

# Infrastructure approval

## Section 5.19 of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning and Public Spaces under Instrument of Delegation dated 21 January 2021, approve the State significant infrastructure application referred to in schedule 1, subject to the conditions in schedule 2.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts including economic and social impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the SSI.

The Hon. Rob Stokes MP  
Minister for Planning and Public Spaces

Sydney

21 January 2021

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*The Department has prepared a consolidated version of the approval which is intended to include all modifications to the original determination instrument.*

*The consolidated version of the approval has been prepared by the Department with all due care. This consolidated version is intended to aid the approval holder by combining all approvals relating to the original determination instrument but it does not relieve an approval holder of its obligation to be aware of and fully comply with all approval obligations as they are set out in the legal instruments, including the original determination instrument and all subsequent modification instruments.*

# CONSOLIDATED APPROVAL

## SCHEDULE 1

<b>Application Number:</b>	SSI-8863
<b>Proponent:</b>	Transport for New South Wales
<b>Approval Authority:</b>	Minister for Planning and Public Spaces
<b>Site:</b>	Lot numbers, Street Address Real Property Description
<b>State Significant Infrastructure:</b>	<p>Development for the purposes of the Western Harbour Tunnel and Warringah Freeway Upgrade project, being a new multi-lane road link connecting the M4–M5 Link at Rozelle with the Warringah Freeway at North Sydney, including:</p> <ul style="list-style-type: none"><li>• a new crossing of Sydney Harbour approximately 6.5 kilometres of twin multi-lane tunnels linking Rozelle to North Sydney;</li><li>• stub tunnels and ramps for connections to the Gore Hill Freeway and proposed Beaches Link tunnels;</li><li>• connections to stub tunnels at Lilyfield and Rozelle;</li><li>• connections with existing roads at Rozelle, North Sydney and Cammeray;</li><li>• associated works to upgrade the surrounding road network, bridges, interchanges and ramps and to provide cycle and pedestrian pathways;</li><li>• upgrade and integration works along the existing Warringah Freeway; and</li><li>• ancillary development</li></ul>

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## SUMMARY OF MODIFICATIONS

Application Number	Determination Date	Decider	Modification Description
SSI-8863-Mod-1	08 August 2023	Director – Transport Assessments	The provision of an additional ancillary facility site, located at 160 Wicks Road, Macquarie Park, to support the Warringah Freeway Upgrade stage of work
SSI-8863-Mod-2	27 January 2024	Director – Transport and Water Assessments	Change to the tunnelling methodology to cross Sydney Harbour from an immersed tube tunnel design to a tunnel boring machine, and to establish an additional ancillary facility site at Emu Plains for the manufacture and storage of precast segments for lining of the tunnel.

FOR INFORMATION

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## DEFINITIONS

AA	The Acoustics Advisor for the CSSI approved by the Planning Secretary
Aboriginal object	The same meaning as in the <i>National Parks and Wildlife Act 1974</i> (NSW)
Ancillary facility	A temporary facility for construction of the CSSI including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory, material stockpile area and car parking facilities  <i>Note: where an approved CEMP contains a stockpile management protocol, a material stockpile area located within the construction boundary is not considered to be an ancillary facility</i>
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG (2018)	<i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)</i>
At-property treatment	Includes building treatments and courtyard walls. Building treatments may include but are not limited to ventilation, glazing, window and door seals, sealing of vents and underfloor areas as described in Appendix B of <i>At Receiver Noise Treatment Guideline</i> (Roads and Maritime Services, 2017) and other treatments including, but not limited to, noise curtains, shutters and secondary glazing
AQIA	Air Quality Impact Assessment
<b>Boral Emu Plains</b>	<b>Boral Limited, 39a – 43 MacKellar Street, Emu Plains</b>
CALD	Culturally and Linguistically Diverse
CBD	Central business district
CEMP	Construction Environmental Management Plan
Completion of construction	The date upon which construction is completed and all requirements of the Planning Secretary (if any) have been met. If construction is staged, completion of construction is the date upon which construction is completed and all requirements of the Planning Secretary (if any) have been met, in respect of all stages of construction
Construction	Includes all work required to construct the CSSI as described in the documents listed in <b>Condition A1</b> including commissioning trials of equipment and temporary use of any part of the CSSI, but excluding <b>Low Impact Work</b> which is carried out or completed prior to approval of the CEMP.
Construction Boundary	The area physically affected by work as described in the documents listed in <b>Condition A1</b>
CO	Carbon monoxide
CSSI	The Critical State Significant Infrastructure, as described in Schedule 1, the carrying out of which is approved under the terms of this approval

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<b>DECCW</b>	<b>The former Department of Environment, Climate Change and Water NSW (Currently EHG)</b>
Department	NSW Department of Planning and Environment
DECC	Former NSW Department of Environment and Climate Change
DPI Fisheries	NSW Department of Primary Industries, Fisheries
<b>DPE Water</b>	Water Group of the Department of Planning and Environment
<b>EHG</b>	<b>The Environment and Heritage Group of the Department of Planning and Environment</b>
EIS	EIS title, submitted to the Planning Secretary seeking approval to carry out the development described in it, and including any additional information provided by the Proponent in support of the application for approval of the project
EMS	Environmental Management System
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPA	NSW Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
EPL	Environment Protection Licence under the POEO Act
ER	The Environmental Representative(s) for the CSSI approved by the Planning Secretary
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
Environmental Representative Protocol	The document of the same title published by the Department of Planning and Environment dated October 2018
<b>Habitable Room</b>	<b>As defined in the <i>Floodplain Risk Management Guideline AG01</i> (DPE, 2023)</b>
Heavy Vehicle	Has the same meaning as in the Heavy Vehicle National Law (NSW)
Heritage item	A place, building, work, relic, archaeological site, tree, movable object or precinct of heritage significance, that is listed under one or more of the following registers: the State Heritage Register under the <i>Heritage Act 1977</i> (NSW), a state agency heritage and conservation register under section 170 of the <i>Heritage Act 1977</i> (NSW), a Local Environmental Plan under the EP&A Act, the World, National or Commonwealth Heritage lists under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth), and an “Aboriginal object” or “Aboriginal place” as defined in section 5 of the <i>National Parks and Wildlife Act 1974</i> (NSW)
Heritage NSW	Heritage NSW, Department of Premier and Cabinet
Highly noise affected	As defined in the Interim Construction Noise Guideline (DECC, 2009)
Highly noise intensive works	Works which are defined as annoying under the Interim Construction Noise Guideline (DECC, 2009) including: (a) use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work;

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	<p>(b) grinding metal, concrete or masonry;</p> <p>(c) rock drilling;</p> <p>(d) line drilling;</p> <p>(e) vibratory rolling;</p> <p>(f) bitumen milling or profiling;</p> <p>(g) jackhammering, rock hammering or rock breaking; and</p> <p>(h) impact piling</p>
ICNG	<i>Interim Construction Noise Guideline</i> (DECC, 2009)
Incident	<p>An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.</p> <p><b>Note:</b> "material harm" is defined in this approval</p>
IPIAP	Independent Property Impact Assessment Panel
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act
Landowner	Has the same meaning as "owner" in the <i>Local Government Act 1993</i> and in relation to a building means the owner of the building.
Local road	Any road that is not defined as a classified road under the <i>Roads Act 1993</i>
LOTE	Language Other than English
Low Impact Work	<p>Includes:</p> <p>(a) site establishment work approved under a <b>Site Establishment Management Plan</b>;</p> <p>(b) operation of ancillary facilities if the <b>ER</b> has determined the operational activities will have minimal impact on the environment and community;</p> <p>(c) minor clearing and relocation of native vegetation, as identified in the documents listed in <b>Condition A1</b>;</p> <p>(d) installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and at-property treatments (including the implementation of the NIP);</p> <p>(e) property acquisition adjustment work including installation of property fencing, and relocation and adjustments of utilities to property including water supply and electricity;</p> <p>(f) relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER;</p> <p>(g) archaeological testing under the <i>Code of practice for archaeological investigation of Aboriginal objects in NSW</i> (DECCW, 2010) or archaeological monitoring undertaken in association with (a) – (f) above to ensure that there is no impact on heritage items;</p> <p><del>(h) the relocation of Cape Don and Baragoela historic vessels as permitted subject to Condition E53;</del></p> <p>(i) adjustment of Cammeray Golf Course as identified in <b>Condition E101</b> and relocation of the Cammeray Golf Club dam / harvesting scheme subject to <b>Condition E209</b>;</p>

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	<p>(j) noise barrier / wall between Massey and Amherst Street, Cammeray as identified in <b>Condition E183</b> and <b>Appendix C</b>;</p> <p>(k) maintenance of existing buildings and structures required to facilitate the carrying out of the CSSI; and</p> <p>(l) other activities determined by the <b>ER</b> to have minimal environmental impact which may include but not be limited to construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access.</p> <p>Notwithstanding the following works are <b>not</b> Low Impact Work:</p> <p>(a) where heritage items (excluding those impacted by activities (h), (i) and (j) above), or threatened species or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016 or Environment Protection and Biodiversity Conservation Act 1999) are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with Heritage NSW, <b>EHG</b> or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation); and</p> <p>(b) any night time (hours as defined by the ICNG) work that exceeds noise management levels as identified in <b>Condition E68(b)(i)</b></p> <p>The low impact work described in this definition becomes construction with the approval of a Construction Environmental Management Plan.</p>
Material harm	<p>Is harm that:</p> <p>(a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or</p> <p>(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)</p>
Medium Rigid Vehicle (MRV)	Truck with a gross vehicle mass of more than eight tonnes and two axles
Minister	NSW Minister for Planning and Public Spaces
NATA	National Association of Testing Authorities, Australia
NIP	<i>Noise Insulation Program - Western Harbour Tunnel and Warringah Freeway Upgrade (TfNSW October 2020)</i>
NML	Noise Management Level as defined in the <i>Interim Construction Noise Guideline</i> (DECC, 2009)
Non-compliance	An occurrence, set of circumstances or development that is a breach of this approval

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NO	Nitric oxide
NO <sub>2</sub>	Nitrogen dioxide
NO <sub>x</sub>	Oxides of nitrogen
<b>NPWS</b>	<b>NSW National Parks and Wildlife Service</b>
NSW Heritage Council	Heritage Council of NSW
OEMP	Operational Environmental Management Plan
Operation	<p>The carrying out of the CSSI (whether in full or in part) upon the completion of construction.</p> <p><i><b>Note:</b> There may be overlap between the carrying out of construction and operation if the phases of the development are staged. Commissioning trials of equipment and temporary use of any part of the CSSI are within the definition of construction.</i></p>
PAH	Polycyclic aromatic hydrocarbons
PM <sub>2.5</sub>	Particulate matter (2.5 micrometres or less in diameter)
PM <sub>10</sub>	Particulate matter (10 micrometres or less in diameter)
POEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>
Planning Secretary	Planning Secretary of the Department (or nominee, whether nominated before or after the date on which this approval was granted)
Proponent	The person identified as such in Schedule 1 of this approval and any other person carrying out any part of the CSSI from time to time
Relic	Has the same meaning as the definition of the term in section 4 of the <i>Heritage Act 1977 (NSW)</i>
RAPs	Registered Aboriginal Parties
Relevant council(s)	North Sydney Council, Inner West Council, Willoughby Council, <del>and</del> City of Ryde Council <b>and Penrith City Council</b>
Relevant roads authority	The same meaning as the roads authority defined in the <i>Roads Act 1993 (NSW)</i>
Response to Submissions	The Proponent's response to issues raised in submissions received in relation to the application for approval for the CSSI under the EP&A Act



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Sensitive land user(s)	<p>Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres and passive recreation areas (including outdoor grounds used for teaching). Receivers that may be considered to be sensitive include commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation such as caravan parks and camping grounds, restaurants, office premises, and retail spaces) and industrial premises as identified by the Planning Secretary</p> <p><b>Note:</b> For the purposes of determining appropriate mitigation a multistorey residential flat building must not be counted as one sensitive receiver</p>
SES	NSW State Emergency Services
SMART	Specific, Measurable, Achievable, Realistic, and Timely
<b>TBM</b>	<b>Tunnel Boring Machine</b>
TMC	Transport Management Centre for NSW
Tree	Long lived woody perennial plant greater than (or usually greater than) 3 metres in height with one or relatively few main stems or trunks (AS4373-2007 Pruning of amenity trees)
Unexpected heritage find	An object or place that is discovered during the carrying out of the CSSI and which may be a heritage item but was not identified in the documents listed in <b>Condition A1</b> or suspected to be present. An unexpected heritage find does not include human remains
Useable Open Space	Open Space that is accessible by active transport and greater than 30 metres in width and length at any location
Ventilation outlet	The location and structure from which air within a tunnel is expelled
VOC	Volatile organic compounds
<b>WHT13</b>	<b>Ancillary Facility 13 as described in the documents listed in Condition A1(e)</b>
Work	Any physical work to construct or facilitate the construction of the CSSI, including low impact work, environmental management measures and utility works. However, does not include activities that informs or enables detailed design of the CSSI and generates noise that is no more than 5 dB(A) above the rating background level (RBL) at any sensitive land user(s)

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## SUMMARY OF REPORTING REQUIREMENTS

Reports and notifications that must be provided to the Planning Secretary under the terms of this approval are listed in the table below. Note that under Condition A8 of this approval the Proponent may seek the Planning Secretary's agreement to a later timeframe for submission (other than in relation to the immediate written notification of an incident required under Condition A8).

**Table: Reports and Notifications that must be submitted to the Planning Secretary**

Condition	Report / Notification	Timing <sup>1</sup>	Purpose
<b>Part A – Administrative</b>			
A10 & A14	Staging Report	One month before commencement of construction (or operation if only staged operation is proposed) or the first of the proposed stages	Information
A17	Site Establishment Management Plan	One month before the installation of any ancillary facilities	Approval
A24	Environmental Representative	Must be sought before the commencement of work	Approval
A27(j)	Environmental Representative reports	Within seven days following the end of each month for the duration of the ER's engagement	Information
A29	Acoustic Advisor	Must be sought before the commencement of work	Approval
A34(h)(v)	Monthly Noise and Vibration Report	Within seven days following the end of each month for the duration of the AA's engagement	Information
A35 & A36	Notification of commencement	One month before the commencement of construction and operation	Information
A37	Independent Auditors	Prior to the commencement of an <b>Independent Audit</b>	Approval
A41	Independent Audit Reports	within two months of undertaking the independent audit site inspection	Information
A43	Written notification of incident	Within seven days after the Proponent becomes aware of an incident.	Information
A45	Non-Compliance Notification	Within seven days after the Proponent becomes aware of any non-compliance	Information
<b>Part B - Communication Information and Reporting</b>			

<sup>1</sup> Where a project is staged, all required approvals must be obtained before the commencement of the relevant stage.

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Condition	Report / Notification	Timing <sup>1</sup>	Purpose
B3	Community Communication Strategy	One month before the commencement of construction	Approval
B7	Complaints management system	Before the commencement of any work	Information
B10	Complaints Register	upon request from the Planning Secretary	Information
B11	Community Complaints Mediator	One month before the commencement of work	Approval
<b>Part C - Construction Environmental Management</b>			
C3	CEMP	One month before the commencement of construction	Approval
C9	CEMP Sub-plans	One month before the commencement of construction	Approval
C18	Construction Monitoring Programs	One month before the commencement of construction	Approval
C21	Construction Monitoring Report	As specified in Construction Monitoring Programs	Information
<b>Part D - Operation Environmental Management</b>			
D3	OEMP or EMS	One month before the commencement of operation	Information
D5	Operational Monitoring Report	One month before the commencement of operation	Information
D8	Operational Groundwater Monitoring Review	Within two weeks of review	Information
D9	The Operational Monitoring Program(s)	Three months prior to the commencement of operation	Approval
D12	Operational Monitoring Reports	At the frequency identified in the relevant Operational Monitoring Program	Information
<b>Part E – Key Issues</b>			
<b>Air Quality</b>			
E2	Air Quality Community Consultative Committee	Prior to finalising the detailed design of the CSSI and establishing the ambient air quality monitoring stations	Approval

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Condition	Report / Notification	Timing <sup>1</sup>	Purpose
E3	Air Quality Independent Reviewer appointment and engagement	Prior to the finalisation of detailed design	Approval
E13	Notification of exceedances of tunnel air quality limits	As early as possible and within 24 hours of the recorded event	Information
E14	Tunnel Air Quality Management Systems Effectiveness Report	No later than 12 months following the commencement of operation and within one month of any request made by the Planning Secretary	Information
E20	Tunnel Ventilation and Traffic Protocol	Prior to operation	information
E23	Notification of Above Emission Limit Recording	As soon as possible and within 24 hours of the recording	Information
E24	Report on Above-Emission Limit Recording	Within one month of any notification of Above-Emission Limit Recording	Information
E27	Ambient air quality monitoring station locations	Prior to installation of the monitoring stations	Information
E30	Notification of Above-Maximum Concentration Recording	As soon as possible and within 24 hours of the recording	Information
E31	Report on Above-Maximum Concentration Recording	Within one month of any notification of Above-Maximum Concentration Recording	Information
E35	Air Quality Reporting System	15 months of commencing operation	Information
<b>Biodiversity</b>			
E40	Credit Retirement Report	One month of receiving the report	Information
E41	Microbat Management Plan	Prior to work that impacts microbats	Approval
E44	Microbat Management Plan Offset Report	One month of receiving the report	Information
<b>Heritage</b>			

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Condition	Report / Notification	Timing <sup>1</sup>	Purpose
E58	Archaeological Research Design and Excavation Methodology	Prior to the commencement of construction that has the potential to impact upon areas of archaeological significance	Information
E62	Final Excavation Report	12 months after the completion of the work	Information
E63	Unexpected Heritage Finds and Humans Remains Procedure	One month before commencement of construction	Information
<b>Noise and Vibration</b>			
E68(a)(ii)	Safety and Emergencies	On becoming aware of the need for emergency work	Information
E69	Out-of-Hours Work Protocol	Before the commencement of out-of-hours works	Approval
E75	Construction Noise and Vibration Impact Statements	upon request	Information
E83	Out-of-Hours Works – Community Consultation on Respite	Following consultation with the community	Information
E84	Noise Insulation Program	Should the NIP be progressively updated, the updated version must be provided	Information
E89	Operational Noise Review	Within 12 months of the commencement of construction	Information
E90	Report on non-implementation of operational noise mitigation measures	within six months of submitting the ONR	Information
E93	Operational Noise Compliance Report	Within 60 days of completing the operational monitoring	Information
E99	Blast Management Strategy	One month before the commencement of blasting	Information
<b>Property Impacts</b>			
E111	Independent Property Impact Assessment Panel	Prior to the commencement of any works which may potentially result in property impacts	Information
<b>Soils</b>			

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Condition	Report / Notification	Timing <sup>1</sup>	Purpose
E116	Detailed Site Investigation Report	Following the completion of Detailed Site Investigations	Information
0	Remediation Action Plan	Prior to undertaking remediation	Information
E121	Site Audit Statement(s)	One month before the commencement of operation	Information
E121	Site Audit Report(s)	One month before the commencement of operation	Information
E123	Unexpected Finds Procedure for Contamination	Before the commencement of work	Information
<b>Sustainability</b>			
E126	Sustainability Strategy	One month before the commencement of construction	Information
E127	Water Reuse Strategy	Prior to construction and operation commencing	Information
<b>Traffic and Transport</b>			
<b>E131(e)</b>	<del>Access the Yurulbin Point ancillary facility (WHT4)</del>	<del>Should access to this site be required for extenuating circumstances</del>	<b>Approval</b>
E132 & E133	Use of local roads for spoil haulage	Before the use of the local roads	Approval
E135	Heavy vehicle monitoring	Upon request	Information
E140	Construction Parking and Access Strategy	One month before the commencement of any works that impact existing parking	Approval
E142	Reinstatement of Car Parking on Alfred Street North	Six months of construction commencing	Approval
E145	Road Safety Audits	Upon request of the Planning Secretary	Information
E147	Road Network Performance Plan	Six months prior to the commencement of operation of the full CSSI	Information
E148	Operational Road Network Performance Review	Within 60 days of completion of the Review	Information
E153	Public Transport Review	Six months prior to the commencement of operation	Information
<b>Place, Design and Visual Amenity</b>			

