due to small scale nature of works                                | Not applicable   |
| RW9  | Suitable areas will be identified to allow for contingency management of unexpected waste materials, including contaminated materials. Suitable areas will be required to be hardstand or lined areas that are appropriately stabilised and bunded, with sufficient area for stockpile storage. | Not applicable due to small scale nature of works                                | Not Applicable   |
| RW10 | 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) and detailed in the CEMP.                    | Applicable   | Applicable   |
| RW11 | Spoil stockpiles will be provided with appropriate environmental controls and managed to reduce potential impacts associated with dust generation, erosion and sedimentation.   | Applicable   | Applicable   |
| RW12 | General wastes from site offices such as putrescibles, paper, cardboard, plastics, glass and printer cartridges will be separated and collected for recycling off-site wherever practicable.  | Not Applicable   | Not applicable   |
| RW13 | An asbestos survey will be undertaken of buildings to be demolished as part of the project in accordance with an Asbestos Management Plan as part of the Work Health and Safety Plan. The survey will be conducted by a suitably qualified person.  | Not applicable. Building demolition not proposed as part of Stage 3.             | Not applicable. Building demolition not proposed as part of Stage 4. |
| RW14 | Asbestos handling and management will be undertaken in accordance with an Asbestos Management Plan (or similar) prepared in accordance with relevant legislation, regulations and codes of practice as described in Chapter   | Applicable   | Applicable   |

| REMM  | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)            |
|-------|--|--|---|
|       | 23 (Resource use and waste minimisation) of the EIS. Adjacent communities will be provided with advance notification about potential hazards.  |  |   |
| OpRW1 | The project will be operated in accordance with the relevant aims of the WestConnex Sustainability Strategy (Sydney Motorway Corporation 2015) and a Sustainability Strategy will be developed during detailed design to outline ways to optimise resource efficiency and waste management.                  | Not applicable   | Applicable  |
| OpRW2 | Waste will be managed and disposed of in accordance with relevant NSW legislation and government policies and the mitigation measures described in this EIS.   | Applicable   | Applicable  |
| OpRW3 | Opportunities to reuse treated groundwater during project operation will be considered in preference to discharge to receiving waterbodies. This could include irrigation of landscaped areas within the project footprint such as new open spaces at the Rozelle interchange.                               | Not applicable   | Not applicable                                    |
| OpRW4 | In order to reduce demand on local water supplies, options will be investigated to provide water for the deluge system from wastewater produced through the tunnel drainage system, where it meets appropriate quality parameters.   | Not applicable   | Not applicable                                    |
| CC1   | In the refinement of construction Work Health and Safety Management Plans, consider the increased potential for heat stress among construction personnel and implement measures for greater awareness and education of personnel around health and wellbeing during periods of extreme heat.                 | Applicable   | Applicable  |
| CC2   | A detailed climate change risk assessment which will be undertaken during detailed design, in accordance with AS 5334-2013 Climate change adaptation for settlements and infrastructure - A risk based approach. The assessment will identify adaptation measures to address medium, high and extreme risks. | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |
| CC3   | Adaptation measures will be identified and implemented to address high and extreme climate change risks. Adaptation measures for medium risks will also be considered further during detailed design and implemented where reasonable and feasible.  | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |

| REMM | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|------|--|--|--|
| CC4  | The impact of climate change on potential flood risks will be considered during development of the detailed design in accordance with relevant guidelines as described in Chapter 17 (Flooding and drainage) and Appendix Q (Technical working paper: Surface water and flooding) of the EIS.  | Not applicable due to small scale nature of works                                | Not applicable                         |
| CC5  | Increased flood risks due to climate change will be considered in the detailed design of drainage systems. Drainage network features will be developed and installed to mitigate potential increased flood risks as described in Chapter 17 (Flooding and drainage) and Appendix Q (Technical working paper: Surface water and flooding) of the EIS.   | Not applicable due to small scale nature of works                                | Not applicable                         |
| CC6  | Potential changes to sea levels due to climate change will be considered during the design of operational water treatment plants that will discharge to waterways. Discharge outlets and relevant water treatment plant features will be designed and constructed accordingly.   | Not applicable due to small scale nature of works                                | Not applicable                         |
| CC7  | Consider the projected increase in the intensity and frequency of extreme rainfall during detailed design, which may lead to exacerbated risk of road incidents. Consider implementation of operational procedures for surface connections to increase safety during extreme rainfall events, such as use of variable speed signs and reduced speed limits.  | Not applicable due to small scale nature of works                                | Not applicable                         |
| HR1  | <p>Storage of dangerous goods and hazardous materials will occur in accordance with suppliers' instructions and relevant Australian Standards and legislation including the:</p> <ul style="list-style-type: none"> <li>• Work Health and Safety Act 2011 (NSW)</li> <li>• Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW 2005)</li> <li>• Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (NSW EPA 1997).</li> </ul> <p>Storage methods may include bulk storage tanks, chemical storage cabinets/ containers or impervious bunds.</p> | Not Applicable   | Applicable                             |
| HR2  | Secure, bunded areas will be provided around storage areas for oils, fuels and other hazardous liquids. Impervious bunds will be of sufficient capacity to contain at least 110 per cent of the volume of the largest stored container.  | Applicable   | Applicable                             |