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Condition	Report / Notification	Timing <sup>1</sup>	Purpose
E179	Place, Design and Landscape Plan	One month before the commencement of permanent built work	Approval
E187	Landscape Strategy Report	No later than nine months following the commencement of operation	Information
E192	Ongoing maintenance requirements	The date of transfer of the asset(s) to the relevant authority	Information
E195	Active Transport Network Review	Within 12 months of commencement of construction	Approval
E196	Delivery of Active Transport Network Review Outcomes	Prior to the operation of the CSSI	Approval
<b>Water</b>			
E219	Groundwater Monitoring Report	Prior to finalising of tunnel design	Information
E220	Updated Groundwater Modelling Report	Once 24 months of groundwater monitoring data is available	Information
E223	Stormwater Drainage Report	one month prior to the subject works/discharges commencing	Information

**Note:** *This Table is not a condition of this approval. If there is an inconsistency between a requirement in this Table and a requirement in a condition, the requirement of the condition prevails.*

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## SCHEDULE 2

### PART A

#### ADMINISTRATIVE CONDITIONS

##### GENERAL

- A1. The Proponent shall carry out the CSSI in accordance with the terms of this approval and generally in accordance with the:
- (a) Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement – Volumes 1A-B and 2A-J (dated January 2020) (the EIS); and
  - (b) Western Harbour Tunnel and Warringah Freeway Upgrade Response to Submissions Report (dated September 2020) (the RtS); *Additional Crossing of the Clarence River at Grafton Submissions Report Main Volume and Appendices*, prepared by Roads and Maritime Services, dated October 2014;
  - (c) **Western Harbour Tunnel and Warringah Freeway Upgrade Wicks Road Construction Support Site – Modification Report (dated October 2022) (Modification 1 Report);**
  - (d) **Western Harbour Tunnel and Warringah Freeway Upgrade Modification – Wicks Road Construction Support Site Submissions Report (dated May 2023);**
  - (e) **Western Harbour Tunnel and Warringah Freeway Upgrade Modification 2 – TBM Construction Methodology (dated July 2023); and**
  - (f) **Western Harbour Tunnel and Warringah Freeway Upgrade Modification 2 - TBM Construction Methodology Submissions Report (dated October 2023).**
  - (g) **Emu Plains Flood Impact and Risk Assessment (dated 12 January 2024)**
- A2. The CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in **Condition A1** unless otherwise specified in, or required under, this approval.
- A3. In the event of an inconsistency between:
- (a) the terms of this approval and any document listed in **Condition A1** inclusive, the terms of this approval will prevail to the extent of the inconsistency; and
  - (b) any document listed in **Condition A1** inclusive, the most recent document will prevail 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.*
- A4. The Proponent must comply with all written requirements or directions of the Planning Secretary, including in relation to:
- (a) the environmental performance of the CSSI;
  - (b) any document or correspondence in relation to the CSSI;
  - (c) any notification given to the Planning Secretary under the terms of this approval;
  - (d) any audit of the construction or operation of the CSSI;
  - (e) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval);
  - (f) the carrying out of any additional monitoring or mitigation measures; and



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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. Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:
- (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;
  - (b) a log of the dates of engagement or attempted engagement with the identified party; (c) documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations;
  - (d) outline of the issues raised by the identified party and how they have been addressed; and
  - (e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.
- A6. This approval lapses five years after the date on which it is granted, unless work has physically commenced on or before that date.
- A7. References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Australian Standards or policies in the form they are in as at the date of this approval.
- A8. Any document that must be submitted or action taken within a timeframe specified in or under the terms of this approval may be submitted or undertaken within a later timeframe agreed with the Planning Secretary. This condition does not apply to the written notification required in respect of an incident under **Conditions A43 and A45**.

### Noise Insulation Program

- A9. The implementation of the Noise Insulation Program (NIP) does not trigger the following **Conditions A24, A30, B1, and B11**, until such time that construction commences.

## STAGING

### Staging the delivery of the CSSI

- A10. 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 may be) must be prepared and submitted to the Planning Secretary for information. The **Staging Report** must be endorsed by the **ER** and then submitted to the Planning Secretary no later than one month before the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one month before the commencement of operation of the first of the proposed stages of operation).
- A11. 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;
  - (b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including details of work and other activities to be carried

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- out in each stage and the general timing of when operation of each stage will commence and finish (if relevant);
- (c) specify how compliance with conditions will be achieved across and between each of the stages of the CSSI; and
  - (d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.
- A12. The CSSI must be staged in accordance with the **Staging Report**, and submitted for information to the Planning Secretary.
- A13. Where staging is proposed, the terms of this approval that apply or are relevant to the work or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.
- A14. Where changes are proposed to the staging of construction or operation, a revised Staging Report must be prepared, endorsed by the **ER** and submitted to the Planning Secretary for information no later than one month prior to the proposed change in the staging.

### **Staging, Combining and Updating Strategies, Plans or Programs**

- A15. With the approval of the Planning Secretary, the Proponent may submit any strategies, plans or programs required by this approval on a progressive basis.

#### **Notes:**

1. While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and
2. If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.

## **ANCILLARY FACILITIES**

### **Ancillary facilities**

- A16. Ancillary facilities that are not identified by description and location in the documents listed in **Condition A1** can only be established and used in each case if:
- (a) they are located within or immediately adjacent to the construction boundary; and
  - (b) they are not located next to sensitive land user(s) (including where an access road is between the facility and the receiver), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and
  - (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
  - (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.

## **SITE ESTABLISHMENT WORK**

### **Ancillary Site Establishment Management Plan**

- A17. Before establishment of any construction ancillary facility (excluding minor construction ancillary facilities determined by the **ER** to have minimal environmental impact and those

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established under **Condition A19**), the Proponent must prepare an **Ancillary Site Establishment Management Plan** which outlines the environmental management practices and procedures to be implemented for the establishment of the construction ancillary facilities. The **Ancillary Site Establishment Management Plan** must be prepared in consultation with the relevant council and government agencies. The Plan must be submitted to the Planning Secretary for approval one month before the establishment of any construction ancillary facilities. The **Ancillary Site Establishment Management Plan** must detail the management of the construction ancillary facilities and include:

- (a) a description of activities to be undertaken during establishment of the construction ancillary facility (including scheduling and duration of work to be undertaken at the site);
- (b) figures illustrating the proposed operational site layout and the location of the closest sensitive land user(s);
- (c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment work;
- (d) details of how the site establishment activities described in subsection (a) of this condition will be carried out to:
  - (i) meet the performance outcomes stated in the documents listed in **Condition A1**, and
  - (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and
- (e) a program for monitoring the performance outcomes, including a program for construction noise monitoring. Nothing in this condition prevents the Proponent from preparing individual Ancillary Site Establishment Management Plans for each construction ancillary facility.

Nothing in this condition prevents the Proponent from preparing individual **Ancillary Site Establishment Management Plans** for each construction ancillary facility.

### Use of Construction Ancillary Facilities

A18. The use of a construction ancillary facility for construction must not commence until the **CEMP** required by **Condition C1**, relevant **CEMP Sub-plans** required by **Condition C4** and relevant **Construction Monitoring Programs** required by **Condition C11** have been approved by the Planning Secretary.

**A18A. Once an ancillary facility is no longer required for the CSSI, the land must be returned to its pre-existing or better condition within six months of the site being decommissioned or within two years of operation (whichever is the earliest), unless the land is subject to another requirement of this approval or another section of the EP&A Act.**

### Minor Construction Ancillary Facilities

A19. Lunch sheds, office sheds, portable toilet facilities, car parking, material storage, and the like, can be established and used where they have been assessed in the documents listed in **Condition A1** or satisfy the following criteria:

- (a) are located within or adjacent to the construction boundary; and
- (b) have been assessed by the **ER** to have –
  - (i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the *Interim Construction Noise Guideline* (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and

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

### Boundary screening

A20. Boundary screening must be erected between ancillary facilities and are adjacent to sensitive land user(s) for the duration of the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners.

All Boundary screening must minimise visual impacts on adjacent sensitive land user(s).

### INDEPENDENT APPOINTMENTS

A21. All **Independent Appointments** required by this approval must hold current membership of a relevant professional body, unless otherwise agreed by the Planning Secretary.

A22. The Planning Secretary may at any time commission an audit of how an **Independent Appointment** has exercised their functions. The Proponent must:

- (a) facilitate and assist the Planning Secretary in any such audit; and
- (b) make it a term of their engagement of an Independent Appointment that the Independent Appointment facilitate and assist the Planning Secretary in any such audit.

A23. The Planning Secretary may withdraw its approval of an **Independent Appointment** should they consider the Independent Appointment has not exercised their functions in accordance with this approval.

**Note: Conditions A22 and A23 apply to all Independent Appointments including the ER, AA, Community Complaints Mediator and the AQIR.**

### ENVIRONMENT REPRESENTATIVE

A24. Work must not commence until an **Environmental Representative (ER)** has been nominated by the Proponent and approved by the Planning Secretary.

A25. The proposed **ER** must be a suitably qualified and experienced person(s) who was not involved in the preparation of the documents listed in **Condition A1**, and is independent from the design and construction personnel for the CSSI and those involved in the delivery of it.

A26. The Proponent may engage more than one **ER** for the CSSI, in which case the functions to be exercised by an **ER** under the terms of this approval may be carried out by any **ER** that is approved by the Planning Secretary for the purposes of the CSSI.

A27. For the duration of the work until the commencement of operation, or as agreed with the Planning Secretary, the approved **ER** must:

- (a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI;
- (b) consider and inform the Planning Secretary on matters specified in the terms of this approval;

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- (c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community;
- (d) review documents identified in **Conditions A10, A17, C1, C4 and C11** and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so:
  - (i) make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or
  - (ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary/Department);
- (e) regularly monitor the implementation of the documents listed in **Conditions A10, A17, C1, C4 and C11** to ensure implementation is being carried out in accordance with the document and the terms of this approval;
- (f) as may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under **Condition A38** of this approval;
- (g) as may be requested by the Planning Secretary, assist in the resolution of community complaints;
- (h) consider or assess the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities as required by **Condition A19** of this approval; (i) consider any minor amendments to be made to the **Ancillary Site Establishment Management Plan, CEMP, CEMP Sub-plans** and monitoring programs without increasing impacts to nearby receivers or that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP Sub-plans and monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval;
- (j) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, 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 days following the end of each month for the duration of the ER's engagement for the CSSI, or as otherwise agreed by the Planning Secretary; and
- (k) assess the impacts of activities as required by the Low Impact Works definition.

A28. The Proponent must provide the **ER** with all documentation requested by the **ER** in order for the **ER** to perform their functions specified in **Condition A27** (including preparation of the **ER** monthly report), as well as:

- (a) the complaints register (to be provided on a weekly basis or as requested); and
- (b) a copy of any assessment carried out by the Proponent of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work).

### ACOUSTICS ADVISOR

A29. A suitably qualified and experienced **Acoustics Advisor(s) (AA)** in noise and vibration management, who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of work (as required by

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**Condition A32)** and for no less than six months following completion of construction of the CSSI.

A30. Work must not commence until an **AA** has been nominated by the Proponent and approved by the Planning Secretary.

A31. The Proponent must cooperate with the **AA** by:

- (a) providing access to noise and vibration monitoring activities as they take place;
- (b) providing for review of noise and vibration plans, assessments, monitoring reports, data and analyses undertaken; and
- (c) considering any recommendations to improve practices and demonstrating, to the satisfaction of the **AA**, why any recommendation is not adopted.

A32. The Proponent may nominate additional suitably qualified and experienced persons to assist the lead **AA** for the Planning Secretary's approval.

A33. Any activities generating noise in excess of 5 dB(A) above the 'Noise affected' Noise Management Levels (NMLs) derived from the *Interim Construction Noise Guideline* (DECC, 2009) (ICNG) must not commence until an **AA**, nominated under **Condition A29** of this approval, has been approved by the Planning Secretary.

A34. The approved **AA** must:

- (a) receive and respond to communication from the Planning Secretary in relation to the performance of the CSSI in relation to noise and vibration;
- (b) consider and inform the Planning Secretary on matters specified in the terms of this approval relating to noise and vibration;
- (c) consider and recommend, to the Proponent, improvements that may be made to avoid or minimise adverse noise and vibration impacts;
- (d) review all proposed night-time works to determine if sleep disturbance would occur and recommend measures to avoid sleep disturbance or appropriate additional alternative mitigation measures;
- (e) review all noise and vibration documents required to be prepared under the terms of this approval and, should they be consistent with the terms of this approval, endorse them before submission to the Planning Secretary (if required to be submitted to the Planning Secretary) or before implementation (if not required to be submitted to the Planning Secretary);
- (f) regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of this approval to ensure implementation is in accordance with what is stated in the document and the terms of this approval;
- (g) notify the Planning Secretary of noise and vibration incidents in accordance with **Conditions A43** and **A45** of this approval;
- (h) in conjunction with the ER, the AA must:
  - (i) as may be requested by the Planning Secretary or **Community Complaints Mediator** (required by **Condition B12**), help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits,
  - (ii) in the event that conflict arises between the Proponent and the community in relation to the noise and vibration performance of the CSSI, follow the procedure in the **Community Communication Strategy** approved under **Condition B2** to attempt to resolve the conflict, and if it cannot be resolved, notify the Planning Secretary,

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- (iii) consider relevant minor amendments made to the **Ancillary Site Establishment Management Plan, CEMP**, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the terms of this approval and the management plans and monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, endorse the amendment, (this does not include any modifications to the terms of this approval),
- (iv) review the noise impacts of minor construction ancillary facilities, and
- (v) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, a **Monthly Noise and Vibration Report** detailing the **AA**'s actions and decisions on matters for which the **AA** was responsible in the preceding month. The **Monthly Noise and Vibration Report** must be submitted within seven days following the end of each month for the duration of the **AA**'s engagement for the CSSI, or as otherwise agreed by the Planning Secretary.

### NOTIFICATION OF COMMENCEMENT

- A35. The Department must be notified in writing of the dates of commencement of construction and operation at least one month before those dates.
- A36. If the construction or operation of the CSSI is to be staged, the Department must be notified in writing at least one month before the commencement of each stage, of the date of the commencement of that stage.

### AUDITING

- A37. Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an **Independent Audit**. This condition does not apply to the engagement of auditors required under **Condition E145**.
- A38. **Independent Audits** of the CSSI must be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements* (DPIE, 2020).
- A39. The Planning Secretary may require the initial and subsequent **Independent Audits** to be undertaken at different times to those specified above, upon giving at least four weeks notice (or timing as stipulated by the Planning Secretary) to the Proponent of the date upon which the audit must be commenced.
- A40. In accordance with the specific requirements in the *Independent Audit Post Approval Requirements* (DPIE, 2020), the Proponent must:
  - (a) review and respond to each **Independent Audit Report** prepared under **Condition A38** or **Condition A39**;
  - (b) submit the response to the Planning Secretary; and
  - (c) make each **Independent Audit Report** and response to it publicly available 60 days after submission to the Planning Secretary, or as otherwise agreed by the Planning Secretary.
- A41. **Independent Audit Reports** and the Proponent's response to audit findings must be submitted to the Planning Secretary within two months of undertaking the independent



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audit site inspection as outlined in the *Independent Audit Post Approval Requirements* (DPIE, 2020).

- A42. Notwithstanding the requirements of the *Independent Audit Post Approval Requirements* (DPIE, 2020), the Planning Secretary may approve a request for ongoing independent operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that independent operational audits have demonstrated operational compliance.

## INCIDENT AND NON-COMPLIANCE NOTIFICATION AND REPORTING

### Incident Notification, Reporting and Response

- A43. The Planning Secretary must be notified via the Major Projects Website immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and nature of the incident.

- A44. Subsequent notification must be given and reports submitted in accordance with the requirements set out in **APPENDIX A**.

### Non-Compliance Notification

- A45. The Planning Secretary must be notified via the Major Projects Website within seven days after the Proponent becomes aware of any non-compliance. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one), set out the condition/s that is non-compliant, the nature of the breach; the reason for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

- A46. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

## IDENTIFICATION OF WORKFORCE AND COMPOUNDS

- A47. All heavy vehicles used for spoil haulage must be clearly marked on the sides and rear with the project name and CSSI application number to enable immediate identification by a person viewing the heavy vehicle. Details of the project identification markings must be submitted to the Planning Secretary for approval prior to the heavy vehicles used for spoil haulage being utilised for the CSSI.

- A48. The CSSI name; application number; telephone number, postal address and email address required under **Condition B8** of this approval must be made available on site boundary fencing / hoarding at each ancillary facility before the commencement of construction. This information must also be provided on the website required under **Condition B15** of this approval.



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## PART B

### COMMUNITY INFORMATION AND REPORTING

#### COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

##### Community Communication Strategy

B1 A **Community Communication Strategy** must be prepared to provide mechanisms to facilitate communication about construction and operation of the CSSI with:

- (a) the community (including adjoining affected landowners and businesses, and others directly impacted by the CSSI); and
- (b) the relevant councils, EPA, **EHG**, NSW Health, Heritage NSW, **DPE Water**, and Sydney Water, as applicable.

The Strategy must address who (the Proponent, Independent Appointments and/or construction contractor) will engage with the community, relevant councils and agencies, how they will engage and the timing of engagements.

B2 The **Community Communication Strategy** must:

- (a) identify people, organisations, councils and agencies to be consulted during the design and work phases;
- (b) identify details of the community demographics;
- (c) set out procedures and mechanisms for the regular distribution of accessible information including to LOTE and CALD and vulnerable communities about or relevant to the CSSI;
- (d) identify opportunities for education within the community about construction sites;
- (e) detail the measures for advising the community in advance of upcoming construction including upcoming out-of-hours work as required by **Condition E83** and blasting activities
- (f) provide for the formation of issue or location-based community forums that focus on key environmental management issues of concern to the relevant community(ies) for the CSSI;
- (g) detail the role and responsibilities of the **Public Liaison Officer(s)** engaged under **Condition B6**; and
- (h) set out procedures and mechanisms:
  - (i) through which the community can discuss or provide feedback to the Proponent 24 hours a day, seven days per week;
  - (ii) through which the Proponent will respond to enquiries or feedback from the community; and
  - (iii) to resolve any issues and mediate any disputes that may arise in relation to the environmental management and delivery of the CSSI, including disputes regarding rectification or compensation.

B3 The **Community Communication Strategy** must be submitted to the Planning Secretary and approved prior to the commencement of construction, unless otherwise agreed by the Planning Secretary.

B4 Construction for the purposes of the CSSI must not commence until the **Community Communication Strategy** has been approved by the Planning Secretary.

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- B5 The **Community Communication Strategy**, as approved by the Planning Secretary, must be implemented for the duration of the work and for 12 months following the completion of construction.

### Public Liaison Officer

- B6 A **Public Liaison Officer** must be appointed for construction ancillary facilities and for utility work to assist the public with questions and complaints they may have at any time during construction.

The **Public Liaison Officer** must be available at all times during the operation of ancillary facilities and or when utility work is occurring.

### COMPLAINTS MANAGEMENT SYSTEM

- B7 A **Complaints Management System** must be prepared and implemented before the commencement of any Work and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the CSSI.