| REMM  | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4) |
|-------|--|--|--|
| HR3   | Management measures to reduce the potential for spills, reduce potential spill volumes and prevent any contamination will be developed and implemented for activities such as vehicle refuelling, servicing, maintenance, and washdown, where there is a potential for spills and contamination.                             | Applicable   | Applicable                             |
| HR4   | Safety Data Sheets for dangerous goods and hazardous substances will be stored on site prior to their arrival.   | Applicable   | Applicable                             |
| HR5   | Transport of dangerous goods and hazardous substances will be conducted in accordance with relevant legislation and codes, including the Dangerous Goods (Road and Rail Transport) Regulation 2014 (NSW) and the Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission 2008). | Applicable   | Applicable                             |
| HR6   | Construction lighting will be designed and installed in accordance with the design requirements of the Civil Aviation and Safety Authority (CASA) and the Sydney Airport Master Plan 2033.   | Not applicable   | Not applicable                         |
| OpHR1 | The fire and safety systems and measures adopted for the project will be equivalent to or exceed the fire safety measures recommended by National Fire Protection Association 502 (American), Permanent International Association of Road Congresses (European), AS4825 (Australian) and Roads and Maritime standards.       | Not applicable   | Not applicable                         |
| OpHR2 | Ongoing consultation will be undertaken with emergency services regarding fire and safety systems and associated measures adopted for the project.   | Not applicable   | Not applicable                         |
| OpHR3 | The transport of dangerous goods and hazardous substances will be prohibited through all tunnels and entry and exit ramps associated with the project.   | Not applicable   | Not applicable                         |
| OpHR4 | An Incident Response Plan will be developed as part of the Emergency Response Plan for the project and implemented in the event of an accident or incident.  | Not applicable   | Not applicable                         |
| OpHR5 | The response to incidents within the motorway will be managed in accordance with the memorandum of understanding between Roads and Maritime and the NSW Police Service, NSW Rural Fire Service, NSW Fire Brigade and other emergency services.   | Not Applicable   | Not applicable                         |



| REMM   | Description  | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58)<br>(Stage 3)* | Rozelle Parkland Enhancement<br>(Stage 4) |
|--------|--|---|---|
| OpHR6  | <p>Storage of dangerous goods and hazardous materials will occur in accordance with suppliers' instructions and relevant Australian Standards and legislation including the:</p> <ul style="list-style-type: none"> <li>• Work Health and Safety Act 2011 (NSW)</li> <li>• Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW 2005)</li> <li>• Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (NSW EPA 1997).</li> </ul> <p>Storage methods may include bulk storage tanks, chemical storage cabinets/ containers or impervious bunds.</p> | Not applicable (not relevant to operation of Stage 3)                               | Applicable                                |
| OpHR7  | Secure, bunded areas will be provided around storage areas for oils, fuels and other hazardous liquids. Impervious bunds will be of sufficient capacity to contain at least 110 per cent of the volume of the largest stored container.  | Not applicable (not relevant to operation of Stage 3)                               | Applicable                                |
| OpHR8  | Management measures to reduce the potential for spills, reduce potential spill volumes and prevent any contamination will be developed and implemented for activities such as vehicle refuelling, servicing, maintenance or washdown, where there is a potential for spills and contamination.   | Not applicable (not relevant to operation of Stage 3)                               | Applicable                                |
| OpHR9  | Material Safety Data Sheets for dangerous goods and hazardous substances will be stored on site prior to their arrival.  | Not applicable (not relevant to operation of Stage 3)                               | Applicable                                |
| OpHR10 | The detailed design of the project substations will ensure that the exposure limits for the general public suggested by the Draft Radiation Standard (Australian Radiation Protection and Nuclear Safety Agency 2006) will not be exceeded at the boundary of the substation sites.  | Not applicable (not relevant to operation of Stage 3)                               | Not applicable                            |
| OpHR11 | Should the exhaust plumes at any of the M4-M5 Link ventilation outlets be assessed as a 'controlled activity' under the Airports Act and the Airspace Regulations, then the project will be operated in accordance with any conditions of approval from the Secretary of Department of Infrastructure and Regional Development.  | Not applicable (not relevant to operation of Stage 3)                               | Not applicable                            |

| REMM   | Description   | Rozelle Interchange Pedestrian and Cyclist Improvement Strategy (E58) (Stage 3)* | Rozelle Parkland Enhancement (Stage 4)            |
|--------|---|--|---|
| OpHR12 | Aviation hazard lighting (if required), building lighting and surface road lighting will be designed and operated in accordance with the requirements of CASA and the Sydney Airport Master Plan 2033.  | Not applicable (not relevant to operation of Stage 3)                            | Not applicable                                    |
| C1     | <p>Cumulative impacts strategy will be prepared in accordance with the Cumulative impact assessment methodology in Chapter 26 and Appendix C (Cumulative impact assessment methodology) of the EIS. It will include strategies and measures to minimise cumulative impacts on the community and other stakeholders including:</p> <ul style="list-style-type: none"> <li>• Identification of key stakeholders and projects</li> <li>• Identification of precincts for which separate Cumulative impact plans may be developed and implemented</li> <li>• Identification of a co-ordinating body</li> <li>• Procedures and mechanisms for co-ordinating consultation and sharing of information, such as works programs and schedules, with other projects</li> <li>• Opportunities and measures to work with other projects to minimise the effects of impacts and enhance the benefits of multiple projects occurring concurrently or consecutively</li> <li>• Opportunities to co-ordinate community communications across the various projects to provide consistent messaging.</li> </ul> | Applicable   | Not applicable due to small scale nature of works |
| C2     | A Community Consultative Committee will be established for the project in accordance with Community Consultative Committee Guidelines (NSW Department of Planning and Environment 2016). The committee will provide a forum for discussion between Roads and Maritime, the construction contractor(s), local community and councils regarding the project, including cumulative impacts.  | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |
| S1     | The construction contractor will develop and implement a Sustainability Management Plan during detailed design. The Sustainability Management Plan will establish governance structures, processes and systems that ensure integration of all sustainability considerations (vision, commitments, principles, objectives and targets), initiatives, monitoring and reporting during the detailed design and construction phases of the project.   | Not applicable due to small scale nature of works                                | Not applicable due to small scale nature of works |

| REMM | Description   | Rozelle Interchange<br>Pedestrian and<br>Cyclist<br>Improvement<br>Strategy (E58)<br><br>(Stage 3)* | Rozelle<br>Parkland<br>Enhancement<br><br>(Stage 4) |
|------|---|---|---|
| S2   | The project will be designed and constructed to achieve an Excellent 'Design' and 'As built' rating under the Infrastructure Sustainability Council of Australia's Infrastructure Sustainability rating tool. | Not applicable due to small scale nature of works   | Not applicable due to small scale nature of works   |

\* All Revised Environmental Mitigation Measures were considered applicable to Stage 1 and Stage 2

## Appendix C Key Conditions of Approval consistent across construction

| CoA         | Report/notification                          | Timing   |
|-------------|--|--|
| A12         | Staging Report                               | This Staging Report specifies the CoAs that apply to each stage of construction and operation and how compliance with those CoAs will be achieved across and between the stages of the project. A single report is applicable to the whole M4-M5 Link project.   |
| A18         | Environmental Representative                 | The Environmental Representative has been engaged across all stages of construction to ensure consistency.   |
| A24         | Acoustics Advisor                            | The Acoustics Advisor has been engaged across all stages of construction to ensure consistency.  |
| A44,<br>A45 | Identification of workforce and compounds    | All construction spoil haulage vehicles (associated with the excavation of the tunnel and large bulk earthworks in Stage 1 and Stage 2) and signage on hoardings surrounding the construction ancillary facilities for the project will include the project name and CSSI application number to enable immediate identification during construction. |
| B7          | WestConnex Acquisition Assistance Line       | The WestConnex Acquisition Assistance Line will be consistent across both stages of the project.   |
| B8          | Complaints Management System                 | The Complaints Management System will be consistently used across both stages during construction to ensure consistency in recording, managing and responding to complaints.   |
| B9          | Complaints Register                          | The Complaints Register will be consistently used during both stages of construction to ensure consistency in reporting to the Secretary.  |
| B10         | Community enquiries and complaints           | The 24 hour toll-free telephone number, postal address, email address and mechanism for community members to make enquiries in common community languages will be consistent across both stages of construction.   |
| B13         | Community Complaints Mediator                | The Community Complaints Mediator has been engaged across both stages of construction, to ensure consistency in the delivery of the project.   |
| B17         | Website                                      | The WestConnex website will be utilised for both stages.   |
| E2          | Air Quality Community Consultative Committee | Some of the members comprising the Air Quality Community Consultative Committee are consistent across the project during construction and operation of Stage 1 and Stage 2.  |

# Appendix D Stage 3 Impact Register

Stage 3 of the project involves delivery of the pedestrian and cycleway improvements in accordance with CoA E58. Activities required to undertake this activity include:

- General construction activities
- Demolition of kerbs and gutter
- Earthworks
- Civil concreting works for raised thresholds
- Milling and resheeting of road pavement
- Tie-in works
- Linemarking and installation / removal of signage
- Landscaping and rehabilitation work.

An environmental risk assessment for the Stage 3 pedestrian and cycleway improvements has been completed to assist in determining applicability of each environmental management category to this stage of the project. The table identifies the construction activity/aspect, the associated potential environmental impacts and a risk rating for that impact. The risk rating (refer to Table 3) is based on the likelihood of the event occurring (refer to Table 1) and the consequence (refer to Table 2); the classification system used is based on the Environmental Management Plan Guideline – Guideline for Infrastructure Projects (DPIE April 2020). Where a risk is assessed as low or medium it will be managed with a procedure; high and severe risks will be managed with a sub-plan. There are no high or severe residual risks and therefore procedures rather than sub plans are required to support the Contractor’s EMP for Stage 3.

**Table 1: Likelihood criteria**

| <b>Probability (likelihood)</b> | <b>Description</b>  |
|---------------------------------|---|
| <i>Highly likely (5)</i>        | <i>Is expected to occur in most circumstances</i>         |
| <i>Likely (4)</i>               | <i>Will probably occur during the life of the project</i> |
| <i>Possible (3)</i>             | <i>Might occur during the life of the project</i>         |
| <i>Unlikely (2)</i>             | <i>Could occur but considered unlikely or doubtful</i>    |
| <i>Rare (1)</i>                 | <i>May occur in exceptional circumstances</i>             |

**Table 2: Consequence criteria**

| <b>Consequence (impact)</b> | <b>Description</b>  |
|-----------------------------|---|
| <i>Minor (1)</i>            | <i>Minor incident of environmental damage that can be reversed</i>  |
| <i>Medium (2)</i>           | <i>Isolated but substantial instances of environmental damage that could be reversed with intensive efforts</i> |
| <i>High (3)</i>             | <i>Substantial instances of environmental damage that could be reversed with intensive efforts</i>              |
| <i>Major (4)</i>            | <i>Major loss of environmental amenity and real danger of continuing</i>  |
| <i>Critical (5)</i>         | <i>Severe widespread loss of environmental amenity and irrecoverable environmental damage</i>                   |

**Table 3: Risk rating**

|            |                    | Consequence |            |             |             |              |
|------------|--------------------|-------------|------------|-------------|-------------|--------------|
|            |                    | Minor (1)   | Medium (2) | High (3)    | Major (4)   | Critical (5) |
| Likelihood | Almost certain (5) | Medium (5)  | High (10)  | High (18)   | Severe (23) | Severe (25)  |
|            | Likely (4)         | Low (4)     | Medium (9) | High (17)   | High (20)   | Severe (24)  |
|            | Possible (3)       | Low (3)     | Medium (8) | Medium (13) | High (19)   | Severe (22)  |
|            | Unlikely (2)       | Low (2)     | Low (7)    | Medium (12) | High (15)   | High (21)    |
|            | Rare (1)           | Low (1)     | Low (6)    | Low (11)    | Medium (14) | High (16)    |