- B8 The following information must be available to facilitate community enquiries and manage complaints one month before the commencement of work and for 12 months following the completion of construction:

- (a) a 24- hour telephone number for the registration of complaints and enquiries about the CSSI;
- (b) a postal address to which written complaints and enquires may be sent;
- (c) an email address to which electronic complaints and enquiries may be transmitted; and
- (d) a mediation system for complaints unable to be resolved.

This information must be accessible to all in the community regardless of age, ethnicity, disability or literacy level.

- B9 A **Complaints Register** must be maintained recording information on all complaints received about the CSSI during the carrying out of any work and for a minimum of 12 months following the completion of construction. The **Complaints Register** must record the:

- (a) number of complaints received;
- (b) the date and time of the complaint;
- (c) the method by which the complaint was made;
- (d) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- (e) nature of the complaint;
- (f) means by which the complaint was addressed and whether resolution was reached, with or without mediation; and
- (g) if no action was taken, the reason(s) why no action was taken.

Complainants must be advised that the **Complaints Register** may be forwarded to Government agencies to allow them to undertake their regulatory duties.

- B10 The **Complaints Register** must be provided to the Planning Secretary upon request, within the timeframe stated in the request.

- B11 A **Community Complaints Mediator** that is independent of the design and construction personnel must be nominated by the Proponent, approved by the Planning Secretary

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and engaged during work associated with the CSSI. The nomination of the **Community Complaints Mediator** must be submitted to the Planning Secretary for approval within one month before the commencement of work.

- B12 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 B7** 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.
- B13 The **Community Complaints Mediator** will:
- (a) review any unresolved disputes if the procedures and mechanisms under Condition B2(h) (iii) do not satisfactorily address complaints; and
  - (b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes.
- B14 The **Community Complaints Mediator** will not act before the Complaints Management System required by **Condition B7** has been executed for 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 this CSSI.

### PROVISION OF ELECTRONIC INFORMATION

- B15 A website or webpage providing information in relation to the CSSI must be established before commencement of work and be maintained for the duration of construction, and for a minimum of 24 months following the completion of construction. The following up-to-date information (excluding confidential, private, commercial information or any other information that the Planning Secretary has approved to be excluded) must be published before the relevant work commences and maintained on the website or dedicated pages including:
- (a) information on the current implementation status of the CSSI;
  - (b) a copy of the documents listed in Condition A1, and any documentation relating to any modifications made to the CSSI or the terms of this approval;
  - (c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval;
  - (d) a copy of each statutory approval, licence or permit required and obtained in relation to the CSSI;
  - (e) a current copy of the final version of each document required under the terms of this approval; and
  - (f) a copy of the audit reports required under this approval.

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Where the information / document relates to a particular work or is required to be implemented, it must be published before the commencement of the relevant work to which it relates or before its implementation.

All information required in this condition is to be provided on the Proponent's website, ordered in a logical sequence and easy to navigate.

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## PART C

### CONSTRUCTION ENVIRONMENTAL MANAGEMENT

#### CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

- C1 A **Construction Environmental Management Plan (CEMP)** must be prepared having regard to the *Environmental Management Plan Guideline for Infrastructure Projects* (Department of Planning and Environment, 2020). The CEMP must detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in **Condition A1** will be implemented and achieved during construction.
- C2 The **CEMP** must provide:
- (a) a description of activities to be undertaken during construction (including the scheduling of construction);
  - (b) details of environmental policies, guidelines and principles to be followed in the construction of the CSSI;
  - (c) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the CSSI;
  - (d) details of how the activities described in subsection (a) of this condition will be carried out to:
    - (i) meet the performance outcomes stated in the documents listed in **Condition A1**; and
    - (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition;
  - (e) an inspection program detailing the activities to be inspected and frequency of inspections;
  - (f) a protocol for managing and reporting any:
    - (i) incidents; and
    - (ii) non-compliances with this approval or statutory requirements;
  - (g) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;
  - (h) a list of all the CEMP Sub-plans required in respect of construction, as set out in Condition C4. Where staged construction of the CSSI is proposed, the CEMP must also identify which CEMP Sub-plan applies to each of the proposed stages of construction;
  - (i) a description of the roles and environmental responsibilities for relevant employees and their professional / organisational relationship with the ER;
  - (j) for training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval;
  - (k) for periodic review and update of the CEMP and all associated plans and programs; and
  - (l) the outcomes of consultation with government agencies in accordance with Condition A5.
- C3 The **CEMP** must be endorsed by the **ER** and then submitted to the Planning Secretary for approval no later than one month before the commencement of construction, or where construction is staged no later than one month before the commencement of that stage.

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- C4 The following **CEMP Sub-plans** must be prepared in consultation with the relevant government agencies identified for each **CEMP Sub-plan**. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant **CEMP Sub-plan**, including copies of all correspondence from those agencies as required by **Condition A5**.

	Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan
(a)	Traffic, transport and access	Relevant council(s)
(b)	Noise and vibration	NSW Health, relevant council(s)
(c)	Flora and Fauna	DPI Fisheries, <b>DPE Water, EHG</b> , and relevant council(s)
(d)	Air quality	NSW Health, and relevant council(s)
(e)	Soil and surface water	<b>DPE Water, EHG</b> , EPA, Sydney Water (if Sydney Water's assets are affected) and relevant council(s)
(f)	Groundwater	<b>DPE Water, EHG</b> , EPA, Sydney Water (where it is proposed to discharge groundwater into Sydney Water's assets) and relevant council(s)
(g)	Maritime Heritage	Heritage NSW and relevant council(s)
(h)	Non-Aboriginal Heritage	Heritage NSW and relevant council(s)
(i)	Aboriginal Cultural Heritage	Heritage NSW
<del>(j)</del>	<del>Dredging and Disposal Management Plan</del>	<del>EPA, DPI Fisheries, Port Authority of NSW (including Harbour Master)</del>

- C5 The **CEMP Sub-plans** must state how:

- (a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;
- (b) the mitigation measures identified in the documents listed in Condition A1 will be implemented;
- (c) the relevant terms of this approval will be complied with; and
- (d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.

- C6 The **Flora and Fauna Management CEMP Sub-Plan** must include, but not be limited to:

- ~~(a) Deleted~~
- ~~(b) Deleted~~
- ~~(c) Deleted~~
- ~~(d) Deleted~~
- (e) details for undertaking pre-clearing/demolition inspections for native fauna including threatened species by a suitably qualified ecologist, of any vegetation to be cleared and any buildings or structures identified as potential roosting habitat for microbats that are to be demolished or refurbished; methods and procedures for welfare and relocation of displaced fauna; and management/offset measures;

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- (f) details of a dewatering plan of the stormwater harvesting storage facility / dam at Cammeray Golf Course including:
  - i. a methodology of relocating native fauna species known to inhabit and/or use the dam;
  - ii. the location and suitability of the proposed relocation sites; and
  - iii. any potential impacts of relocating the fauna to the relocation sites; and
- (g) **details of the measures to minimise disturbance to and monitor the Powerful Owl (*Ninox strenua*) in Lane Cove National Park during construction and operation of the proposed Wicks Road Construction Support Site (Mod 1), as described in Condition A1. The measures and monitoring requirements must be developed by an appropriately qualified ecologist with experience in Powerful Owl in consultation with BirdLife Australia, EHG and NPWS, and monitoring data shared with BirdLife Australia, EHG and NPWS and the Planning Secretary when requested.**

C7 The **Maritime Heritage Management CEMP Sub-plan** must:

- (a) be prepared in consultation with a suitably qualified and experienced maritime archaeologist;
- (b) detail artefact management procedures;
- (c) outline relevant work method requirements and maritime heritage inductions tailored for each type of work activity **such as dredging or piling**;
- (d) identify exclusion zones, archival recording requirements, baseline and periodic monitoring protocols (including before and during construction), and final site inspections within three months of completion of works for the following maritime heritage sites:
  - (i) **Deleted**
  - (ii) **Deleted**
  - (iii) **Deleted**
  - (iv) Collapsed wharf, BP site, Berrys Bay; **and**
  - (v) **Deleted**
- (e) detail requirements for any mitigation, recovery or archaeological excavations.

Should further assessment determine that the heritage sites identified in (d) of this condition are not heritage item(s), the requirements of **Condition C7(d)** do not apply.

**C8 Deleted**

C9 The **CEMP Sub-plans** must be submitted to the Planning Secretary for approval along with, or subsequent to, the submission of the **CEMP** but in any event, no later than one month before construction.

C10 Construction must not commence until the **CEMP** and all **CEMP Sub-plans** have been approved, unless otherwise agreed by the Planning Secretary. The **CEMP** and **CEMP Sub-plans**, as approved by the Planning Secretary, including any minor amendments approved by the **ER** must be implemented for the duration of construction. Where construction of the CSSI is staged, construction of a stage must not commence until the **CEMP** and sub-plans for that stage have been endorsed by the **ER** and approved by the Planning Secretary.

### CONSTRUCTION MONITORING PROGRAMS

C11 The following **Construction Monitoring Programs** must be prepared in consultation with the relevant government agencies identified for each to compare actual

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performance of construction of the CSSI against the performance predicted in the documents listed in **Condition A1** or in the **CEMP**:

	<b>Required Construction Monitoring Programs</b>	<b>Relevant government agencies to be consulted for each Construction Monitoring Program</b>
(a)	Noise and Vibration Monitoring Program	EPA
(b)	Air Quality <b>(including Odour)</b> Monitoring	EPA
(c)	Surface Water Monitoring Program	<b>DPE Water</b> , (Sydney Water if any Sydney Water assets are impacted), EPA, <b>EHG (as it relates to Wicks Road Construction Support Site [Mod 1], as described in Condition A1).</b>
(d)	Groundwater Monitoring Program	<b>DPE Water</b> , EPA
<b>(e)</b>	<b>Marine Monitoring Program</b>	<b>DPI Fisheries, EPA</b>
<b>(f)</b>	<b>Dredging Monitoring Program</b>	<b>DPI Fisheries, EPA</b>

C12 Each **Construction Monitoring Program** must provide:

- (a) details of baseline data available;
- (b) details of baseline data to be obtained and when;
- (c) details of all monitoring of the project to be undertaken;
- (d) the parameters of the project to be monitored;
- (e) the frequency of monitoring to be undertaken;
- (f) the location of monitoring;
- (g) the reporting of monitoring results and analysis results against relevant criteria;
- (h) details of the methods that will be used to analyse the monitoring data;
- (i) procedures to identify and implement additional mitigation measures where the results of the monitoring indicate unacceptable project impacts;
- (j) a consideration of SMART principles;
- (k) any consultation to be undertaken in relation to the monitoring programs; and
- (l) any specific requirements as required by Conditions C13 to **C16 C14**.

C13 The **Noise and Vibration Monitoring Program** must include:

- (a) noise and vibration monitoring locations, **including for ground borne noise and vibration at Birchgrove and Waverton in the vicinity of the launch and receival chambers**, determined in consultation with the AA to confirm construction noise and vibration levels;
- (b) for the purposes of (a), noise monitoring must be undertaken during the day, evening and night-time periods and within the first month of work as well as throughout the construction period and cover the range of activities being undertaken at the sites;
- (c) a protocol for reviewing the implemented management and mitigation measures, based on the monitoring results, to confirm they are consistent with the CEMP Subplan (Condition C4b), and to identify any additional management and mitigation measures that must be implemented; and
- (d) a process to undertake real time noise and vibration monitoring. The results of the monitoring must be readily available to the construction team, Proponent, ER



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and AA. The Planning Secretary and EPA must be provided with access to the results on request.

C14 The **Groundwater Monitoring Program** must include:

- (a) results from existing monitoring bores and from additional monitoring bores required following a review of the monitoring bore network, with the review based on actual results of existing monitoring and groundwater modelling findings in relation to the final tunnel detailed design;
- (b) daily measurement of the amount of water discharged from the water treatment plants;
- (c) water quality testing of the water discharged from treatment plants;
- (d) monitoring of groundwater levels in aquifers adjacent to the tunnel alignment;
- (e) monitoring of groundwater levels, electrical conductivity and temperature in key locations between saline water bodies and the tunnel (including beneath high risk sites for contamination);
- (f) measures to record or otherwise estimate and report groundwater inflows into the tunnels during their construction;
- (g) methods for providing the data collected under (a) and (b) to Sydney Water where discharges are directed to their assets; and
- (h) a method for providing the groundwater monitoring data to **DPE Water** every three months during construction of the tunnels and portals.

*Note: With regards to monitoring data to be provided to **DPE Water**, the format of the dataset must be both in a tabulated and electronic quality-controlled data (csv, excel) ready to use format.*

C15 Deleted

C16 Deleted

C17 The **Construction Monitoring Programs** must be developed in consultation with relevant government agencies as identified in **Condition C11**. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant **Construction Monitoring Programs**, including copies of all correspondence from those agencies as required by **Condition A5**.

C18 The **Construction Monitoring Programs** must be endorsed by the **ER** and then submitted to the Planning Secretary for approval at least one month before the commencement of construction.

C19 Unless otherwise agreed with the Planning Secretary, construction must not commence until all of the relevant **Construction Monitoring Programs** have been approved by the Planning Secretary, and all relevant baseline data for the specific construction activity has been collected.

C20 The **Construction Monitoring Programs**, as approved by the Planning Secretary including any minor amendments approved by the **ER** must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.

C21 The results of the **Construction Monitoring Programs** must be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a **Construction Monitoring Report** at the frequency identified in the relevant **Construction Monitoring Program**.

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**Note:** Where a relevant **CEMP Sub-plan** exists, the relevant **Construction Monitoring Program** may be incorporated into that **CEMP Sub-plan**.

FOR INFORMATION

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## PART D

### OPERATIONAL ENVIRONMENTAL MANAGEMENT

#### OPERATIONAL ENVIRONMENTAL MANAGEMENT

- D1 An **Operational Environmental Management Plan (OEMP)** must be prepared having regard to the *Environmental Management Plan Guideline for Infrastructure Projects* (Department of Planning and Environment, 2020). The OEMP must 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. **Condition D1** does not apply if **Condition D2** of this approval applies.
- D2 An **OEMP** is not required for the CSSI if the Proponent has an **Environmental Management System (EMS)** or equivalent as agreed with the Planning Secretary, and demonstrates, to the satisfaction of the Planning Secretary, that through the **EMS** or equivalent:
- (a) the performance outcomes, commitments and mitigation measures, made and identified in the documents listed in Condition A1, and specified relevant terms of this approval can be achieved;
  - (b) issues identified through ongoing risk analysis can be managed; and
  - (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.
- D3 The **OEMP** or **EMS** or equivalent as agreed with the Planning Secretary, must be submitted to the Planning Secretary for information no later than one month before the commencement of operation.
- D4 The **OEMP** or **EMS** or equivalent as agreed with the Planning Secretary, as submitted to the Planning Secretary and amended from time to time, must be implemented for the duration of operation and the **OEMP** or **EMS** or equivalent must be made publicly available before the commencement of operation.

#### OPERATIONAL MONITORING PROGRAM

- D5 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. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant **Operational Monitoring Program**, including copies of all correspondence from those agencies as required by **Condition A5**.

	Required Operational Monitoring Programs	Relevant authority(s) and council(s) to be consulted for each Operational Monitoring Program
(a)	Groundwater Monitoring Program	DPE Water, relevant council(s)

- D6 Each operational monitoring program must include:
- (a) details of baseline data;

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- (b) details of all monitoring of the project to be undertaken;
- (c) the parameters of the project to be monitored;
- (d) the frequency and lifespan of monitoring to be undertaken;
- (e) the location of monitoring;
- (f) the reporting of monitoring and analysis results against relevant criteria;
- (g) details of the methods that will be employed to analyse the monitoring data;
- (h) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and
- (i) any consultation to be undertaken in relation to the monitoring programs.

D7 The **Operational Groundwater Monitoring Program** must include:

- (a) daily measurement of the amount of water discharged from all water treatment plants;
- (b) monitoring quantity and water quality of the water discharged from all water treatment plants;
- (c) monitoring of groundwater levels in aquifers adjacent to or intersected by the tunnel alignment, in consultation with **DPE Water**;
- (d) monitoring of groundwater levels, electrical conductivity and temperature in key locations between saline water bodies and the tunnel with a minimum of two groundwater monitoring wells at different depths, with each deep bore at an adequate depth below the base of the tunnel, provided in each key location in consultation with **DPE Water**;
- (e) monitoring of the quantity, quality and reporting of groundwater inflows into the tunnels and beneath high risk sites for contamination;
- (f) a method for providing the data collected in (a) and (b) to Sydney Water every three months where flows are discharged to their assets to demonstrate the project's compliance with the discharge criteria or otherwise as required by a relevant trade waste licence; and
- (g) a process for annually forwarding data on the monthly volume of groundwater discharged from each water treatment plant to **DPE Water** for a minimum period of ten years, consistent with Condition D8.

**Note:** The monitoring data to be provided to **DPE Water** must be both in a tabulated and electronic quality controlled data (csv, excel) ready-to-use format.

D8 Groundwater monitoring must continue for a period of at least ten years following the completion of construction of the tunnels. At least six months prior to the end of the ten year monitoring period, the Proponent must undertake a review of all collected and collated groundwater monitoring data, ascertain any measured or incidental impact against the predicted impacts from the groundwater modelling for the final design and construction phase, and define all future monitoring requirements in consultation with **DPE Water**. The review must determine if additional monitoring is required, and the time period for continued monitoring. The Proponent must notify the Planning Secretary within two weeks of the review as to the outcomes of the review and any requirements for future monitoring.

**Note:** The monitoring data to be provided to **DPE Water** should be in a tabulated, quality controlled, electronic (csv, excel) ready-to-use data format.

D9 The **Operational Monitoring Program(s)** must be submitted to the Planning Secretary for approval at least three months prior to the commencement of operation.

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- D10 Operation must not commence until the Planning Secretary has approved all of the required **Operational Monitoring Programs**, and all relevant baseline data has been collected.
- D11 The **Operational Monitoring Programs**, as approved by the Planning Secretary, must be implemented for the duration identified in the terms of this approval. Where no duration is specified in this approval, they must be implemented for the duration specified in the relevant **Operational Monitoring Program** or as specified by the Planning Secretary, whichever is the greater.
- D12 The results of the **Operational Monitoring Programs** must be submitted to the Planning Secretary, and relevant regulatory authorities, for information in the form of an **Operational Monitoring Report** at the frequency identified in the in the terms of this approval. Where no frequency is identified in this approval, the results must be submitted at the frequency identified in the relevant **Operational Monitoring Program**.
- D13 Where a relevant **OEMP Sub-plan** exists, the relevant **Operational Monitoring Program** may be **incorporated** into that **OEMP Sub-plan**.

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## PART E

### KEY ISSUE CONDITIONS

#### AIR QUALITY AND ODOUR

E1 Measures must be implemented to minimise and manage the emission of dust, odour and other air pollutants during construction and operation.

#### **Air Quality Community Consultative Committee**

E2 Prior to finalising the detailed design of the CSSI and establishing the ambient air quality monitoring stations required under **Condition E26**, the Proponent must establish an Air Quality Community Consultative Committee (**AQCCC**) to provide advice prior to and during operation. The **AQCCC** must:

- (a) be comprised of at least:
  - i. two representatives from the Proponent and tunnel operator,
  - ii. one representative from each of the relevant councils, whose attendance is only required when considering matters relevant to their respective local government area,
  - 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 and approved by the Planning Secretary, and
  - iv. a Chair who is independent from the companies involved in the design, construction and operation of the CSSI put forward by the Proponent and approved by the Planning Secretary;
- (b) meet at least four times a year, or as otherwise approved by the Planning Secretary with consideration to advice from the Chair;
- (c) review and provide advice on the location of the ambient air quality monitoring stations required under Condition E26, and operational stage documents, compliance tracking reports, audit reports, and complaints, as they relate to ambient air quality; and
- (d) provide advice on the wider dissemination of monitoring results and other information on air quality issues.

The **AQCCC** must operate for up to two years after commencement of operation, or as otherwise approved or directed by the Planning Secretary, following advice from the Chair.

The **AQCCC** may comprise the same members of the **AQCCC** established under CSSI approvals for the WestConnex M4-M5 Link project (SSI 7485) in relation to the ventilation outlet located in the Rozelle Railyards.

In the event that a tunnel operator has not been appointed prior to finalisation of the detailed design, its two representatives must be appointed to the **AQCCC** once the tunnel operator has been engaged.

*Note: the EPA may be invited as an observer to the **AQCCC**.*

#### **Air Quality Independent Reviewer**

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- E3 The Proponent must engage an **Air Quality Independent Reviewer (AQIR)** who is independent of the project design and construction personnel and has appropriate skill and experience in road tunnel ventilation design, air quality monitoring design, and reporting.

The **AQIR** must be approved by the Planning Secretary and engaged by the Proponent prior to the finalisation of the detailed design. Their appointment must be made publicly available.

The **AQIR** cannot be the independent auditor required for the purposes of **Condition A38**.

Nothing in this condition prevents the Proponent from engaging an **AQIR** who is expert in in-tunnel ventilation and ventilation outlet design and one who is expert in ambient air quality monitoring.

- E4 Prior to commencing operation, the **AQIR(s)** must review and endorse the adequacy of the following as per the requirements of **Conditions E11, E20, E22, E27, E28, E29, E33 and E36**.

- (a) in-tunnel ventilation and ventilation outlet design; and
- (b) air quality monitoring.

### AIR QUALITY GOALS

#### In-Tunnel Air Quality Limits

- E5 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 1**.

**Table 1: In-tunnel average limits along length of tunnel**

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

- E6 The concentration of CO as measured at any single point in the tunnel must not exceed the concentration limit specified in **Table 2** under all traffic scenarios.

**Table 2: In-tunnel single point exposure limits**

Pollutant	Concentration Limit	Units of measurement	Averaging period
CO	200	ppm	Rolling 3-minute

- E7 The tunnel ventilation system must be designed and operated so that the visibility in the tunnel does not exceed the level specified in **Table 3**.

**Table 3: In-tunnel visibility limits along length of tunnel**

Parameter	Average extinction coefficient Limit	Units of measurement	Averaging period
Visibility	0.005	m <sup>-1</sup>	Rolling 15-minute

### Emergency Discharge

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- E8 The limits specified in **Conditions E5, E6, E7, E21 and E25** do not apply in an emergency relating to the operation of the CSSI. For the purpose of this condition, an emergency is an event that poses risk to human life associated with operation, but does not include an event related to traffic volume or speed or the operation of the broader road network.

### Monitoring of In-Tunnel Air Quality

- E9 The Proponent must continuously monitor (by sampling and obtaining results from analysis) the pollutants within the tunnel specified in **Conditions E5, E6, and E7**. Monitoring must commence on the first day of operation and continue throughout operation.
- E10 The in-tunnel air quality monitoring system must undergo relative accuracy test audits at least every six months, or within another timeframe approved with the Planning Secretary.
- E11 The Proponent must develop a methodology for determining the number and location of monitoring stations inside the tunnel in consultation with the EPA. The number and location of monitoring stations must be determined prior to operation and permit the accurate monitoring and calculation of the pollutants listed in **Conditions E5, E6, and E7**. The number and location of monitoring stations must be independently verified by the **AQIR** prior to the operation of the CSSI. As a minimum, monitoring stations must be installed inside the tunnel near the base of the ventilation outlets, at incoming fresh air vents, near the entry portals, exit portals, and at tunnel and ramp junctions, unless otherwise approved by the Planning Secretary.
- E12 Air quality monitoring data from all in-tunnel monitoring stations must be made available in as close to real time as possible, under the reporting requirements of **Condition E35**.

### Notification and Reporting on In-Tunnel Air Quality

- E13 The Proponent must notify the Planning Secretary, EPA and Ministry of Health of any recordings above the limits specified in **Conditions E5, E6, and E7** as early as possible and within 24 hours of the recorded event.

This notification must provide details of the circumstances of the event, including:

- (a) the nature and location of the event, including details relating to the cause;
- (b) the timing and duration of the event;
- (c) the extent and severity of the event;
- (d) the measures employed to minimise the concentration levels, and to improve visibility levels if visibility levels were above the specified limit;
- (e) the frequency of the event, including whether an event with the same or similar circumstances has occurred previously; and
- (f) the date when the Proponent will submit a Tunnel Air Quality Management Systems Effectiveness Report in accordance with Condition E14.

- E14 A **Tunnel Air Quality Management Systems Effectiveness Report** must be prepared to detail the overall system performance, cause and major contributor of any exceedances. The report must include:

- (a) the overall performance and concentration levels in the tunnel for the preceding six month period, including average and maximum levels and time periods;
- (b) details of any instances throughout operation where pollutant concentration levels in the tunnel have exceeded the limits specified in **Conditions E5, E6, and E7**; and



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- (c) consideration of improvements and proposed changes to the tunnel air quality management system.

The report must be submitted to the Planning Secretary for information no later than 12 months following the commencement of operation of the CSSI and within one month of any request made by the Planning Secretary.

### Tunnel Air Quality Management

- E15 Prior to operation, signage must be installed at each surface tunnel entrance and variable message signage provided at regular intervals throughout the tunnel to instruct tunnel users to close windows and turn on recirculated air. Relevant information about this instruction must also be provided on a website operated by the Proponent which is required to be maintained throughout operation.

### Ventilation Outlets

- E16 The tunnel ventilation outlets must be constructed at the location specified in **Appendix B**.

*Note: The ventilation outlet at the Rozelle ventilation facility is being constructed as part of the M4-M5 Link and the location is specified in Appendix C of the Instrument of Approval for SSI 7485.*

- E17 The ventilation outlets must be constructed to a tip height within the following ranges identified in **Table 4**.

**Table 4: Ventilation Outlet Heights**

Location	Outlet Height (metres AHD)
City West Link, Rozelle	the height of the ventilation facility at Rozelle was set in <b>Condition E12</b> in the Instrument of Approval for WestConnex M4-M5 Link project SSI 7485
Warringah Freeway corridor to the north of Ernest Street, in Cammeray	Between 29 and 31 <b>metres above ground elevation at the ventilation outlet site (102.0 to 104.1 AHD)</b>

### Design and Operation of Tunnel Ventilation System

- E18 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, except for emergency smoke management purposes in the event of a fire in the tunnel or periodic testing of the system as defined in the **OEMP** required by **Condition D1** or an **EMS** required under **Condition D2**.
- E19 All tunnels must be designed and constructed so as to allow for future modification of the ventilation system if required to facilitate air quality limits and goals, if required.
- E20 The **AQIR**, must review the in-tunnel ventilation and ventilation outlet design of the project to verify that:
- the final design achieves the in-tunnel and ventilation outlet limits for all traffic conditions including congestion;
  - the predicted impacts of the final design are no greater than predicted in the documents listed **Condition A1** for the equivalent operating condition; and
  - the ventilation system design has been optimised to achieve effective and responsive treatment of in-tunnel air quality and efficient energy consumption.

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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 must be remodelled using the model adopted for the design review, to establish the predicted outcomes under part (b).

This verification must be submitted to the Planning Secretary for information prior to operation.

### Limits on Emissions from Ventilation Outlets

E21 The concentration of a pollutant discharged from the ventilation outlets must not exceed the respective limits specified for that pollutant in **Table 5**.

**Table 5: Ventilation Outlet Mass Pollutant Concentration**

Pollutant	100 percentile limit	Units of measurement	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

### Monitoring of Ventilation Outlet Emissions

E22 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 be in accordance with the methods and frequencies for the pollutant parameters specified in **Table 6** and be undertaken at commencement of and throughout operation.

The adequacy of the monitoring equipment must be verified by the **AQIR** prior to the commencement of monitoring for compliance with the requirements set out in **Table 6**. The pollutant monitoring system must undergo relative accuracy test audits at least every six months, or within another timeframe approved by the Planning Secretary.

**Table 6: 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>
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

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NO <sub>2</sub> or NO or both, as NO <sub>2</sub> equivalent	mg/m <sup>3</sup>	Continuous	CEM-2 & US EPA Procedure 1
NO <sub>2</sub>	mg/m <sup>3</sup>	Continuous	CEM-2 & US EPA Procedure 1
CO	mg/m <sup>3</sup>	Continuous	CEM-4 & US EPA Procedure 1
VOC <sup>2</sup>	mg/m <sup>3</sup>	Continuous	CEM-8 & US EPA Procedure 1
Speciated VOC	mg/m <sup>3</sup>	Annual	TM-34
Speciated PAH <sup>3</sup>	µg/m <sup>3</sup>	Annual	OM-6
<b>Parameter</b>	<b>Units of measure</b>	<b>Frequency</b>	<b>Method<sup>1</sup></b>
Velocity	m/s	Continuous	CEM-6 & US EPA Procedure 1
Volumetric flow rate	m <sup>3</sup> /s	Continuous	CEM-6 & US EPA Procedure 1
Moisture	%	Continuous	TM-22
Temperature	°C	Continuous	TM-2
<b>Other</b>	<b>Units of measure</b>	<b>Frequency</b>	<b>Method<sup>1</sup></b>
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 Planning Secretary in consultation with the EPA.*
2. *Expressed as n-propane equivalent and 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 US EPA Performance Specification 11 or any modification thereof approved in writing by the EPA, and US EPA Procedure 2.*

### Notification and Reporting of Ventilation Outlet Emissions

E23 The Proponent must notify the Planning Secretary, EPA and Ministry of Health of any recordings above the emission limits (Above-Emission Limit Recording) in **Condition E21** as soon as possible and within 24 hours of the recording.

This notification must provide details of the circumstances of the event, including:

- (a) the nature of the event;
- (b) the concentration levels that occurred;
- (c) the timing and duration of the event; and
- (d) the measures employed to minimise the concentration levels.

E24 Within one month of any notification of Above-Emission Limit Recording, the Proponent must prepare and submit to the Planning Secretary for information a **Report on Above-Emission Limit Recording** that details the cause of the exceedance, the effectiveness

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of any action(s) taken in response to the exceedance and the options available to prevent recurrence.

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.

## AMBIENT AIR QUALITY

### Maximum Concentrations for Ambient Air Quality

E25 Should ambient monitoring of air pollutants exceed the following maximum concentrations, the provisions of **Conditions E29, E30 and E31** will apply:

- (a) CO – 8 hour rolling average of 9.0 ppm (NEPM);
- (b) NO<sub>2</sub> – one hour average of 0.12 ppm (245 µg/m<sup>3</sup>) (NEPM);
- (c) PM<sub>10</sub> – 24 hour average of 50 µg/m<sup>3</sup> (NEPM);
- (d) PM<sub>2.5</sub> – 24 hour average of 25 µg/m<sup>3</sup> (NEPM);
- (e) PM<sub>10</sub> – annual average of 25 µg/m<sup>3</sup> (NEPM); and
- (f) PM<sub>2.5</sub> – annual average of 8 µg/m<sup>3</sup> (NEPM).

This condition does not apply to the ambient air quality changes caused by bushfires or other events unrelated to the operation of the tunnel, as endorsed by the AQIR.

*Note: The notification and reporting obligations under **Conditions E29, E30 and E31** relating to ambient monitoring will begin at the commencement of operation. 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.*

### Monitoring of Ambient Air Quality

E26 The Proponent must monitor (by sampling and obtaining results by analysis) the pollutants and parameters specified in **Table 7** using the sampling method, units of measure, and sampling frequency specified in the condition and table. Monitoring must be undertaken at the following locations as a minimum:

- (a) two ground level receptors near the Rozelle ventilation outlet, at locations suitable for detecting any impact on air quality from the outlet (these locations may be the same as those established under WestConnex M4-M5 Link project SSI 7485); and
- (b) two ground level receptors near the Cammeray ventilation outlet, at locations suitable for detecting any impact on air quality from the outlet.

**Table 7: 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

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				agreed with the with the EPA
CO	ppm	1-hour,8-hour	Continuou s	AM-6
<b>Parameter<sup>4</sup></b>	<b>Units of measurement</b>	<b>Averagin g Period</b>	<b>Frequenc y</b>	<b>Method<sup>1</sup></b>
Wind Speed @ 10 m	m/s	1-hour	Continuou s	AM-2 & AM-4
Wind Direction @ 10 m	°	1-hour	Continuou s	AM-2 & AM-4
Sigma Theta @ 10 m	°	1-hour	Continuou s	AM-2 & AM-4
Temperature @ 2m	K	1-hour	Continuou s	AM-4
Temperature @ 10 m	K	1-hour	Continuou s	AM-4
<b>Other</b>	<b>Units of measurement</b>	<b>Averagin g Period</b>	<b>Frequenc y</b>	<b>Method<sup>1</sup></b>
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 – PM<sub>10</sub> 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 – PM<sub>2.5</sub> Continuous Direct Mass Method using a Tapered Element Oscillating Microbalance Analyser (Standards Australia, 2013).*
4. *TBD - location for meteorological monitoring station(s) to be representative of weather conditions likely to occur near the Rozelleand Cammeray ventilation outlets.*
5. *Appropriately modified to include size selective inlet for PM<sub>2.5</sub> or as otherwise approved by the EPA.*

E27 The monitoring locations must be selected with the objective of achieving a like-for-like comparison of monitoring results with available pre-construction data. The locations must also allow for the review of the predicted local air quality outcomes described in the EIS against the results of the air quality monitoring as part of the independent environmental audit required under **Condition A38**.

The location of the monitoring stations must be informed by the **AQCCC** and subject to landowner's and occupier's agreement. The location of the monitoring stations must be verified by the **AQIR**, taking into consideration advice from the EPA, and provided to the Planning Secretary for information prior to their installation.

The establishment and operation of the monitoring stations must be undertaken in accordance with recognised Australian standards and undertaken by an organisation accredited by NATA for this purpose. 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. The ambient air quality monitoring system must

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undergo relative accuracy test audits at least every six months, or within another timeframe approved with the Planning Secretary.

- E28 The **AQIR** must ensure that the operating procedures and equipment to monitor and acquire ambient air quality data, meteorological data and emission data and all reporting procedures comply with NATA (or equivalent) requirements where such requirements exist.

The Proponent must commence monitoring for at least 12 continuous months prior to operation and continue monitoring for at least two years following the commencement of operation. At the end of the two 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 Planning Secretary.

### Notification and Reporting of Ambient Air Quality

- E29 The Proponent must prepare an **Ambient Air Quality Protocol** for evaluating a potential measurement that exceeds the maximum concentrations in **Condition E25**. The **Ambient Air Quality Protocol** must be developed by the Proponent in consultation with the **AQCCC** and endorsed by the **AQIR** at least three months prior to the commencement of operation.

The **Ambient Air Quality Protocol** must include:

- (a) a process for notification of a recording above the ambient air quality maximum concentrations in **Condition E25**, subject to **Condition E30**;
- (b) the template that would be used for the **Report on Above-Maximum Concentration Recording**, required by **Condition E31**; and
- (c) a reporting process endorsed by the **AQIR** that facilitates a **Report on Above-Maximum Concentration Recording**.

This condition does not apply to the ambient air quality changes caused by bushfires or other events unrelated to the operation of the tunnel.

- E30 The Proponent must notify the Planning Secretary, EPA and Ministry of Health of any recordings above the maximum concentrations (**Above-Maximum Concentration Recording**) in **Condition E25** as soon as possible and within 24 hours of the recording.

This notification must provide details of the circumstances of the event, including:

- (a) the nature of the event;
- (b) the concentration levels that occurred;
- (c) the timing and duration of the event;
- (d) the measures employed to minimise the concentration levels; and
- (e) the date when the Proponent will submit a **Report on Above-Maximum Concentration Recording** in accordance with **Condition E31**.

- E31 Within one month of any notification of Above-Maximum Concentration Recording, the Proponent must prepare and submit to the Planning Secretary, for information, a **Report on Above-Maximum Concentration 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.

- E32 Where the operation of the tunnel is identified to be a significant contributor to the recorded above-goal reading, the **Report on Above-Maximum Concentration Recording** must include consideration of improvements to the tunnel air quality

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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 E19**.

### Tunnel Air Quality – General Reporting

- E33 The Proponent must develop and implement an **Air Quality Reporting System** for in-tunnel ventilation outlet emissions and ambient air quality prior to operation. The **Air Quality Reporting System** must be reviewed and verified by the AQIR prior to operation as meeting the requirements of **Conditions E34 to E35**. The **Air Quality Reporting System** and the **AQIR** verification must be made publicly available prior to operation.
- E34 The **Air Quality Reporting System** must meet minimum analytical reporting requirements for air pollution monitoring stations as specified in the *Approved Methods of Modelling and Assessment of Air Pollutants in NSW* (EPA, 2007, or as updated).
- E35 The **Air Quality Reporting System** must ensure that the following information is continually made publicly available, unless otherwise approved by the Planning Secretary:
- results of hourly updated real-time monitoring and relevant meteorological data 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; and
  - annual report(s) on the results of the monitoring for the duration of the operation of the project. The first report must be made available within 15 months of the operation of the project and address the first 12 months of operation. Subsequent reports must address the previous 12 months of operation and be made publicly available no later than three months following the 12 month-period of operation which is the subject of the report. The reports must analyse and discuss the monitoring results, including any trends and variations in the data during the reporting period, and compare the results with previous reporting periods.

### Quality Assurance and Control

- E36 Quality assurance (QA) and quality control (QC) measures for air quality and ventilation outlet emission monitoring data must be prepared and undertaken. 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 verified by the **AQIR**.

### Future Development Guidance

- E37 Within 18 months of commencement of construction, the Proponent must provide data to councils detailing pollution concentrations at various heights and distances from the ventilation outlets to facilitate the planning of and assessment of new development in areas within a distance of 300 metres around the ventilation outlets which would be within a potential three-dimensional zone of affectation (buffer volume). As part of this process, the Proponent must meet all reasonable costs for any necessary amendments to planning instrument(s) required to implement the guidelines.

## BIODIVERSITY

### Species Credits

- E38 Prior to clearing of *Acacia terminalis subsp. terminalis* (*Sunshine Wattle*), the species credits in **Table 8** must be retired. The retirement of credits must be carried out in accordance with the offset rules of the *Biodiversity Conservation Act 2016* (BC Act).



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**Table 8: Species credits**

Species (only for the below)	Number of Credits	In the below IBRA subregions
<i>Acacia terminalis</i> subsp. <i>terminalis</i> (Sunshine Wattle)	2	SYB07, Pittwater

**E38A** Prior to clearing PCT 4023 at the Emu Plains Ancillary Facility (WHT13), the species credits in Table 8A must be retired. The retirement of credits must be carried out in accordance with the offset rules of the *Biodiversity Conservation Act 2016* (BC Act).

**Table 8A: Species credits**

Plant Community Type (PCT)	Number of Credits	In the below IBRA subregions
<b>PCT4023: Coastal Valleys Swamp Oak Riparian Forest</b>	<b>9</b>	<b>Cumberland</b>
Species (only for the below)	Number of Credits	In the below IBRA subregions
<b><i>Myotis Macropus</i> (Southern Myotis)</b>	<b>11</b>	<b>Cumberland</b>

E39 The requirement to retire credits in **Condition E38 and E38A** above may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the class and number of species credits, as calculated by the Biodiversity Offsets Payment Calculator.

E40 Evidence of the retirement of credits or payment to the Biodiversity Conservation Fund in satisfaction of **Condition E38** must be provided to the Planning Secretary prior to the clearing of the *Acacia terminalis* subsp. *terminalis* (Sunshine Wattle).