**Table 4: Stage 3 Pedestrian and cycleway improvements - Impact register**

| Issue       | Potential impact  | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required  |
|-------------|---|--------------------------------|---|---------------------------------|---|
| Air Quality | <p>Generation of dust due to cutting/ grinding/ sawing equipment, material/ waste/ spoil handling; and generation of exhaust emissions due to inappropriate plant maintenance</p> <p>Generation and mobilisation of dust impacting receivers including residents, businesses, vegetation and habitats</p> | 9 (Medium)                     | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Construction activities with the potential to generate dust will be modified or ceased during unfavourable weather conditions to reduce the potential for dust generation</li> <li>○ Disturbed areas will be maintained and managed in a sequential manner to reduce dust generation</li> <li>○ Storage of materials that have the potential to result in dust generation will be minimised and kept within dedicated areas at all times</li> <li>○ During high wind and/or dry conditions, programming of dust generating activities is to be considered in order to reduce nuisance to neighbouring properties</li> <li>○ Demolition activities will be planned and carried out to minimise the potential for dust generation</li> <li>○ Adequate dust suppression will be applied during all demolition works required to facilitate the Project</li> </ul> <p>Indirect:</p> | 7 (low)                         | <p>Environmental Management Plan (EMP).</p> <p>Air Quality Management Procedure (AQP)</p> |

| Issue         | Potential impact  | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required   |
|---------------|---|--------------------------------|---|---------------------------------|--|
|               |   |                                | <ul style="list-style-type: none"> <li>○ Other measures outlined in an Air Quality Management Procedure (AQP)</li> </ul>  |                                 |  |
| Biodiversity  | <p>Overly excessive tree pruning</p> <p>Accidental tree clearing</p> <p>Accidental damage to tree roots</p> <p>Accidental clearing of high value retention trees / areas of trees to retain</p> | 8 (Medium)                     | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Toolbox talks regarding limitation of proposed scope on trees (limited tree pruning proposed only)</li> <li>○ Clearly delineate the Project footprint prior to commencement of work</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Engage an arborist to supervise works where impact or damage to tree roots is probable</li> <li>○ Provide tree protection where required at the direction of the arborist</li> <li>○ Other measures outlined in the Arborist Report</li> </ul> | 7 (low)                         | <p>Environmental Management Plan (EMP).</p> <p>Arborist Report</p>                           |
| Contamination | Contamination of soil or water from spill or leak of dangerous or hazardous materials from plant / equipment  | 17 (High)                      | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ The use of any hazardous substance that could result in a spill will be undertaken away from drainage or stormwater lines and, wherever possible, within defined bunds</li> <li>○ Refuelling shall be undertaken offsite wherever possible</li> </ul>   | 13 (Medium)                     | <p>Environmental Management Plan (EMP).</p> <p>Soil and Water Management Procedure (SWP)</p> |

| Issue | Potential impact  | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required  |
|-------|---|--------------------------------|---|---------------------------------|---|
|       |   |                                | <ul style="list-style-type: none"> <li>○ Any refuelling undertaken on site shall be undertaken in designated areas only, outside of riparian areas and well away from stormwater system inlets</li> <li>○ All spills or leakages will be immediately contained and absorbed</li> <li>○ Spill containment kits will be placed at locations where there is direct discharge of stormwater to receiving waterways</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the Soil and Water Management Procedure (SWP)</li> </ul> |                                 | Unexpected Contamination Finds Procedure (within SWP)   |
|       | Exposure to unidentified contaminated materials during works, causing program delays and injuries and health concerns | 13 (Medium)                    | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Induct construction personnel in the identification and management of previously unidentified contaminated sites.</li> <li>○ The discovery of previously unidentified contaminated material will be managed in accordance with an unexpected contaminated lands finds procedure. The procedure will include:</li> <li>○ Cease work in the vicinity</li> <li>○ Initial assessment by an appropriately qualified environmental consultant</li> </ul>  | 12 (Medium)                     | <p>Environmental Management Plan (EMP)</p> <p>Unexpected Contamination Finds Procedure (within SWP)</p> |

| Issue    | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required  |
|----------|--|--------------------------------|---|---------------------------------|---|
|          |  |                                | <ul style="list-style-type: none"> <li>○ Further assessment and management of contamination, if confirmed, in accordance with Section 105 of the CLM Act</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the Unexpected Contaminated Land Finds Procedure</li> </ul>  |                                 |   |
| Heritage | Disturbance or damage of unidentified Aboriginal heritage artefact | 11 (Low)                       | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ All on site personnel will be provided with site training in regard to Aboriginal cultural heritage site awareness, key mitigation and management requirements and their responsibilities pertaining to the Aboriginal Heritage provisions of the <i>NPW Act 1974 (NSW)</i> prior to construction commencing. Training will include unexpected heritage finds procedures for heritage items, objects and human remains.</li> <li>○ Implement Unexpected Heritage Finds and Human Remains Procedure</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the Heritage Management Procedure (HMP)</li> </ul> | 11 (Low)                        | <p>Environmental Management Plan (EMP)</p> <p>Heritage Management Procedure (HMP)</p> <p>Unexpected Heritage Finds and Human Remains Procedure (within HMP)</p> |