**E40A** Evidence of the retirement of credits or payment to the Biodiversity Conservation Fund in satisfaction of **Condition E38A** must be provided to the Planning Secretary prior to clearing PCT 4023.

### Microbat Monitoring Program

E41 A **Microbat Management-Plan Monitoring Program** must be prepared to address impacts, detail mitigation measures and monitoring of the Large Bent-winged Bat (*Miniopterus orianae oceanensis*) **identified at the Balls Head Coal Loader**.

The **Plan Monitoring Program** must include:

- (a) **deleted**
- (b) **details-of all reasonable measures to avoid** potential impacts from construction;
- (c) **deleted**
- (d) details of monitoring techniques, timing, duration and frequency/intensity to be used;
- (e) **deleted**
- (f) ongoing monitoring and reporting requirements during construction; and
- (g) contingency measures to address impacts attributable to the construction of the CSSI.



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The plan must be developed in consultation with an independent and appropriately qualified expert in microbat biology and behaviour, **EHG**, North Sydney Council and be submitted to the Planning Secretary for approval prior to work that impacts microbats. The approved plan must be implemented during construction ~~and operation~~ of the CSSI.

- E42 The Proponent must monitor **all** microbats ~~mitigation measures~~ for the period specified in the **Microbat Management Plan Monitoring Program**, until ~~they are it is~~ demonstrated, to the satisfaction of the Coordinator General **EHG**, ~~to have been successful in mitigating that all potential~~ impacts on the Large Bent-winged Bat (*Miniopterus orianae oceanensi*) **have ceased**.
- E43 If by the end of the period of monitoring an unacceptable impact **has occurred, and an assessment has determined that offsets are required, threshold has been reached or the mitigation measures have not been demonstrated to the satisfaction of the Coordinator General EHG to have been successful (as required by Condition E42)**, the Proponent must offset the impacts on the Large Bent-winged Bat. **by the Offsets must be achieved** by the retirement of biodiversity credits or payment to the Biodiversity Conservation Fund or the undertaking of other biodiversity conservation actions, as determined in consultation with and to the satisfaction of the Coordinator General **EHG**.
- E44 The Proponent must prepare and submit to the Planning Secretary for information:
- evidence confirming the class and number of biodiversity credits or other biodiversity conservation action required by **Condition E43** within one month of receiving the notification of the satisfaction of the Coordinator General **EHG** a copy of the **Credit Retirement Report**; and
  - evidence of the retirement of credits (or payment to the Biodiversity Conservation Fund), or the transfer of funds to **EHG** for the purposes of undertaking the biodiversity action(s), required by **Condition E43**, within six months of receiving the notification of the satisfaction of the Coordinator General **EHG**.

E45 **deleted**

E46 **deleted**

E47 **deleted**

### Habitat Enhancement

- E48 Within three months of the removal of any native trees, the Proponent must consult with local community restoration/rehabilitation groups, Landcare groups, relevant councils, DPI Fisheries and any relevant public authorities to determine if there is an interest in the reuse of suitable timber and root balls for habitat enhancement and rehabilitation work. If there is an interest, native trees that are removed for the construction of the CSSI and that are greater than 25-30 centimetres in diameter and three metres in length must be salvaged and stored for a period of at least six weeks to enable collection by interested parties.

### FLOODING

- E49 **Except as permitted by Condition E49A**, the CSSI must be designed and implemented to limit **changes to flood behaviour during the 1% AEP event as follows flooding characteristics to the following levels:**

## CONSOLIDATED APPROVAL

- (a) a maximum increase in inundation time of one hour ~~in a 1% AEP flood event~~;
- (b) a maximum increase of 10 mm in inundation at the **habitable room floor level at properties** where **habitable room** floor levels are currently inundated ~~exceeded in a 1% AEP flood event~~;
- (c) a maximum increase of 50 mm in inundation **of land zoned as residential, commercial or industrial where the land is not currently inundated at properties where floor levels would not be exceeded in a 1% AEP flood event**; and
- (d) no inundation of **habitable room** floor levels which are **currently** not **currently** inundated ~~in a 1% AEP flood event~~.

Measures identified in the documents listed in **Condition A1** to not worsen flood characteristics or other measures that achieve the same outcomes, must be incorporated into the detailed design of the CSSI. The incorporation of these measures must be reviewed and endorsed by a suitably qualified and experienced person in consultation with directly affected landowners, **EHG**, NSW State Emergency Service (SES) and relevant councils.

**E49A** Where **Condition E49** cannot be achieved during operation of the Emu Plains Ancillary Facility (WHT13) within the Boral Emu Plains site, alternative changes to flood behaviour may be agreed to in writing with Boral Limited. Any written agreement must be obtained prior to Works that will result in **Condition E49** not being met.

**E49B** A Flood Emergency Management Plan (FEMP) for the Emu Plains ancillary facility (WHT13) must be prepared by a suitably qualified, chartered professional engineer with skills and experience in hydrology and flood emergency management. The FEMP must be prepared in consultation with the NSW Reconstruction Authority and the NSW State Emergency Service prior to the commencement of Construction, or where there is more than 20 personnel and visitors on-site at any one time at WHT13. The FEMP is to facilitate self-directed evacuation or evasion and must include details of the actions to be undertaken before, during, and after a flood, how warnings will be monitored, the triggers for different actions, and the evacuation procedures to be followed. Actions should cover different stages of the development, including site establishment, use of the facility, and decommissioning of the Emu Plains ancillary facility (WHT13). The plan must be updated during the operation of the facility if there are changes in use that would impact on evacuation.

The FEMP must address the provisions of the *Flood Risk Management Manual (DPE, 2023)* and the associated *Floodplain Risk Management Guidelines*, consider the full range of flood risks, the proposed use of the site, site access constraints and local area evacuation routes, and include:

- (a) flood awareness/education for construction site workers;
- (b) flood warden delegation and responsibilities during establishment, use and decommissioning;
- (c) temporary evacuation signage including clearly labelled direction of travel in the event of a flooding emergency; and
- (d) timing provisions for FEMP review.

All parties involved in the establishment, use and decommissioning of the site must be issued with a copy of the FEMP and be notified of flood evacuation responsibilities. The FEMP must be implemented during Construction and be submitted to the Planning Secretary upon request.

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## Notes

1. *The FEMP may be staged so that actions can be developed and implemented to cover different stages of the development such as site establishment, operation and decommissioning.*
2. *The reference to personnel and visitors does not include NSW government or Proponent representatives undertaking site inspections.*
3. *In the event that the FEMP is finalised prior to Construction, maximum personnel and visitor numbers may be increased beyond the 20 personnel/visitor limit.*

**E49C** Before Work commences at WHT13, the following is required:

- (a) establish a procedure for regularly monitoring water levels and flood warnings at the Nepean River at Penrith (Bureau of Meteorology Station Number 567047)
- (b) establish a procedure for immediately evacuating all personnel and visitors on site when the water level at that station reaches the minor flood level, or a warning for minor flooding at Penrith is issued
- (c) update the Incident Response Plan covering the WHT13 site to include these procedures.

*Note: The requirements of Condition E49C only apply until the FEMP is finalised and implemented.*

## ABORIGINAL CULTURAL HERITAGE

E50 The Proponent must take all reasonable steps so as not to harm, modify or otherwise impact Aboriginal objects except as authorised by this approval.

## NON-ABORIGINAL HERITAGE

E51 The Lavender Street toll gantry must be designed to be consistent with the most recently endorsed *Sydney Harbour Bridge Conservation Management Plan*. The design must be undertaken in consultation with relevant stakeholders including Heritage NSW.

E52 Options for protecting and reusing salvaged heritage infrastructure from the former Woodleys Shipyard and BP Sites in the landscaping of Berrys Bay must be reviewed. The use of the items must be detailed in the **Place, Design and Landscape Plan** required by **Condition E177**.

E53 Deleted

E54 Deleted

## Maritime Heritage

E55 The potential to retain or minimise impacts to the NSW Torpedo Corps slipway within Woodleys Shipyard **in the landscaping of Berrys Bay** must be reviewed during detailed design. If reasonably practicable, the slipway must be retained or impacts minimised.

## Archival Recording

E56 Prior to potential physical impact, archival recording must be undertaken for the following heritage items:

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- (a) St Leonards Park (including W. Tunks Memorial Fountain, War Memorial, and North Sydney Oval), North Sydney; **and**
- (b) North Sydney Sewer Vent.
- (c) **deleted**
- (d) **deleted**

E57 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). A copy must be provided to Heritage NSW and the relevant Council and submitted as part of the **Final Excavation Report** required by **Condition E62**.

### Excavation and Archaeology

- E58 Prior to the commencement of construction that has the potential to impact upon areas of archaeological significance as defined in the documents listed in **Condition A1**, a revised **Archaeological Research Design and Excavation Methodology** must be prepared in accordance with the Heritage Council of NSW guidelines and Heritage NSW comments on the EIS and RtS, to guide the archaeological program. The revised methodology must be prepared in consultation with Heritage NSW and submitted to the Planning Secretary for information.
- E59 Prior to commencement of archaeological excavation, the Proponent must nominate a suitably qualified Excavation Director who complies with *Heritage NSW's Criteria for Assessment of Excavation Directors* (September 2019) to oversee and advise on matters associated with historical archaeology. The Excavation Director must be present to oversee excavation, advise on archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the approved **Archaeological Research Design and Excavation Methodology** required by **Condition E58**.
- E60 Following completion of archaeological excavation programs a **Final Excavation Report** must be prepared that includes: the details of any archival recording, further historical research undertaken to enhance the final reporting and results of archaeological excavations (including artefact analysis and identification of a final repository for finds). The report must be prepared in accordance with guidelines and standards required by Heritage NSW.

### Artefact Management

- E61 An **Artefact Conservation Management Plan (ACMP)** must be prepared to support the archaeological excavation programs and be prepared with the support of a conservator. The **ACMP** must include historical and maritime relics recovered by the project. Artefact specialists must be engaged to analyse and report on the different assemblages as part of the final reporting for the CSSI. This must include details of analysis, processing and management of the collection including its curation needs in the short and long term. The Plan must be included in the **Maritime Heritage and Non-Aboriginal Heritage Management CEMP Sub-plans**, required by **Condition C4**.
- E62 The **Final Excavation Report** must be submitted to the Planning Secretary, Heritage NSW and the relevant Council for information no later than 12 months after the completion of the work referred to in **Condition E60**. It must include details of any significant artefacts recovered, where they are located and details of their ongoing conservation and protection in perpetuity. Copies of the **Final Excavation Report** must

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be provided to the Planning Secretary, Heritage NSW and to the relevant local Council's local studies unit.

### Unexpected Heritage Finds

E63 An **Unexpected Heritage Finds and Human Remains Procedure** must be prepared to manage unexpected heritage finds (including maritime discoveries) in accordance with any guidelines and standards prepared by Heritage NSW and submitted to the Planning Secretary for information before the commencement of construction.

E64 The **Unexpected Heritage Finds and Human Remains Procedure**, as submitted to the Planning Secretary, must be implemented for the duration of construction.

*Note: Human remains that are found unexpectedly during the carrying out of work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.*

### NOISE AND VIBRATION

#### Land Use Survey

E65 A detailed land use survey must be undertaken to confirm sensitive land user(s) (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration, construction ground-borne noise and operational noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction or operational noise, vibration or ground-borne noise in that area. The results of the survey must be included in the **Noise and Vibration CEMP Sub-plan** required by **Condition C4**.

#### Construction Hours

E66 Work must only be undertaken during the following hours:

- (a) 7:00am to 6:00pm Mondays to Fridays, inclusive;
- (b) 8:00am to 6:00pm Saturdays; and
- (c) at no time on Sundays or public holidays.

#### Highly Noise Intensive Work

E67 Except as permitted by an EPL, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken:

- (a) between the hours of 8:00 am to 6:00 pm Monday to Friday;
- (b) between the hours of 8:00 am to 1:00 pm Saturday; and
- (c) if continuously, then not exceeding three hours, with a minimum cessation of work of not less than one hour.

For the purposes of this condition, 'continuously' includes any period during which there is less than one hour between ceasing and recommencing any of the work.

#### Variation to Work Hours

E68 Notwithstanding **Conditions E66** and **E67** work may be undertaken outside the hours specified in any of the following circumstances:

- (a) **Safety and Emergencies**, including:
  - (i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or
  - (ii) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm.

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

- (b) **Low impact**, including:
- (i) construction that causes  $L_{Aeq(15 \text{ minute})}$  noise levels:
    - no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, or
    - no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s); or
  - (ii) construction that causes  $L_{AFmax(15 \text{ minute})}$  noise levels no more than 15 dB(A) above the rating background level at any residence; or
  - (iii) construction that causes:
    - continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of *Assessing Vibration: a technical guideline* (DEC, 2006), or
    - intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of *Assessing Vibration: a technical guideline* (DEC, 2006).
- (c) **By Approval**, including:
- (i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or
  - (ii) works which are not subject to an EPL that are approved under an **Out-of-Hours Work Protocol** as required by **Condition E69**; or
  - (iii) negotiated agreements with directly affected residents and sensitive land user(s).
- (d) **By Prescribed Activity**, including:
- (i) tunnelling (excluding cut and cover tunnelling and surface works) and tunnel fit out works (excluding surface works) are permitted 24 hours a day, seven days a week; or
  - (ii) delivery of material that is required to occur outside of standard construction hours in **Condition E66** to directly support tunnelling activities, ~~except between the hours 10:00 pm and 7:00 am to/from WHT7 at Berrys Bay which could result in a sleep disturbance event for receivers in the proximity of Bay Road and Balls Head Road, Waverton~~; or
  - (iii) ~~deleted~~
  - (iv) ~~trailer suction hopper dredging spoil haulage from the Rozelle Rail Yards construction support site (WHT12) onto the City West Link~~; or
  - (v) along the Warringah Freeway corridor in accordance with **Condition E88**.

### Out-Of-Hours Work Protocol – Works Not Subject to an EPL

E69 An **Out-of-Hours Work Protocol** must be prepared to identify a process for the consideration, management and approval of work which is outside the hours defined in **Conditions E66**, and that are not subject to an EPL. The Protocol must be approved by the Planning Secretary before commencement of the Out-of-Hours Work. The Protocol must be prepared in consultation with the **ER**, **AA** and EPA. The Protocol must provide:

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- (a) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where:
  - (i) the **ER** and **AA** review all proposed out-of-hours activities and confirm their risk levels,
  - (ii) low risk activities can be approved by the **ER** in consultation with the **AA**, and
  - (iii) high risk activities that are approved by the Planning Secretary;
- (b) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria;
- (c) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods consistent with the requirements of **Condition E83**. The measures must take into account the predicted noise levels and the likely frequency and duration of the out-of-hours works that sensitive land user(s) would be exposed to, including the number of noise awakening events;
- (d) procedures to facilitate the coordination of out-of-hours work including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided; and
- (e) notification arrangements for affected receivers for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works.

This condition does not apply if the requirements of **Condition E68(b)** are met.

### Construction Noise Management Levels and Vibration Criteria

E70 Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration objectives:

- (a) construction 'Noise affected' NML established using the *Interim Construction Noise Guideline* (DECC, 2009);
- (b) vibration criteria established using the *Assessing vibration: a technical guideline* (DEC, 2006) (for human exposure);
- (c) Australian Standard AS 2187.2 - 2006 "*Explosives - Storage and Use - Use of Explosives*";
- (d) BS 7385 Part 2-1993 "*Evaluation and measurement for vibration in buildings Part 2*" as they are "applicable to Australian conditions"; and
- (e) the vibration limits set out in the *German Standard DIN 4150-3: Structural Vibration-effects of vibration on structures* (for structural damage); and
- (f) **the project noise trigger levels as determined in accordance with the Noise Policy for Industry (EPA, 2017), for the operation of the Emu Plains construction ancillary facility (WHT13).**

Any work identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the **Noise and Vibration CEMP Sub-plan**.

**Note:** The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction NML.

E71 Mitigation measures must be applied when the following residential ground-borne noise levels are exceeded:

- (a) evening (6:00 pm to 10:00 pm) — internal  $L_{Aeq(15 \text{ minute})}$ : 40 dB(A); and
- (b) night (10:00 pm to 7:00 am) — internal  $L_{Aeq(15 \text{ minute})}$ : 35 dB(A).

The mitigation measures must be outlined in the **Noise and Vibration CEMP Sub-plan**, including in any **Out-of-Hours Work Protocol**, required by **Condition E69**.



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- E72 Noise generating work in the vicinity of potentially-affected community, religious, educational institutions, noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the 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.
- E73 At no time can noise generated by construction exceed the National Standard for exposure to noise in the occupational environment of an eight-hour (8hr) equivalent continuous A-weighted sound pressure level of  $L_{Aeq,8h}$  of 85 dB(A) for any employee working at a location near the CSSI.

### Construction Noise and Vibration Mitigation and Management

- E74 Industry best practice construction methods must be implemented where reasonably practicable to ensure that noise levels are minimised. Practices must include, but are not limited to:
- (a) use of regularly serviced low sound power equipment;
  - (b) early occupation and later release of road carriageways and construction sites;
  - (c) scheduling of noisiest works before 11.00 pm Sunday to Thursday and before 12 midnight Friday and Saturday;
  - (d) temporary noise barriers (including the arrangement of plant and equipment) around noisy equipment and activities such as rockhammering and concrete cutting; and
  - (e) use of alternative construction and demolition techniques.

### Ground borne noise mitigation – launch and receival chambers

**E74A The use of rock breakers/hammers for the construction of the launch chamber at Birchgrove and receival chamber at Waverton is restricted to 7:00 am to 6:00 pm, Monday to Saturday, unless the works:**

- (a) do not exceed the NML at sensitive receivers; or**
- (b) are otherwise permitted through an Environment Protection Licence.**

E75 **Construction Noise and Vibration Impact Statements (CNVIS)** must be prepared for any work that may exceed the noise management levels, vibration criteria and/or ground-borne noise levels specified in **Condition E70 and Condition E71** at any residence outside construction hours identified in **Condition E66**, or where receivers will be highly noise affected. The **CNVIS** must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the works. A copy of the **CNVIS** must be provided to the **AA** and **ER** prior to the commencement of the associated works. The Planning Secretary may request a copy/ies of **CNVIS**.

E76 Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before work that generates vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers are to be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the **Noise and Vibration CEMP Sub-plan** required by **Condition C4** and the **Community Communication Strategy** required by **Condition B1**.

### Construction Noise Mitigation - Acoustic Sheds



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- E77 All surface-based tunnelling support activities that generate noise levels above the noise management levels in **Condition E70** must occur within an acoustic shed.
- E78 All acoustic sheds must be designed and used so that activities carried out within them do not result in the exceedance of the NMLs.

### Construction Vibration Mitigation - Heritage

- E79 The Proponent must conduct vibration testing during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures.
- E80 Advice from a heritage specialist must be sought on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage-listed structures.
- E81 Before conducting at-property 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 does not have an adverse impact on the heritage significance of the item.

### Utility Coordination and Respite

- E82 All work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must:
- reschedule any work to provide respite to impacted noise sensitive land user(s) so that the respite is achieved in accordance with Condition E83; or
  - consider the provision of alternative respite or mitigation to impacted noise sensitive land user(s); and
  - provide documentary evidence to the **AA** in support of any decision made by the Proponent in relation to respite or mitigation.

The consideration of respite must also include all other CSSI, SSI and SSD projects which may cause cumulative and/or consecutive impacts at receivers affected by the delivery of the CSSI.

### Out-of-Hours Works – Community Consultation on Respite

- E83 In order to undertake out-of-hours work outside the hours specified under **Condition E66**, the Proponent must identify appropriate respite periods for the out-of-hours work in consultation with the community at each affected location on a regular basis.

This consultation must include (but not be limited to) providing the community with:

- a progressive schedule for periods no less than three months, of likely out-of-hours work;
- a description of the potential work, location and duration of the out-of-hours work;
- the noise characteristics and likely noise levels of the work; and
- likely mitigation and management measures which aim to achieve the relevant noise management levels under **Condition E70** (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers).

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The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour work must be provided to the **AA**, **ER**, EPA and the Planning Secretary.

**Note:** Respite periods can be any combination of days or hours where out-of-hours work would not be more than 5 dB(A) above the rating background noise level at any residence.

### Warringah Freeway Upgrade – Noise Mitigation Measures

E84 The Proponent must implement the Noise Insulation Program (NIP) developed for the Warringah Freeway Upgrade works.

Should the NIP be progressively updated, the updated version must be provided to the Planning Secretary for information.

**Note:** the implementation of temporary or permanent noise mitigation measures in accordance with NIP is considered as low impact work as defined in the definitions table **Low Impact Work (d)**.

E85 Landowners whose residential properties are eligible to receive at-property treatment in accordance with the NIP must be advised of the range of options that can be installed at or in their property and given a choice as to which of these they agree to have installed.

A copy of all guidelines and procedures that will be used to determine at-property treatment at their residence must be provided to the landowner.

E86 The offer for at-property treatment or the application of other noise and vibration mitigation measures does not expire until the out-of-hours work affecting that property are completed, even if the landowner initially refuses the offer.

E87 The implementation of at-property treatment does not preclude the application of other noise and vibration mitigation and management measures including temporary and long term accommodation.

### Warringah Freeway Upgrade – Out-of-Hours Work periods

E88 Out-of-Hours Work along the Warringah Freeway corridor which results in an exceedance of the relevant NML at the same sensitive land user(s) may be undertaken in accordance with the following criteria:

- (a) two consecutive evenings and/or nights per week; or
- (b) three non-consecutive evenings and/or nights per week; or
- (c) 10 evenings and/or nights per month; or
- (d) except as identified by an EPL; or
- (e) in accordance with an agreement with a potentially impacted receiver(s) as required by **Condition E68(c)(iii)** or **Condition E83**.

**Note:** These parameters may be increased subject to the development of a framework, which is prepared in consultation with the community and EPA and with consideration of the delivery of the NIP.

### Emu Plains Ancillary Facility – At-property noise treatment

**E88A The landowners of 17 and 19 Railway Street, Emu Plains must be advised that their residences are eligible for at-property noise treatments. The advice must be provided within one month of the commencement of Work at the Emu Plains ancillary facility, unless an alternative timeframe is agreed to by the Planning Secretary.**

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- E88B** The noise treatment types to be provided must be developed in consultation with and agreed to by the affected landowners. The landowners must be advised of the range of options that can be installed at their property and be given a choice of mitigation to be installed. A copy of all guidelines and procedures that will be used to determine the type of noise treatment must be provided to the landowner.
- E88C** Where a landowner accepts the offer for at-property noise treatment, the measures must be implemented prior to the commencement of concrete casting at the Emu Plains ancillary facility (WHT13), unless an alternative timeframe is agreed to by the landowner.
- E88D** The offer for at-property treatment expires 18 months after concrete casting at the Emu Plains ancillary facility (WHT13) has commenced.

### Operational Noise Mitigation Measures

- E89** The Proponent must prepare an **Operational Noise Review (ONR)** to confirm noise control measures that would be implemented for the operation of the CSSI. The **ONR** must be prepared in consultation with the Planning Secretary, relevant council(s), and the EPA and must:
- confirm the appropriate operational noise objectives and levels for surrounding development, including existing sensitive land user(s);
  - 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;
  - confirm the operational noise impacts at adjoining development based on the final design of the CSSI, including operational daytime  $L_{Aeq,15\text{ hour}}$  and night-time  $L_{Aeq, 9\text{-hour}}$  traffic noise contours;
  - review the suitability of the operational noise mitigation measures identified in the documents listed in **Condition A1** and, where necessary, investigate and identify additional noise and vibration mitigation measures required to achieve the noise criteria outlined in the *NSW Road Noise Policy* (DECCW, 2011) and *NSW Noise Policy for Industry* (EPA, 2017) as relevant, including the timing of implementation;
  - include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures; and
  - procedures for the management of operational noise and vibration complaints.

The **ONR** must be verified by an independent acoustic expert. The **ONR** must be undertaken at the Proponent's expense and submitted to the Planning Secretary within 12 months of the commencement of construction unless otherwise agreed by the Planning Secretary.

The Proponent must implement the identified noise and vibration control measures and make the **ONR** publicly available.

**Note:** The design of noise barriers and the like must be undertaken in consultation with the community as part of the Place Design and Landscape Plan required under **Condition E177**.

- E90** Operational noise mitigation measures as identified in **Condition E89** that will not be physically affected by work, must be implemented within six months of submitting the

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**ONR**, unless otherwise agreed by the Planning Secretary. Where implementation of operational noise mitigation measures are not proposed to be implemented in accordance with this requirement, the Proponent must submit to the Planning 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 are implemented. The report must be endorsed by the **AA** and submitted to the Planning Secretary within six months of submitting the **ONR**.

**Note:** *Not having finalised detailed design is not sufficient justification for not implementing the proposed mitigation measures.*

E91 In the absence of an **ONR** required under **Condition E89**, the following can be undertaken:

- (a) provision of at-property noise mitigation measures required in the NIP under **Condition E84**; and
- (b) construction of the Massey to Amherst Street, Cammeray noise barrier / wall as identified in **APPENDIX C**.

**Note:** *Notwithstanding the provision of this condition, should the **ONR** identify the need for further mitigation the Proponent may be required to amend the design of already installed noise mitigation measures.*

### Operational Noise Validation

E92 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 E89**.

### Operational Noise Compliance Report

E93 An **Operational Noise Compliance Report (ONCR)** must be prepared to document the findings of the operational noise monitoring carried out under **Condition E92**. The **ONCR** must be prepared in accordance with the *Model Validation Guideline* (RMS, 16 May 2018 Version 1.1) and must address the following:

- (a) compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under **Condition E89**;
- (b) compliance with the operational noise levels in terms of criteria and noise goals established in the *NSW Road Noise Policy* (DECCW, 2011) and *NSW Noise Policy for Industry* (EPA, 2017);
- (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 receivers;
- (d) pavement corrections for light and heavy vehicles and an assessment of the acoustic performance of different pavement types over their design life;
- (e) 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;
- (f) any required recalibrations of the noise model taking into consideration factors such as noise monitoring and actual traffic numbers and proportions;
- (g) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of mitigation measures; and

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- (h) identification of additional measures to those identified in the review of noise mitigation measures required by **Condition E89**, that are to be implemented with the objective of meeting the criteria outlined in the *NSW Road Noise Policy* (DECCW, 2011) and *NSW Noise Policy for Industry* (EPA, 2017), when these measures are to be implemented and how their effectiveness is to be measured and reported to the Planning Secretary and the EPA.

The **Operational Noise Compliance Report** must be submitted to the Planning Secretary and the EPA within 60 days of completing the operational noise monitoring and made publicly available.

### Maintenance of Low Noise Road Pavements

- E94 Low noise road pavements must be maintained to ensure that they continue to contribute to the compliance of mitigated noise levels identified in the **ONR (Condition E89)** throughout the life of the project.

### Blasting

- E95 Blasting associated with the CSSI must only be undertaken during the following hours:

- (a) 9:00am to 5:00pm, Monday to Friday, inclusive;
- (b) 9:00am to 1:00pm on Saturday; and
- (c) at no time on Sunday or public holidays; or
- (d) as authorised through an EPL.

This condition does not apply in the event of a direction from the NSW Police Force or other relevant authority for safety or emergency reasons to avoid loss of life, property loss and/or to prevent environmental harm.

### Blasting Management Strategy

- E96 A **Blast Management Strategy** must be prepared and must include:

- (a) sequencing and review of trial blasting to inform blasting;
- (b) regularity of blasting;
- (c) intensity of blasting;
- (d) periods of relief; and
- (e) blasting program.

- E97 The **Blast Management Strategy** must be endorsed by a suitably qualified and experienced person.

- E98 The **Blast Management Strategy** must be prepared in accordance with relevant guidelines and in consultation with the EPA, in order 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 land user(s).

- E99 The **Blast Management Strategy** must be submitted to the Planning Secretary for information no later than one month before the commencement of blasting. The Strategy as submitted to the Planning Secretary, must be implemented for all blasting activities.

### SOCIO-ECONOMIC, LAND USE AND PROPERTY

- E100 The Proponent must identify the utilities and services (hereafter “services”) potentially affected by construction to determine requirements for diversion, protection and/or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. The Proponent in consultation with service

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providers must ensure that disruption to services resulting from the Activity are avoided where practical and advised to customers.

### Cammeray Golf Course

E101 The design and establishment of an altered Cammeray Golf Course must provide an equivalent standard golf course or the provision of works to offset the loss in standards. This must be undertaken in consultation with and at no cost to Cammeray Golf Club.

### Settlement

E102 A geotechnical model of representative geological and groundwater conditions must be prepared prior to excavation (that may pose a settlement risk) and tunnelling to identify geological structures and groundwater features. The model must include details of proposed excavations and tunnels, construction staging, and identify surface and sub-surface structures, including any specific attributes, which may be impacted by the CSSI. The Proponent must use this model to assess the cumulative predicted settlement, ground movement, stress redistribution and horizontal strain profiles caused by excavation and tunnelling, including groundwater drawdown and associated impacts, on adjacent surface and sub-surface structures.

E103 The Proponent must undertake a review of surface and sub-surface structures at risk from damage to determine appropriate criteria to prevent damage, prior to excavation and tunnelling works that may pose a settlement risk. Criteria for surface and sub-surface structures which are not included in **Condition E104 (Table 9)** must be determined in consultation with the owner(s) of the surface and sub-surface structures prior to commencement of any excavation or tunnelling works potentially affecting the surface and sub-surface structures.

E104 In the case of buildings, roads, parking areas and parks, the appropriate criteria which govern the greatest risk of damage are to be selected from **Table 9** unless the Proponent has determined more stringent criteria as a result of **Condition E103**.

**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

**Note:** \* As defined in Burland et al. 'Building response to tunnelling – Case studies from construction of the Jubilee Link Extension', London, Thomas Telford (2001)

E105 Should the geotechnical model in **Condition E102** identify exceedances of the relevant criteria established by **Conditions E103** and **E104**, the Proponent must implement an instrumentation and monitoring program to measure settlement, distortion or strain as required. The Proponent must also identify and implement appropriate mitigation measures in consultation with the owner(s) of the relevant surface and sub-surface structures prior to excavation and tunnelling works to ensure where possible that the surface and sub-surface structures will not experience exceedances of the relevant criteria.

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The adopted criteria do not remove any responsibility from the Proponent for the protection of existing surface and sub-surface structures or for rectifying any damage to surface and sub-surface structures resulting from the CSSI.

E106 Where monitoring indicates groundwater drawdown or settlement is substantially different to predictions or in excess of the limits specified in this approval, the requirements of **Conditions E102 to E105** inclusive must be undertaken again within three months. Model input parameters must be adjusted to calibrate the model so that predictions are better aligned with actual observations

### Condition Survey

E107 The Proponent must offer pre-construction surveys and must undertake and prepare **Pre-construction Condition Survey Reports** where the offer is accepted, on the current condition of surface and sub-surface structures identified as at risk from settlement or vibration by the geotechnical model described in **Condition E102** and the **CNVIS** required by **Condition E75** or as directed by the **Independent Property Impact Assessment Panel (IPIAP)** established under **Condition E111**. The **Pre-construction Condition Survey Reports** must be prepared by a suitably qualified and experienced person(s) and must be provided to the owners of the surface and sub-surface structures for review prior to the commencement of potentially impacting works.

E108 Where pre-construction surveys have been undertaken in accordance with **Condition E107**, subsequent post-construction surveys must be undertaken to assess damage to the surface and sub-surface structures that may have resulted from construction within three months of landowner(s) requests.

E109 The results of the post-construction surveys undertaken under **Condition E108** must be documented in **Post-construction Condition Survey Reports** for each surface and sub-surface structure surveyed. The **Post-construction Condition Survey Reports** must be prepared by a suitably qualified and experienced person(s). Copies of the **Post-construction Condition Survey Reports** must be provided to the owner(s) of the structures surveyed no later than four months following the completion of construction activities that have the potential to impact on the subject surface / subsurface structure.

E110 Where damage has been determined to occur as a result of the project, the Proponent must carry out rectification at its expense and to the reasonable requirements of the surface and sub-surface structure owner(s) within 12 months of completion of construction unless another timeframe is agreed with the owner of the affected surface or sub-surface structure.

E111 The Proponent must establish an **IPIAP** before works that have the potential to result in property impacts commence. The **IPIAP** must comprise geotechnical and engineering experts independent of the design and construction team. The **IPIAP** will be responsible for independently reviewing **Pre- and Post-construction Condition Survey Report** templates prepared under **Conditions E107 and E109**, any **Pre- and Post-construction Condition Survey Reports** where there is a dispute, and the resolution of property damage disputes, and the establishment of ongoing settlement and vibration monitoring requirements. The Planning Secretary must be notified of the members of the **IPIAP** prior to the commencement of any works which may potentially result in property impacts.

E112 Either the affected owner or the Proponent may refer unresolved disputes arising from potential and/or actual property impacts to the **IPIAP** for resolution. All costs incurred in establishing and implementing the **IPIAP** must be borne by the Proponent regardless of



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which party makes a referral to the **IPIAP**. The findings and recommendations of the **IPIAP** are final and binding on the Proponent.

E113 The governance framework for the **IPIAP** must be made publicly available on the CSSI's project page as required by **Condition B15**.

### SOILS

E114 Prior to the commencement of any work, erosion and sediment controls must be installed and maintained, as a minimum, in accordance with the publication *Managing Urban Stormwater: Soils & Construction* (4<sup>th</sup> edition, Landcom 2004) commonly referred to as the 'Blue Book'.

### Contaminated sites

E115 Prior to the commencement of any work that would result in the disturbance of moderate to high risk contaminated sites as identified in the documented listed in **Condition A1**, a **Detailed Site Investigations** must be undertaken by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand's "Certified Environmental Practitioner" (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia "Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.

E116 A **Detailed Site Investigation Report** must be prepared and submitted to the Planning Secretary for information following the completion of **Detailed Site Investigations** required by **Condition E115**.

The report must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the *Contaminated Land Management Act 1997* (NSW) and prepared by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand's "Certified Environmental Practitioner" (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia "Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.

Nothing in this condition prevents the Proponent from preparing individual Site Contamination Reports for separate sites.

E117 The **Detailed Site Investigation Report** must provide details on:

- (a) primary sources of contamination, for example potentially contaminating activities, infrastructure (such as underground storage tanks, fuel line, sumps or sewer lines) or site practices;
- (b) contaminant dispersal in air, hazardous ground gases, surface water, groundwater, soil vapour, separate phase contaminants, sediments, infrastructure (e.g. concrete), biota, soil and dust;
- (c) contaminant characterisation and behaviour (volatility, leachability, speciation, degradation products and physical and chemical conditions on-site which may affect how contaminants behave);
- (d) potential effects of contaminants on human health, including the health of occupants of built structures (for example arising from risks to service lines from hydrocarbons in groundwater, or risks to concrete from acid sulphate soils) and the environment;
- (e) potential and actual contaminant migration routes including potential preferential pathways;



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- (f) the adequacy and completeness of all information available for use in the assessment of risk and for making decisions on management requirements, including an assessment of uncertainty;
- (g) the review and update of the conceptual site model from the preliminary and detailed site investigations;
- (h) nature and extent of any existing remediation (such as impervious surface cappings); and/or;
- (i) whether the land is suitable (for the intended final land use) or can be made suitable through remediation.

E117A **Disturbance to the existing landfill through the site establishment and operation of the proposed Wicks Road Construction Support Site (Mod 1), as described in Condition A1, is prohibited unless a site auditor agrees to any disturbance.**

E118 Should remediation be required to make land suitable for the final intended land use, a **Remediation Action Plan** must be prepared or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.

The **Remedial Action Plan** must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the *Contaminated Land Management Act 1997* and must include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use when the **Remedial Action Plan** is implemented. The **Remedial Action Plan** must be submitted to the Planning Secretary for information prior to undertaking remediation.

E119 The **Remediation Action Plan** must include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use and detail how the environmental and human health risks will be managed during the disturbance, remediation and/or removal of contaminated soil/sediment or groundwater.

Nothing in this condition prevents the preparation of individual **Remediation Action Plans** for separate sites.

E120 Prior to commencing remediation, a **Section B Site Audit Statement(s)** must be prepared by a NSW EPA-accredited Site Auditor that certifies that the **Remediation Action Plan** is appropriate and that the site can be made suitable for the proposed use. The **Remedial Action Plan** must be implemented and any changes to the **Remedial Action Plan** must be approved in writing by the NSW EPA accredited Site Auditor.

Nothing in this condition prevents the Proponent from engaging the Site Auditor to prepare Site Audit Statements for separate sites.

E121 A **Section A1 or A2 Site Audit Statement** (accompanied by an Environmental Management Plan) and its accompanying **Site Audit Report**, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, must be submitted to the Planning Secretary and Council **after remediation and no later than** prior to the commencement of operation of the CSSI.

Nothing in this condition prevents the Proponent from obtaining Section A Site Audit Statements for individual parcels of remediated land.

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E122 Contaminated land must not be used for the purpose approved under the terms of this approval until a **Section A1** or **A2 Site Audit Statement** is obtained which states that the land is suitable for that purpose and any conditions on the **Section A Site Audit Statement** have been complied with.

E123 An **Unexpected Finds Procedure for Contamination** must be prepared before the commencement of work and must be followed should unexpected contamination or asbestos (or suspected contamination) be excavated or otherwise discovered. The procedure must include details of who will be responsible for implementing the unexpected finds procedure and the roles and responsibilities of all parties involved. The procedure must be submitted to the Planning Secretary for information.

E124 The **Unexpected Finds Procedure for Contamination** must be implemented throughout construction.

### SUSTAINABILITY

E125 A **Sustainability Strategy** must be prepared to achieve a minimum “Excellent” ‘Design’ and ‘As built’ rating under the Infrastructure Sustainability Council of Australia infrastructure rating tool.

E126 The **Sustainability Strategy** must be submitted to the Planning Secretary for information before the commencement of construction and must be implemented throughout construction and operation.

E127 A **Water Reuse Strategy** must be prepared, which sets out options for the reuse of collected stormwater and groundwater during construction and operation. The **Water Reuse Strategy** must include, but not be limited to:

- (a) evaluation of reuse options;
- (b) details of the preferred reuse option(s), including volumes of water to be reused, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required;
- (c) measures to avoid misuse of recycled water as potable water;
- (d) consideration of the public health risks from water recycling; and
- (e) a time frame for the implementation of the preferred reuse option(s).

The **Water Reuse Strategy** must be prepared based on best practice and advice sought from relevant agencies, as required. The Strategy must be applied during construction and operation.

Justification must be provided to the Planning Secretary if it is concluded that no reuse options prevail.

A copy of the **Water Reuse Strategy** must be made publicly available.

**Note:** Nothing in this condition prevents the Proponent from preparing separate **Water Reuse Strategies** for the construction and operational phases of the CSSI.

### TRAFFIC AND TRANSPORT

#### Construction traffic management

E128 Access to all utilities and properties must be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.

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E129 Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier.

E130 Access to the ancillary facility WHT3 construction support site at White Bay by construction vehicles (including light vehicles) must only be via The Crescent/City West Link and James Craig Road. No vehicle associated with the CSSI is permitted to access the site via Robert Street, Rozelle, unless required in the event of an emergency.