| Issue               | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required  |
|---------------------|--|--------------------------------|---|---------------------------------|---|
|                     | Disturbance or damage of non-Aboriginal heritage items including   | 13 (Medium)                    | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Any excavations, intrusive works or other operations that have the potential to impact areas of known heritage, cultural or archaeological items must ensure works are performed in accordance with a heritage assessment and regulatory requirements (which may include a dilapidation survey and/or supervision of works by a competent person and/or vibration monitoring)</li> <li>○ Any such areas should be signposted and segregated by the erection of physical barriers to prevent authorised entry</li> </ul> | 12 (Medium)                     | <p>Environmental Management Plan (EMP)</p> <p>Heritage Management Procedure (HMP)</p>   |
| Noise and Vibration | Noise and vibration impacts on nearby receivers, including out of hours impacts resulting in structural damage or community complaints | 17 (High)                      | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ All on site personnel will undergo a site induction and ongoing toolbox talks that will detail noise and vibration requirements from this plan through inductions, toolboxes and targeted training</li> <li>○ Noise and vibration monitoring undertaken in accordance with the Project's Construction Noise and Vibration Monitoring Program</li> <li>○ The safe working distances for vibration intensive plant would be complied with</li> </ul>  | 13 (Medium)                     | <p>Environmental Management Plan (EMP)</p> <p>Noise and Vibration Procedure (NVP)</p> <p>Construction Noise and Vibration Monitoring Program</p> <p>Construction Noise Vibration Impact Statement (CNVIS)</p> |

| Issue | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required  |
|-------|--|--------------------------------|---|---------------------------------|---|
|       |  |                                | <p>where feasible and reasonable. This would include the consideration of smaller equipment when working in close proximity to existing structures. (Smooth drum roller will be used for milling and resheeting)</p> <ul style="list-style-type: none"> <li>○ Where structures are identified in the safe working distance then a condition survey will be carried out, pre and post construction.</li> <li>○ Erection of temporary noise walls</li> <li>○ Community liaison and notification</li> <li>○ Provision of respite where required</li> <li>○ Programming the works to minimise the duration of noisy works in any one particular location</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the NVP and Construction Noise and Vibration Monitoring Program</li> </ul> |                                 |   |
|       | Noise disturbance due to works undertaken out of standard construction hours | 17 (Severe)                    | <ul style="list-style-type: none"> <li>○ Out of Hours Works are to be carried out in accordance with the Project's Out-of-Hours-Works Protocol – Works not subject to an EPL</li> </ul>   | 13 (Medium)                     | <p>Environmental Management Plan (EMP)</p> <p>Noise and Vibration Procedure (NVP)</p> |

| Issue          | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required  |
|----------------|--|--------------------------------|--|---------------------------------|---|
|                |  |                                | <ul style="list-style-type: none"> <li>○ Ensure OOHW are appropriately justified – safety or community requirement.</li> <li>○ Implement noise mitigation strategies for out of standard hours work as per OOHW Protocol.</li> <li>○ Monitor noise for compliance to project goals.</li> <li>○ Community notifications distributed.</li> </ul>   |                                 | OOHW Protocol                             |
| Soil and Water | Serious incidents, e.g. uncontrolled release of washout water, major fuel spill, that cause or threaten material harm to the environment | 13 (Medium)                    | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ No concrete washout to be undertaken on site.</li> <li>○ The use of any hazardous substance that could result in a spill will be undertaken away from drainage or stormwater lines and, wherever possible, within defined bunds</li> <li>○ No refuelling to be undertaken on site.</li> <li>○ Spill containment kits will be placed at locations where there is direct discharge of stormwater to receiving waterways</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the SWP</li> </ul> | 12 (Medium)                     | Soil and Water Management Procedure (SWP) |
|                | Erosion and sedimentation impacts on   | 9 (Medium)                     | Direct:  | 8 (Medium)                      | Soil and Water Management Procedure (SWP) |

| Issue   | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required  |
|---------|--|--------------------------------|--|---------------------------------|---|
|         | downstream waterways due to exposed land, inadequate controls or failure of controls   |                                | <ul style="list-style-type: none"> <li>○ All on site personnel will undergo a site induction and ongoing toolbox talks that will detail erosion and sediment control management measures</li> <li>○ Suitably qualified Environment Manager to be on site</li> <li>○ Erosion and Sedimentation Control Plan to advise on the implementation of erosions and sediment controls</li> <li>○</li> <li>○ Hardstand areas and surrounding public roads will be cleaned as required using methods such as brooms, bobcat attachments or street sweepers</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the SWP</li> </ul> |                                 | ESCP  |
| Traffic | Traffic and parking impacts due to increased number of construction vehicles, site access arrangements and vehicle movements | 17 (High)                      | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Designated routes for heavy vehicles</li> <li>○ Deployment of surveillance officers</li> <li>○ Utilisation of the traffic control centre</li> <li>○ Limiting vehicle movements to designated entries and exits and haulage routes</li> </ul>   | 9 (Medium)                      | <p>Traffic Management Plan (TMP)</p> <p>Construction Parking and Access Strategy (CPAS)</p> <p>Road Dilapidation Report</p> |



| Issue | Potential impact | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required |
|-------|------------------|--------------------------------|--|---------------------------------|--|
|       |                  |                                | <ul style="list-style-type: none"> <li>○ All on site personnel will undergo a site induction and ongoing toolbox talks that will detail traffic, transport and access management measures</li> <li>○ Communication and adherence to a Worker Code of Conduct</li> <li>○ Minimise construction vehicle parking on public roads</li> <li>○ Queuing and idling of construction vehicles in residential streets will be minimised</li> <li>○ Notifications to be implemented (i.e. parking signage and routine communication) for disruption to roadway and parking areas.</li> <li>○ Vehicle movements to and from sites will be managed to ensure pedestrian, cyclist and motorist safety.</li> <li>○ 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.</li> <li>○ Measures identified in the TMP will be implemented for each construction site</li> </ul> |                                 |  |

| Issue     | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required |
|-----------|--|--------------------------------|--|---------------------------------|--|
|           |  |                                | <p>which requires direct access/egress onto the local/arterial road network</p> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the TMP</li> </ul>  |                                 |  |
| Utilities | Damage to existing utility services  | 20 (High)                      | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Ensuring appropriate precautionary measures are undertaken or in place prior to works such as completing Dial Before You Dig searches</li> <li>○ Positive utility identification such as through potholing or non-destructive digging</li> <li>○ Utilisation of utility spotters</li> <li>○ Ensuring Ground Penetration Permits are obtained</li> <li>○ Liaison with the relevant utility agencies as required</li> <li>○</li> </ul> | 19 (Medium)                     | Environmental Management Plan (EMP)      |
| Visual    | Visual impacts on nearby receivers due to light spill, construction works, overshadowing | 9 (Medium)                     | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Site establishment works will be conducted to minimise visual impacts. Where there is no noise wall or hoarding in place, boundary fencing will be installed</li> </ul>  | 8 (Medium)                      | Environmental Management Plan (EMP)      |

| Issue | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required   |
|-------|--|--------------------------------|---|---------------------------------|--|
|       |  |                                | <p>to minimise visual, noise and air quality impacts on adjacent sensitive receivers</p> <ul style="list-style-type: none"> <li>○ Retention of existing vegetation or treatment of key temporary structures</li> <li>○ Minimise light spill from the project by directing construction lighting into the construction areas and ensuring the site is not over-lit</li> </ul>  |                                 |  |
| Waste | Inappropriate disposal of waste (including demolition, vegetation and hazardous / special waste) or disposal at an unlicensed waste facility | 13 (Medium)                    | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ All on site personnel will undergo a site induction and ongoing toolbox talks that will detail waste and resource management measures</li> <li>○ Vegetation disposal in accordance with the Vegetation Management Procedure</li> <li>○ EPA Waste classification Guidelines to be implemented for works</li> <li>○ Suitably licensed waste contractors will be used for the collection and transport of all non-domestic, retail and commercial wastes for either offsite processing and/or disposal to an appropriately licensed facility.</li> <li>○ Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes</li> </ul> | 12 (Medium)                     | <p>Environmental Management Plan (EMP)</p> <p>Waste and Resource Use Management Procedure (WP)</p> <p>Soil and Water Management Procedure (SWP)</p> <p>Vegetation Management Procedure (VMP)</p> |

| Issue | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required |
|-------|--|--------------------------------|--|---------------------------------|--|
|       |  |                                | <ul style="list-style-type: none"> <li>○ Waste tracking register</li> </ul> Indirect: <ul style="list-style-type: none"> <li>○ Other measures outlined in the Waste and Resource Use Waste Management Procedure (WP), SWP and VMP</li> </ul>                               |                                 |  |
|       | Litter, inappropriate use of co-mingling and waste receptacles | 4 (Low)                        | Direct: <ul style="list-style-type: none"> <li>○ All staff and subcontractors will undergo a site induction and ongoing toolbox talks that will detail waste and resource management measures (including the waste management hierarchy) and energy consumption</li> </ul> | 3 (Low)                         | Environmental Management Plan (EMP)      |

## Appendix E Stage 4 Impact Register

Stage 4 of the project involves construction of a second facilities building; two multi-purpose courts; lighting towers over the AFL/cricket oval and soccer oval; four AFL goal posts at each end of AFL oval, and an additional toilet. Activities required to undertake this include:

- General construction activities
- Temporary removal of 3 to 4 parking spots along Lilyfield Road
- Minor earthworks/excavation and retaining wall
- Installation of footings and concrete slabs
- Construction of amenities building on site
- Installation of pre-fabricated toilet, ALF goal posts and lighting towers
- Minor piling
- Utility works including protection and/or adjustment of existing utilities and installation of new utilities
- Linemarking of sports fields
- Landscaping and rehabilitation work.

An environmental risk assessment for Stage 4 has been completed to assist in determining applicability of each environmental management category to this stage of the project. The table identifies the construction activity/aspect, the associated potential environmental impacts and a risk rating for that impact. The risk rating (refer to Table 3) is based on the likelihood of the event occurring (refer to Table 1) and the consequence (refer to Table 2); the classification system used is based on the Environmental Management Plan Guideline – Guideline for Infrastructure Projects (DPIE April 2020). Where a risk is assessed as low or medium it will be managed with a procedure; high and severe risks will be managed with a sub-plan. There are no high or severe residual risks and therefore procedures rather than sub plans are required to support the Contractor's CEMP for Stage 4.

**Table 8: Stage 4 Rozelle Parkland Enhancements - Impact register**

| Issue        | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required          |
|--------------|--|--------------------------------|--|---------------------------------|---|
| Air Quality  | <p>Generation of dust due to cutting/ grinding/ sawing equipment, material/ waste/ spoil handling, truck movements; and generation of exhaust emissions due to inappropriate plant maintenance</p> <p>Generation and mobilisation of dust impacting receivers including residents, businesses, vegetation and habitats</p> | 8 (Medium)                     | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Construction activities with the potential to generate dust will be modified or ceased during unfavourable weather conditions to reduce the potential for dust generation</li> <li>○ Disturbed areas will be maintained and managed in a sequential manner to reduce dust generation</li> <li>○ Storage of materials that have the potential to result in dust generation will be minimised and kept within dedicated areas at all times</li> <li>○ Adequate dust suppression will be applied during all construction works required to facilitate the Project</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the CEMP</li> </ul> | 3 (Low)                         | Construction Environmental Management Plan (CEMP) |
| Biodiversity | Accidental damage to tree roots  | 3 (Low)                        | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Toolbox talks regarding limitation of proposed scope on trees</li> </ul>   | 2 (Low)                         | CEMP  |