E131 **Deleted**

The **Traffic, Transport and Access Management CEMP Sub-plan** must be updated to ensure the requirements of this condition are met.

*Note: For the purposes of this condition, extenuating circumstances does not include for economic reasons.*

E132 Local roads proposed to be used by heavy vehicles to directly access the construction boundary and ancillary facilities that are not shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS, **Figure 7-1 of the Modification 1 Report and Figure 9.2 of the Modification 2 Report, as described in Condition A1** must be approved by the Planning Secretary and included in the **Traffic, Transport and Access Management CEMP Sub-plan**.

E133 All requests to the Planning Secretary under **Condition E132** must include the following:

- (a) a swept path analysis;
- (b) demonstration that the use of local roads by heavy vehicles for the CSSI will not compromise the safety of pedestrians and cyclists or the safety of two-way traffic flow on two-way roadways;
- (c) provide details as to the date of completion of the road dilapidation surveys for the subject local roads;
- (d) measures that will be implemented to avoid where practicable the use of roads past schools, aged care facilities and child care facilities during their peak operation times; and
- (e) written advice from an appropriately qualified professional on the suitability of the proposed heavy vehicle route which takes into consideration items (a), (b), (c), and (d) of this condition.

E134 **deleted**

E135 The locations of all heavy vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one year following the completion of construction.

*Note: Refer to **Condition A47** in relation to vehicle identification.*

### **Construction traffic – Ridge Street, North Sydney**

**135A The number of spoil haulage trucks and concrete trucks exiting from the Ridge Street construction ancillary facility (WHT9) between the hours of 10:00 pm and 7:00 am, Monday to Sunday and travelling westbound along Falcon Street, is limited to a total of 100 vehicles per night unless an alternative number of vehicle movements is permitted through an Environment Protection Licence.**

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**Measures must be put in place to monitor the number of spoil and concrete trucks making this movement.**

**Details on the number of movements must be provided to the EPA and the Planning Secretary on request, within one week of the EPA and the Planning Secretary making the request.**

## **Road Dilapidation**

E136 Before any local road is used by a heavy vehicle for the purposes of the CSSI, a **Road Dilapidation Report** must be prepared for the road. A copy of the **Road Dilapidation Report** must be provided to the relevant council within three weeks of completion of the survey and no later than one month prior to the road being used by heavy vehicles associated with the CSSI.

E137 If damage to roads occurs as a result of the CSSI, the Proponent must either (at the relevant road authority's discretion):

- (a) compensate the relevant road authority for the damage so caused; or
- (b) rectify the damage to restore the road to at least the condition it was in pre-works as identified in the **Road Dilapidation Report(s)**.

## **Pedestrian and Cyclist Access**

E138 Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternative route which complies with relevant standards, unless otherwise endorsed by an independent, appropriately qualified and experienced person, must be provided (including signposting) prior to the restriction or removal of the impacted access.

## **Construction Parking Management**

E139 Vehicles (including light and heavy vehicles) associated with the CSSI must be managed to:

- (a) minimise parking on public roads;
- (b) minimise idling and queueing on state and regional roads;
- (c) not carry out marshalling of construction vehicles near sensitive land user(s);
- (d) not block or disrupt access across pedestrian or shared user paths at any time; and
- (e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the **Traffic, Transport and Access Management CEMP Sub-plan**.

E140 A **Construction Parking and Access Strategy** must be prepared to identify and mitigate impacts resulting from on- and off-street parking changes during construction of the CSSI. The Strategy must include, but not necessarily be limited to:

- (a) achieving the requirements of **Condition E139**;
- (b) confirmation and timing of the removal of on- and off-street parking associated with construction of the CSSI;
- (c) parking surveys of all parking spaces to be removed or occupied by the CSSI workforce to determine current demand during peak, off-peak, school drop off and pickup, weekend periods and during special events;
- (d) consultation with affected stakeholders utilising existing on- and off-street parking stock which will be impacted as a result of construction;

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- (e) assessment of the impacts to on- and off-street parking stock taking into consideration, occupation by the CSSI workforce, outcomes of consultation with affected stakeholders and considering the impacts of special events;
- (f) identification of mitigation measures to manage impacts to stakeholders as a result of on- and off-street parking changes including, but not necessarily limited to, staged removal and replacement of parking, provision of alternative parking arrangements, managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds or appropriate residential parking schemes;
- (g) where residential parking schemes already exist, off-road parking facilities must be provided for the CSSI workforce;
- (h) mechanisms for monitoring, over appropriate intervals, to determine the effectiveness of implemented mitigation measures;
- (i) details of shuttle bus service(s) to transport the CSSI workforce to construction sites from public transport hubs and off-site car parking facilities (where these are provided) and between construction sites;
- (j) provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective; and
- (k) provision of reporting of monitoring results to the Planning Secretary and relevant council(s) at three monthly intervals.

The **Construction Parking and Access Strategy** must be submitted to the Planning Secretary for approval at least one month before the commencement of any construction that reduces the availability of existing parking. The approved Strategy must be implemented before impacting on on-street parking and incorporated into the **Traffic, Transport and Access Management CEMP Sub-plan**.

E141 During construction, all reasonably practicable measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses and implemented prior to the disruption. Adequate signage and directions to businesses must be provided prior to, and for the duration of, any disruption.

### **Reinstatement of Car Parking on Alfred Street North**

E142 The Proponent must mitigate the loss of on-street parking in Alfred Street North (specifically between Wyagdon Street and Whaling Road), Neutral Bay during construction and operation of the CSSI, with the objective of having no impact to resident parking during operation, by:

- (a) confirming existing capacity and the parking requirements of the residents by survey;
- (b) investigating options to mitigate the loss of on-street parking that meet the parking needs of the residents of Alfred Street North and adjacent streets;
- (c) consulting with the residents at locations where on-street parking would be lost to confirm the preferred parking options; and
- (d) identifying the parking measures to be implemented.

A report on the outcomes of this condition must be documented and submitted to the Planning Secretary for approval within six months of construction commencing.

E143 The parking measures identified by **Condition E142**, must be delivered prior to impact, unless otherwise agreed by the Planning Secretary.

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**Note:** Identified mitigation measures may need to be further assessed under the *Environmental Planning and Assessment Act, 1979*.

## Road Safety

E144 The CSSI must be designed to meet relevant design, engineering and safety guidelines, including the *Austrroads Guide to Traffic Management* for new or modified local roads, parking, pedestrian and cycle infrastructure.

E145 An independent **Road Safety Audit** must be undertaken 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 *Austrroads Guide to Traffic Management*.

The audit must be undertaken by an appropriately qualified and experienced person during detailed design development (audit of plans) and prior to opening (pre-opening audit).

The audit findings and recommendations of the detailed design plans (audit of the plans) must be actioned prior to construction of the relevant infrastructure. The pre-opening audit findings and recommendations must be actioned prior to the relevant infrastructure being made available for use.

## Access from Mount Street Interchange to Alfred Street North

E146 Direct vehicular access must be provided from Mount Street, North Sydney to Alfred Street North, Neutral Bay. Access must be provided in both directions.

## Road Network Performance

E147 The Proponent must prepare a **Road Network Performance Plan** in consultation with the relevant council(s). The Plan must incorporate operational traffic modelling results from the operation of major motorways including but not limited to WestConnex M4-M5 Link (SSI 7485) and WestConnex M8 (SSI 6788) projects (including any Road Network Performance Plan or Operational Road Network Performance Review prepared) and include:

- (a) consideration of movement and place analysis and local initiatives, such as local area improvement strategies, potential land use changes, and any traffic changes as a result of other major projects in the vicinity of the project area;
- (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;
- (c) an assessment of the performance of the road network, including:
  - (i) potential “pinch-points” where the merging of tunnel exit traffic and surface traffic would occur at Rozelle or along the Warringah Freeway;
  - (ii) traffic movements and congestion at various intersections in North Sydney, Cammeray and Rozelle/Annandale;
  - (iii) results of the **Public Transport Review** as required by **Condition E153**; and
- (d) mitigation measures to manage predicted traffic performance impacts including local area traffic management and bus priority measures as relevant.

The **Road Network Performance Plan** must be submitted to the Planning Secretary and relevant council(s) for information six months prior to the operation of the CSSI. The mitigation measures in the Plan must be implemented by the Proponent before the operation of the CSSI. The Proponent is responsible for the implementation of identified measures under (c) above.

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*Note: Identified mitigation measures may need to be further assessed under the Environmental Planning and Assessment Act, 1979. Work will need to meet relevant design standards and be subject to independent road safety audits.*

E148 The Proponent must prepare an **Operational Road Network Performance Review**, within 12 months and again within five years after the commencement of operation of the CSSI. The Review must address road network performance and review the effects of the CSSI on the adjoining road network. The Review must confirm whether the mitigation measures identified in the **Road Network Performance Plan** required under **Condition E147** are adequate.

The Review must be undertaken in consultation with relevant council(s) and be completed within six months of the review timeframes. The Review must be provided to the Planning Secretary within 60 days of its completion.

The identification of further mitigation measures, if required, must be included in the Review. The Proponent is responsible for the implementation of the identified measures.

*Note: Identified mitigation measures may need to be further assessed under the Environmental Planning and Assessment Act, 1979. Work will need to meet relevant design standards and subject to independent road safety audits.*

## **Public Transport - Construction**

E149 Where bus stops are required to be temporarily closed, such closure must not occur until relocated bus stops that comply with relevant standards, are functioning, have similar capacity and amenity 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 relevant council(s). Wayfinding signage must be provided directing commuters to adjacent or relocated bus stops. Footpaths and (where required) road crossing facilities must be provided to any relocated bus stops such that accessibility and safety standards are met.

E150 Prior to the commencement of operation, all bus stops temporarily closed must be reinstated in a manner that complies with relevant standards, provides equal or improved capacity, amenity and accessibility (including footpaths and road crossings) in consultation with relevant council(s).

E151 deleted

E152 deleted

## **Public Transport – Operational Performance Measures**

E153 A **Public Transport Review** must be prepared that identifies the following matters:

- (a) confirmation and comparison of journey times during peak periods, within the year of opening and 10 years post opening, associated with bus routes that will interact with the CSSI (including those that operate within or across the project footprint or along strategic bus corridors that would have changed journey times resulting from the CSSI), with and without the CSSI; and
- (b) measures that have been or can be implemented so that when compared to the without CSSI journey times, the CSSI would assist in:
  - (i) improved or maintained bus journey times on opening of the CSSI; and
  - (ii) maintaining bus journey times 10 years post-opening.



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A report of the **Public Transport Review** must be made publicly available six months prior to operation of the CSSI.

## UTILITIES MANAGEMENT

### Utility Coordination Manager

E154 A **Utility Coordination Manager** must be appointed for the duration of the CSSI Work. The role of the **Utility Coordination Manager** must include, but not be limited to:

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

## PLACE DESIGN AND VISUAL AMENITY

### Construction Ancillary Facilities

E155 The CSSI must be constructed in a manner that minimises visual impacts of construction sites, including providing temporary landscaping and vegetative screening of the construction sites, minimising light spill, and incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located.

### General Design Outcomes

E156 The place making, design and landscape outcomes of the CSSI must be informed by and be consistent with Appendix V of the EIS, including but not limited to the objectives and design principles, requirements and opportunities.

E157 The CSSI must result in a net increase in usable open space. Replacement space must be in the general vicinity of the loss, unless agreed to by the Planning Secretary.

### Specific Design Outcomes

**E158 deleted**

E159 The Falcon Street bus on ramp must be refined during detailed design to mitigate visual and amenity impacts in consultation with those affected residential property owners of lots adjacent to where ramps extend beyond the existing (as at the date of this approval) top edge of the eastern rockface of the of the Warringah Freeway and to the satisfaction of the Planning Secretary.

The final design of the Falcon Street bus on ramp must form part of the **PDLP**.

**Note:** When seeking the Planning Secretary's satisfaction, the design must demonstrate how visual and amenity impacts (including: bulk, views, light spill, headlight glare and noise impacts) have been mitigated in consultation with the impacted residents. The submission must include how residents' comments have been addressed and any agreement with the residents on the final design.

E160 Following the completion of the use of the St Leonards Park for ancillary facility WHT9, the site must be returned to public open space in consultation with North Sydney Council, to maximise usable open space.



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E161 The existing Ridge Street Lookout must form part of the design of the replacement Ridge Street Shared User Bridge.

### North Sydney CBD

E162 The CSSI must not preclude the delivery of the objectives proposed by the North Sydney Integrated Transport Program in consultation with the Government Architect NSW and North Sydney Council.

### Lighting and Security

E163 The Proponent must construct and operate the CSSI with the objective of minimising light spillage to surrounding properties. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of *AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting* and relevant Australian Standards in the series *AS/NZ 1158 – Lighting for Roads and Public Spaces*. Additionally, the Proponent must provide mitigation measures to manage any residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.

### Design Review Panel

E164 The Proponent must establish an independent **Design Review Panel** which must operate during detailed design and during construction. The process for the operation of the Panel, including the Panel's Terms of Reference and frequency of meetings, must be agreed to with the NSW Government Architect prior to the establishment of the **Design Review Panel**.

The Terms of Reference must be consistent with the State Design Review Panel.

E165 The **Design Review Panel** must provide advice and recommendations on the detailed design. The responsibilities of the Design Review Panel include:

- (a) provide advice and recommendations for consideration in the development of the **Place, Design and Landscape Plan (PDLP)** required by **Condition E177**;
- (b) provide advice on the application of the objectives to key design elements in relation to place making, architecture, heritage, urban and landscape design and artistic aspects of the CSSI; and
- (c) provide advice on structures including bridges and flyovers (including the Alfred Street flyover and walking and cycling bridges across the Warringah Freeway).

The Panel's advice must be consistent with the CSSI as approved.

E166 The **Design Review Panel** must be chaired by the NSW Government Architect (or its nominee), and must be comprised of, where relevant, a suitably qualified, experienced and independent professional in each of the fields of:

- (a) urban design and place making (including active transport);
- (b) landscape architecture;
- (c) architecture; and
- (d) Aboriginal cultural heritage, non-Aboriginal cultural heritage.

The Panel may seek advice from suitably qualified, experienced independent professionals in other fields as required.

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- E167 Panel members must be sourced from the State Design Review Panel Pool, approved by the Government Architect NSW (or its nominee). These panel members must be involved in the development and review of the **PDLP** required by **Condition E177**.
- E168 Advice letters by the Design Review Panel Members and logs which demonstrate how each piece of advice is considered and addressed, must be included when submitting the **PDLP** to the Planning Secretary for approval.
- E169 The Proponent must nominate an appropriately qualified and experienced representative of Transport for NSW to act as advisor to the **Design Review Panel**. The advisor must be invited to attend all meetings of the Panel. The advisor may also be invited by the Panel to assist with decisions regarding the Panel's recommendations.
- E170 Other representatives of the Proponent and its contractor(s) may be invited to attend the Panel meetings as observers or to provide technical advice.
- E171 The relevant council may be invited to the meetings of the Panel as observers or to provide feedback on key design elements of the CSSI.
- E172 Observers and the Proponent's representative should not be present while the Panel is deciding upon its recommendations unless requested by the Panel.
- E173 The Proponent must provide independent secretarial resources to the Panel.
- E174 Once the **Design Review Panel** is formed, 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 Planning Secretary for information and:
- (a) establish governance and protocols for the operation of the **Design Review Panel**;
  - (b) include a Code of Conduct;
  - (c) outline the agreed frequency of **Design Review Panel** meetings, coordinated with the Proponent's program requirements, to ensure timely advice and design adjustment;
  - (d) outline secretariat functions and administration including the recording and storing of meeting agendas, minutes and actions; and
  - (e) identify cessation arrangements.
- E175 The **Design Review Panel** must 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).
- E176 The Proponent must provide to the **Design Review Panel** the design development schedule, including details of when relevant elements of the detailed design will be available for review by the Panel. The schedule must be updated every three months until the detailed design process is complete.

### Place, Design and Landscape Plan

- E177 A **PDLP** must be prepared to inform the final design of the CSSI and to give effect to the outcomes informed by **Condition E156** and design review. The Plan does not apply to work, which for technical, engineering, or ecological requirements, or other requirements as agreed by the Planning Secretary, do not allow for alternative design outcomes.

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E178 The **PDLP** must be prepared by a suitably qualified and experienced person in consultation with relevant councils, the community and affected landowners and businesses. The **PDLP** must include:

- (a) outcomes from the **Design Review Panel** as required by **Condition E165**;
- (b) an analysis of the built, natural and community context and the urban design objectives, principles and standards for the CSSI;
- (c) the design of the CSSI elements including their form, materials and detail, with a focus on high quality bridge design, public space, and integrated art;
- (d) the design of the project landform and earthworks;
- (e) the design of usable open space;
- (f) the location of existing vegetation, areas of vegetation to be retained and proposed planting and seeding details, including the use of local indigenous species for revegetation activities;
- (g) the location of existing heritage items;
- (h) details of how Aboriginal and non-Aboriginal heritage (including maritime) interpretation and public art are incorporated within the design of built features, having regard to the results of any archaeological investigations;
- (i) visual screening requirements;
- (j) design of the Falcon Street bus on ramp as required by **Condition E159**;
- (k) developed visuals, cross sections and plans showing the proposed design outcome;
- (l) details of strategies to rehabilitate, regenerate or revegetate disturbed areas; and
- (m) management and routine maintenance standards and regimes for design elements and landscaping work (including weed management) to ensure the success of the design and landscape outcomes.

E179 The **PDLP**, and any 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 **PDLP** (including evidence of response to the **Design Review Panel's** advice) to the Planning Secretary for approval no later than one month before the construction of permanent work that is the subject of the **PDLP (s)** (in the area to which the **PDLP** applies).

E180 Unless otherwise agreed with the Planning Secretary, construction of permanent built work or landscaping that are the subject of the **PDLP** must not be commenced (in the area to which the **PDLP** applies) until the **PDLP** has been approved by the Planning Secretary, after considering advice received from the **Design Review Panel**.

E181 The **PDLP**, as approved by the Planning Secretary, must be implemented during construction and operation.

### **Operational Noise Barriers Design**

E182 Operational noise barriers must be designed to minimise visual and amenity impacts and be designed in accordance with the *Noise wall design guideline – Design guideline to improve the appearance of noise walls in NSW* (RMS, March 2016).

E183 The construction of the Massey to Amherst Street, Cammeray noise barrier / wall as identified in **APPENDIX C** does not form part of the **PDLP**.

### **Tree Removal, Replacement Plantings and Rehabilitation**

E184 The CSSI must be designed to retain as many existing trees as possible. Replacement trees and plantings must be provided at a ratio of 2:1 and deliver an increase in tree canopy and aim to enhance the relevant council's position in respect of the Sydney Green Grid, unless otherwise agreed by the Planning Secretary.

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E185 Replacement trees must:

- (a) be located on public land and prioritised within 500 metres of the Construction Boundary, that delivers increased shading to footpaths, pedestrian and cycle paths;
- (b) be of a species suitable to the location, having regard for local ecology and existing street trees;
- (c) meet the requirements for quality tree stock specified in the *AS2303:2018: Tree Stock for Landscape Use*;
- (d) be provided no later than six months following the commencement of operation; and
- (e) have a minimum pot size consistent with the relevant council's plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant council(s).

E186 Replacement and enhancement of vegetative screening along the project corridor must be undertaken in a progressive manner during construction to allow for the early establishment of vegetative screening.

E187 A **Landscape Strategy Report** must be prepared which details the type, size, number and location of replacement trees. The report must demonstrate how any replacement plantings are consistent with the requirements of **Condition E184** and **Condition E185**.

The report must be submitted to the Planning Secretary for information no later than nine months following the commencement of operation.