| Issue         | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required |
|---------------|--|--------------------------------|---|---------------------------------|--|
|               |  |                                | <ul style="list-style-type: none"> <li>○ Clearly delineate the Project footprint prior to commencement of work</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Engage an arborist to supervise works where impact or damage to tree roots is probable</li> <li>○ Provide tree protection where required at the direction of the arborist.</li> </ul>   |                                 |  |
| Contamination | Contamination of soil or water from spill or leak of dangerous or hazardous materials from plant / equipment | 8 (Medium)                     | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ The use of any hazardous substance that could result in a spill will be undertaken away from drainage or stormwater lines and, wherever possible, within defined bunds</li> <li>○ Refuelling shall be undertaken offsite wherever possible</li> <li>○ Any refuelling undertaken on site shall be undertaken in designated areas only, outside of riparian areas and well away from stormwater system inlets</li> <li>○ All spills or leakages will be immediately contained and absorbed</li> </ul> | 3 (Low)                         | CEMP                                     |



| Issue | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required                           |
|-------|--|--------------------------------|--|---------------------------------|--|
|       |  |                                | <ul style="list-style-type: none"> <li>○ Spill containment kits will be placed at locations where there is direct discharge of stormwater to receiving waterways</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in CEMP</li> </ul>   |                                 |  |
|       | Exposure to unidentified contaminated materials during works | 8 (Medium)                     | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Induct construction personnel in the identification and management of previously unidentified contaminated sites.</li> <li>○ The discovery of previously unidentified contaminated material will be managed in accordance with an Unexpected Contamination and Asbestos Procedure. The procedure will include: <ul style="list-style-type: none"> <li>○ Cease work in the vicinity</li> <li>○ Initial assessment by an appropriately qualified environmental consultant</li> <li>○ Further assessment and management of contamination, if confirmed, in accordance with Section 105 of the CLM Act</li> </ul> </li> </ul> <p>Indirect:</p> | 3 (Low)                         | <p>CEMP</p> <p>Unexpected Contamination and Asbestos Procedure</p> |

| Issue    | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required        |
|----------|--|--------------------------------|---|---------------------------------|---|
|          |  |                                | <ul style="list-style-type: none"> <li>○ Other measures outlined in the Unexpected Contamination and Asbestos Procedure</li> </ul>  |                                 |   |
|          | Impact to existing remediation works due to piling                 | 8 (Medium)                     | <ul style="list-style-type: none"> <li>○ Long term EMP</li> <li>○ Other measures outlined in the CEMP</li> </ul>  | 3 (Low)                         | CEMP  |
| Heritage | Disturbance or damage of unidentified Aboriginal heritage artefact | 11 (Low)                       | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ All on site personnel will be provided with site training in regard to Aboriginal cultural heritage site awareness, key mitigation and management requirements and their responsibilities pertaining to the Aboriginal Heritage provisions of the <i>NPW Act 1974 (NSW)</i> prior to construction commencing. Training will include unexpected heritage finds procedures for heritage items, objects and human remains.</li> <li>○ Implement Heritage Unexpected Finds Procedure</li> </ul> | 11 (Low)                        | CEMP<br><br>Heritage Unexpected Finds Procedure |
|          | Disturbance or damage of non-Aboriginal heritage items             | 7 (Low)                        | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Any excavations, intrusive works or other operations that have the potential to impact areas of known heritage, cultural</li> </ul>   | 7 (Low)                         | CEMP<br><br>Heritage Unexpected Finds Procedure |

| Issue               | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required                                 |
|---------------------|--|--------------------------------|--|---------------------------------|--|
|                     |  |                                | <p>or archaeological items must ensure works are performed in accordance with the heritage assessment and regulatory requirements (which may include a dilapidation survey and/or supervision of works by a competent person and/or vibration monitoring)</p>  |                                 |  |
| Noise and Vibration | Noise and vibration impacts on nearby receivers, or community complaints | 9 (Medium)                     | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ All on site personnel will undergo a site induction and ongoing toolbox talks that will detail noise and vibration requirements from this plan through inductions, toolboxes and targeted training</li> <li>○ Programming the works to minimise the duration of noisy works in any one particular location</li> <li>○ The safe working distances for vibration intensive plant would be complied with where feasible and reasonable. This would include the consideration of smaller equipment when working in close proximity to existing structures</li> <li>○ Where structures are identified in the safe working distance then a condition survey</li> </ul> | 8 (Medium)                      | <p>CEMP</p> <p>Construction Noise Vibration Impact Statement (CNVIS)</p> |

| Issue          | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required  |
|----------------|--|--------------------------------|--|---------------------------------|---|
|                |  |                                | <p>will be carried out, pre and post construction.</p> <ul style="list-style-type: none"> <li>○ Community liaison and notification</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the CEMP</li> </ul>   |                                 |   |
|                | Noise disturbance due to works undertaken out of standard construction hours   | 7 (Low)                        | <ul style="list-style-type: none"> <li>○ Out of Hours Works are to be carried out in accordance with the Project's Out-of-Hours-Works Protocol (OOHW) – Works not subject to an EPL</li> <li>○ Ensure OOHW are appropriately justified – safety or community requirement.</li> <li>○ Implement noise mitigation strategies for out of standard hours work as per OOHW Protocol.</li> <li>○ Monitor noise for compliance to project goals.</li> <li>○ Community notifications distributed.</li> </ul> | 8 (Medium)                      | <p>CEMP</p> <p>Construction Noise Vibration Impact Statement</p> <p>OOHW Protocol</p> |
| Soil and Water | Serious incidents, e.g. uncontrolled release of washout water, major fuel spill, that cause or threaten material harm to the environment | 7 (Low)                        | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ No concrete washout to be undertaken on site. The use of any hazardous substance that could result in a spill will be undertaken away from drainage or</li> </ul>  | 7 (Low)                         | CEMP  |

| Issue | Potential impact  | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required              |
|-------|---|--------------------------------|---|---------------------------------|---|
|       |   |                                | <p>stormwater lines and, wherever possible, within defined bunds</p> <ul style="list-style-type: none"> <li>○ No refuelling to be undertaken on site.</li> <li>○ Spill containment kits will be placed at locations where there is direct discharge of stormwater to receiving waterways</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the CEMP</li> </ul>  |                                 |   |
|       | Erosion and sedimentation impacts on downstream waterways due to exposed land, interaction with open swale drain and inadequate controls or failure of controls | 8 (Medium)                     | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ All on site personnel will undergo a site induction and ongoing toolbox talks that will detail erosion and sediment control management measures</li> <li>○ Suitably qualified Environment Manager to be on site</li> <li>○ Erosion and Sedimentation Control Plan to advise on the implementation of erosions and sediment controls</li> <li>○ Hardstand areas and surrounding public roads will be cleaned as required using methods such as brooms, bobcat attachments or street sweepers</li> </ul> <p>Indirect:</p> | 8 (Medium)                      | CEMP<br>Erosion and Sedimentation Control Plan (ESCP) |

| Issue              | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required  |
|--------------------|--|--------------------------------|--|---------------------------------|---|
|                    |  |                                | <ul style="list-style-type: none"> <li>○ Other measures outlined in the CEMP and ESCP</li> </ul>   |                                 |   |
| Traffic and access | <p>Traffic and parking impacts due to increased number of construction vehicles, temporary loss of 3-4 parks on Lilyfield Road for site access arrangements and vehicle movements.</p> <p>Potential impact to Rozelle Parkland users due to disruption of the shared user path and access through the park.</p> <p>Temporary restriction to sporting facilities.</p> | 17 (High)                      | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Designated routes for heavy vehicles</li> <li>○ Limiting vehicle movements to designated entries and exits and haulage routes</li> <li>○ All on site personnel will undergo a site induction and ongoing toolbox talks that will detail traffic, transport and access management measures</li> <li>○ Communication and adherence to a Worker Code of Conduct</li> <li>○ Minimise construction vehicle parking on public roads</li> <li>○ Queuing and idling of construction vehicles in residential streets will be minimised</li> <li>○ Notifications to be implemented (i.e. parking signage and routine communication) for disruption to roadway, SUP, access and parking areas.</li> </ul> | 9 (Medium)                      | <p>CEMP</p> <p>Traffic Management Plan (TMP)</p> <p>Construction Parking and Access Strategy (CPAS)</p> <p>Construction Parking and Access Strategy (E54)</p> |

| Issue     | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required |
|-----------|--|--------------------------------|---|---------------------------------|--|
|           |  |                                | <ul style="list-style-type: none"> <li>○ Vehicle movements to and from sites will be managed to ensure pedestrian, cyclist and motorist safety.</li> <li>○ Measures identified in the TMP and CPAS will be implemented for each construction site which requires direct access/egress onto the local/arterial road network</li> </ul> <p>Indirect:</p> <ul style="list-style-type: none"> <li>○ Other measures outlined in the TMP and CPAS.</li> </ul> |                                 |  |
| Utilities | <p>Damage to existing utility services</p> <p>Temporary disruption to existing power and water for users of the park</p> | 13 (Medium)                    | <p>Direct:</p> <ul style="list-style-type: none"> <li>○ Ensuring appropriate precautionary measures are undertaken or in place prior to works such as completing Dial Before You Dig searches</li> <li>○ Positive utility identification such as through potholing or non-destructive digging</li> <li>○ Utilisation of utility spotters</li> <li>○ Liaison with the relevant utility agencies as required</li> </ul>                                   | 8 (Medium)                      | CEMP                                     |

| Issue  | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures  | Risk level following mitigation | Management Documents / Training Required           |
|--------|--|--------------------------------|---|---------------------------------|--|
| Visual | Visual impacts on nearby receivers and park users due to construction works  | 4 (Low)                        | Direct: <ul style="list-style-type: none"> <li>○ Site establishment works will be conducted to minimise visual impacts. Where there is no noise wall or hoarding in place, boundary fencing will be installed to minimise visual, noise and air quality impacts on adjacent sensitive receivers</li> </ul>  | 3 (Low)                         | CEMP<br><br>Urban Design and Landscape Plan (UDLP) |
| Waste  | Inappropriate disposal of waste (including demolition and potential hazardous / special waste) or disposal at an unlicensed waste facility | 7 (Low)                        | Direct: <ul style="list-style-type: none"> <li>○ All on site personnel will undergo a site induction and ongoing toolbox talks that will detail waste and resource management measures</li> <li>○ Waste and vegetation disposal in accordance with the CEMP</li> <li>○ EPA Waste classification Guidelines to be implemented for works</li> <li>○ Suitably licensed waste contractors will be used for the collection and transport of all non-domestic, retail and commercial wastes for either offsite processing and/or disposal to an appropriately licensed facility.</li> </ul> | 7 (Low)                         | CEMP<br>Long Term EMP                              |



| Issue | Potential impact   | Risk level prior to mitigation | Indicative Mitigation Measures   | Risk level following mitigation | Management Documents / Training Required |
|-------|--|--------------------------------|--|---------------------------------|--|
|       |  |                                | <ul style="list-style-type: none"> <li>○ Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes</li> <li>○ Waste tracking register</li> </ul> Indirect: <ul style="list-style-type: none"> <li>○ Other measures outlined in the CEMP.</li> </ul> |                                 |  |
|       | Litter, inappropriate use of co-mingling and waste receptacles | 4 (Low)                        | Direct: <ul style="list-style-type: none"> <li>○ All staff and subcontractors will undergo a site induction and ongoing toolbox talks that will detail waste and resource management measures (including the waste management hierarchy) and energy consumption</li> </ul>   | 3 (Low)                         | CEMP                                     |