### Yurulbin Bay

E188 ~~deleted~~

### Berrys Bay

E189 The Proponent must engage a suitably qualified and experienced landscape architect to develop the design of the open space at ~~WHT7 Berrys Bay~~. The design must be provided as part of the **PDLP**.

E190 The design required by **Condition E189** must include an extended path along the foreshore between Carradah Park and Balls Head Road, using the same or similar materials to those used for pathways within Carradah Park to ensure continuity along the foreshore in this location.

E191 Public domain works as required by **Condition E189** and **E190** must be ~~undertaken as soon as practicable following the completion of the use of the Park of the use of the Park for ancillary facility~~ ~~WHT7~~ **completed prior to the operation of the tunnel unless otherwise agreed by the Planning Secretary.**

### Operational Maintenance

E192 The ongoing maintenance and operation costs of urban design, open space, landscaping and recreational items and work implemented as part of this approval remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Before the transfer of assets, the Proponent must maintain items and work to at least the design standards established in the **PDLP**, required by **Condition E178**.

The Planning Secretary must be advised of the date of transfer of the asset(s) to the relevant authority.

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E193 Should any plant loss occur during the maintenance period the plants should be replaced by the same plant species unless it is determined by a suitably qualified person that a different species is more suitable for that location.

E194 Management and routine maintenance for design elements and landscaping work (including weed management) to ensure the success of the design and landscape outcomes must be undertaken for the life of the CSSI.

### Active Transport Network

E195 An **Active Transport Network Review** must be prepared in consultation with relevant Councils, Bicycle NSW and Bike North. The **Active Transport Network Review** must review active transport infrastructure within at least 500m of the Warringah Freeway corridor component of the CSSI and include:

- (a) an analysis of the existing cycling network, including the identification of routes between existing and potential trip generators;
- (b) an analysis of existing and expected patronage levels of current and proposed routes;
- (c) identification of capacity constraints or missing links in the existing and proposed networks, including consideration of both State and Council cycling strategies and maps (including draft strategies) and expected demand;
- (d) a calculation of pedestrian crowding and the suitability of shared facilities; and
- (e) a list of recommendations and the timeframes for implementation to address the findings of (a), (b), (c) and (d) above.

The **Review** must be provided to the Planning Secretary for approval within 12 months of commencement of construction.

*Note: Implementation timeframes must be reasonable, reflect network needs, and the objective of offsetting open space impacts (particularly in relation to open space impacts at Cammeray).*

E196 The recommendations identified in **Condition E195(e)** must be implemented by the Proponent in the timeframes approved by the Planning Secretary.

E197 An active transport link through Cammeray Golf Course between Ernest Street and Warringa Road / Bells Avenue, Cammeray must be provided prior to the removal of the existing path.

E198 An active transport link from Cammeray Golf Course to Primrose Park, must be considered as part of the **Active Transport Network Review** as required by **Condition E195**.

E199 A level extension of the existing footpath along the eastern side of the Cahill Expressway from the top of the stairs near the former toll gantry in Kirribilli, to the existing pedestrian crossing on High Street, North Sydney must be considered as part of the **Active Transport Network Review** required by **Condition E195**.

E200 The Proponent must investigate alternative crossings of the Falcon Street diverging diamond interchange, including but not limited to consideration of an overpass, reduction in the number of crossings or priority phasing of traffic lights for pedestrians and cyclists.

The investigations must be provided as a report and submitted to the Planning Secretary for approval, within six months from the commencement of construction. The findings of the investigations must be implemented following Planning Secretary approval.

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## WASTE

E201 Waste generated during construction and operation must be dealt with in accordance with the following priorities:

- (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced;
- (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and
- (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.

E202 The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, as the case may be.

E203 Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, or to any other place that can lawfully accept such waste.

E204 deleted

E205 All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.

## WATER

E206 The CSSI must be designed, constructed and operated so as to maintain the *NSW Water Quality Objectives* where they are being achieved as at the date of this approval, and contribute towards achievement of the *NSW Water Quality Objectives* over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the CSSI contains different requirements in relation to the *NSW Water Quality Objectives*, in which case those requirements must be complied with.

### Construction Requirements

E207 The Proponent must consider the *Guidelines for controlled activities on waterfront land Riparian corridors* (Department of Industry 2018) when carrying out work within 40 metres of a watercourse, including its bed.

E208 Unless an EPL is in force in respect to the CSSI and that licence specifies alternative criteria, discharges from construction water treatment plants to surface waters must not exceed:

- (a) the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018* (ANZG 2018) default guideline values for toxicants at the 90 per cent species protection level;
- (b) for physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000*; and
- (c) for bioaccumulative and persistent toxicants, the *ANZG 2018* values at a minimum of 95 per cent species protection level.

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Where the ANZG 2018 does not provide a default guideline value for a particular pollutant, the approaches set out in the ANZG 2018 for deriving guideline values, using interim guideline values and/or using other lines of evidence such as international scientific literature or water quality guidelines from other countries, must be used.

E209 A replacement stormwater harvesting storage facility / dam must be provided within the boundaries of Cammeray Golf Course in consultation with North Sydney Council and Cammeray Golf Club (at no cost to either party). Should the new stormwater harvesting storage facility not be operational prior to the dewatering of the existing dam, the Proponent must pay all water usage costs (associated with the use of the harvesting storage facility / dam) incurred by Council or the golf club until the replacement facility is operational.

**Note: Condition C6(f)** provides requirements for relocating native fauna species within and around the stormwater harvesting storage facility / dam.

E210 If construction stage stormwater discharges are proposed, a water pollution impact assessment will be required to inform licensing consistent with section 45 of the POEO Act. Any such assessment must be prepared in consultation with the EPA and be consistent with the National Water Quality Guidelines, with a level of detail commensurate with the potential water pollution risk.

### Operational Requirements

E211 Unless an EPL is in force in respect to the CSSI and that licence specifies alternative criteria, discharges from operation water treatment plants to surface waters must not exceed:

- (a) the ANZG 2018 default guideline values for toxicants at the 95 per cent species protection level;
- (b) for physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC/ARMCANZ, 2000); and
- (c) for bioaccumulative and persistent toxicants, the ANZG 2018 guideline values at a minimum of 99 per cent species protection level.

Where the ANZG 2018 does not provide a default guideline value for a particular pollutant, the approaches set out in the ANZG 2018 for deriving guideline values, using interim guideline values and/or using other lines of evidence such as international scientific literature or water quality guidelines from other countries, must be used.

### Dredging

E212 deleted

E213 deleted

E214 deleted

E215 deleted

### Groundwater

E216 The Proponent must take measures to limit operational groundwater inflows into each tunnel to no greater than one litre per second across any given kilometre (1L/s/km).



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Compliance with this condition cannot be determined by averaging groundwater inflows across the length of the tunnel(s).

- E217 Make good provisions for groundwater users must be provided in the event of a material decline in water supply levels, quality or quantity from registered existing bores associated with groundwater changes from either construction and/or ongoing operational dewatering caused by the CSSI.
- E218 Further modelling must be undertaken of groundwater drawdown, tunnel inflows and saline water migration (using particle tracking) prior to finalising the detailed design of the tunnels and undertaking any works that would impact on groundwater flows or levels. The modelling must be undertaken in consultation with **DPE Water** and include the results and hydrogeological analyses of at least 12 continuous months of current baseline groundwater monitoring data.
- E219 The results of the modelling required by **Condition E218** 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), be independently peer reviewed by an expert (agreed to by **DPE Water**), and prepared in consultation with **DPE Water**. The **Groundwater Modelling Report** must include, but not be limited to:
- (a) modelling for groundwater flow for one, three and 12 months following the commencement of construction in each kilometre of tunnel and during operation;
  - (b) justification for the conceptual model adopted and layer choice;
  - (c) a more representative distribution of rock mass permeability than the modelling results detailed in the documents referred to in **Condition A1**;
  - (d) a revised distribution of rock mass permeability with transient drawdown predictions during excavation and dewatering assessed for sensitivity to assumed values of aquifer confinement and storage (specific storage and specific yield);
  - (e) 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;
  - (f) an explanation of how groundwater flow was simulated within each model layer with reference to confined, unconfined or variably saturated flow solutions;
  - (g) an explanation and justification of the drain-cell conductance term(s) applied to the tunnel boundaries to limit tunnel inflows;
  - (h) 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;
  - (i) details (including figures) of the expected changes in groundwater flow directions in the vicinity of landfills, groundwater wells and surface water receptors;
  - (j) cross-section diagrams of geology showing baseline groundwater levels in the monitoring piezometers, and for the predicted baseline condition groundwater levels in 2030 and 2100;
  - (k) statistical evaluation of the model's calibration;
  - (l) details of the groundwater monitoring data inputs (levels and quality);
  - (m) details of the proposed groundwater model update and validation as additional data is collected;
  - (n) 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;
  - (o) references to the differences between modelled and observed groundwater impacts for previous tunnelling projects in the Sydney Basin including the WestConnex New



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- M5 (M8), the WestConnex M4 East and the WestConnex M4-M5 Link projects (where the information can be made available);
- (p) a comparison of the results with the modelling results detailed in the documents referred to in **Condition A1**;
  - (q) documentation of any additional measures that would be implemented to manage and/or mitigate groundwater impacts not previously identified or identified but at a smaller scale;
  - (r) a quantitative assessment of model predictive uncertainty at locations of primary importance for predictions of drawdown induced settlement, contaminant mobilization, and impact to surface water systems; and
  - (s) quantitative predictions of contaminant mobilization risk by providing groundwater model based predictions of the changes in groundwater gradient magnitude and direction at identified contaminant sites due to construction and operation or particle tracking simulations.

A copy of the **Groundwater Modelling Report** (including the independent peer review) must be submitted to the Planning Secretary for information prior to finalising the tunnel design. The **Groundwater Modelling Report** must include details of consultation with **DPE Water**.

The calibration and modelling to be provided to the independent peer reviewer and **DPE Water** must be in an electronic quality controlled data ready-to-use format.

*Note: The new modelling results could include analysis of the available field data and existing model calibration residuals to infer the differences between rock mass primary permeability (low) and secondary permeability (high) in areas where valley uplift has occurred and where dykes have intruded through weaker rock. The numerical model calibration could then be revised to potentially improve the calibration to observed data and local-scale predictions.*

E220 The groundwater model must be updated once 24 months of groundwater monitoring data are available and the results of the updated modelling (assessed against all predicted outcomes of the **Groundwater Modelling Report** that accompanied the final detailed design of the tunnels) be provided to the Planning Secretary and **DPE Water** in an updated **Groundwater Modelling Report**.

E221 The total incidental groundwater take from the tunnel should be measured at a minimum monthly and totalled yearly for the life of the CSSI. These volumes must be reported to **DPE Water** annually.

### **Stormwater Drainage**

E222 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 **Stormwater Drainage Report** required under **Condition E223**.

E223 The **Stormwater Drainage Report** must be prepared at least one month prior to the commencement of any new permanent 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 **Stormwater Drainage Report** must:

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- (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;
- (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
- (c) set out a clear time frame for the implementation of mitigation measures.

Nothing in this condition prevents the Proponent from preparing separate **Stormwater Drainage Reports** for pavement discharges or wastewater discharges from operational water treatment plants to the drainage system provided that each report is prepared at least one month prior to the subject works/discharges commencing.

E224 All new or modified drainage systems associated with the CSSI must be designed to:

- (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);
- (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
- (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.

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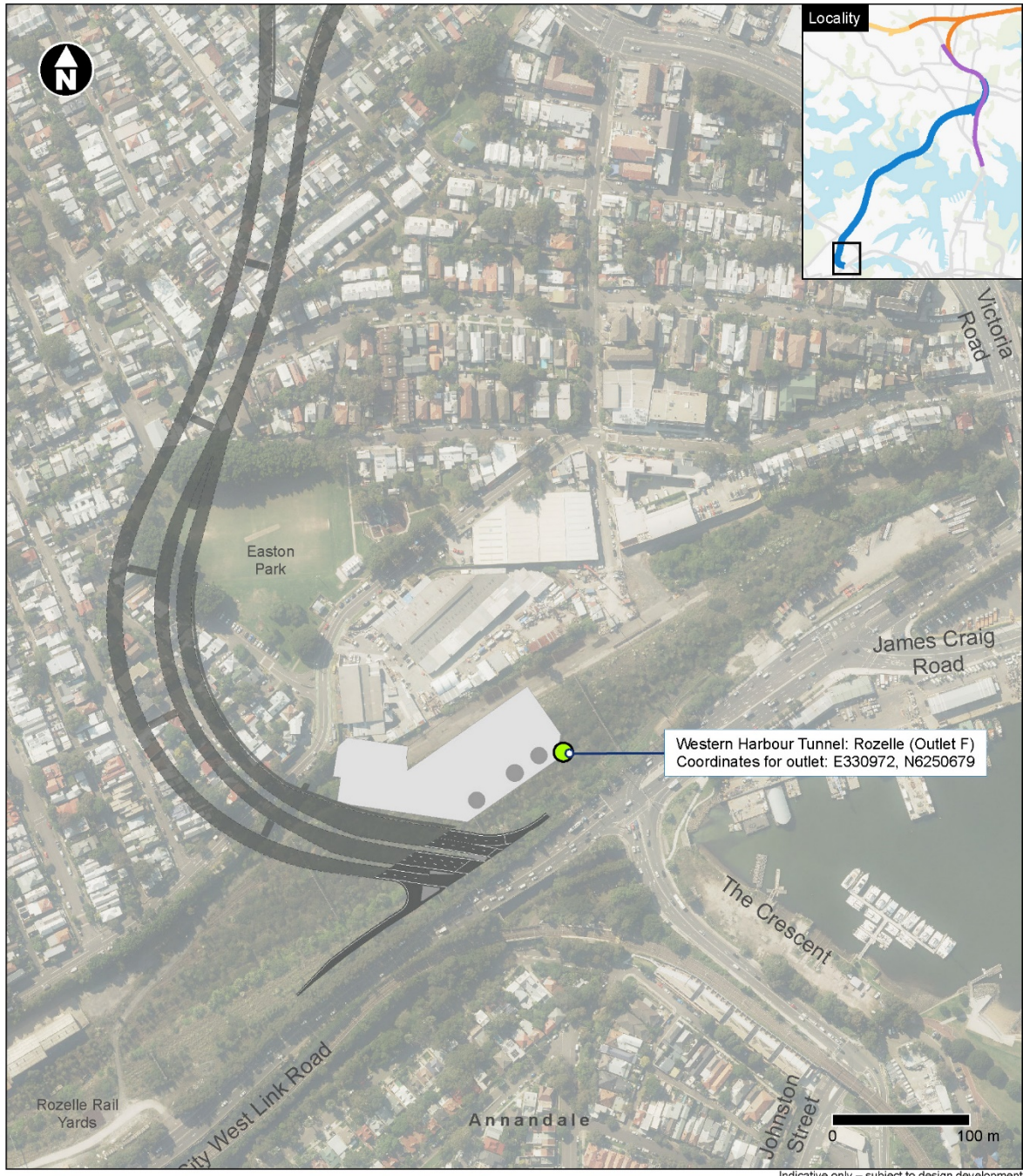
## APPENDIX A

### WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be submitted to the Department via the Major Projects website within seven days after the Proponent becomes aware of an incident. Notification is required to be given under this condition even if the Proponent fails to give the notification required under **Condition A44** or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
  - (a) identify the CSSI and application number;
  - (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
  - (c) identify how the incident was detected;
  - (d) identify when the Proponent became aware of the incident;
  - (e) identify any actual or potential non-compliance with terms of the approval;
  - (f) describe what immediate steps were taken in relation to the incident;
  - (g) identify further action that will be taken in relation to the incident; and
  - (h) identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
  - (a) a summary of the incident;
  - (b) outcomes of an incident investigation, including identification of the cause of the incident;
  - (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
  - (d) details of any communication with other stakeholders regarding the incident.

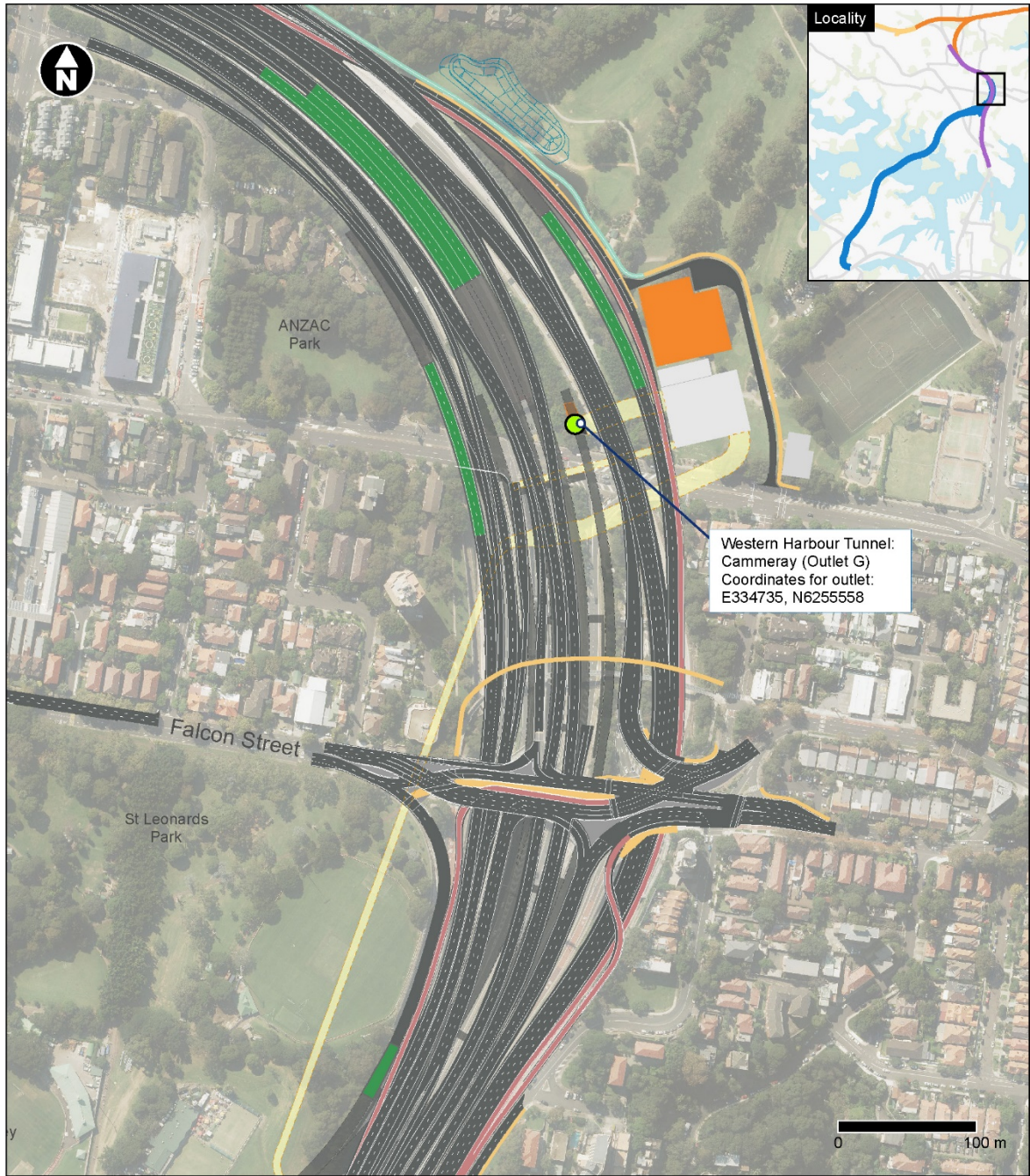
APPENDIX B

TUNNEL VENTILATION OUTLETS LOCATION





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APPENDIX C

MASSEY TO AMHERST STREET NOISE BARRIER LOCATION

