

Infrastructure approval

Section 5.19 of the *Environmental Planning & Assessment Act 1979*

I grant approval to the carrying out of the critical State significant infrastructure (CSSI) referred to in Schedule 1, subject to the conditions in Schedule 2.


Minister for Planning and Public Spaces

Sydney

18th December

December 2019

SCHEDULE 1

Application no.:	SSI 8931
Proponent:	Transport for NSW (Road and Maritime Services)
Approval Authority:	Minister for Planning and Public Spaces
Land:	Land in the suburbs of St Peters, Sydenham, Tempe, Wolli Creek, Earlwood, Turrella, Bardwell Park, Bardwell Valley, Bexley, Arncliffe, Banksia, Kyeemagh, Rockdale, Brighton-le-Sands, Monterey and Kogarah.
Description of Critical State Significant Infrastructure:	<p>The construction and operation of a new multi lane road link between the New M5 at Arncliffe and President Avenue at Kogarah including:</p> <ul style="list-style-type: none">• twin tunnels with entry and exit ramps, an intersection at President Avenue and associated works to upgrade the surrounding road network, and cycle and pedestrian pathways;• lane markings of 2 additional lanes in each carriageway of the New M5 tunnels, resulting in 4 lanes in each carriageway, from the St Peters interchange to the connection with the F6 Extension Stage 1 tunnels at Arncliffe;• the construction and operation of a new power line, commencing at Earlwood and ending at Rockdale, to power the twin tunnels between Arncliffe and Kogarah; and• ancillary development.
Declaration as Critical State Significant Infrastructure:	<p>The proposal is critical State Significant Infrastructure by virtue of Schedule 5, clause 11 of <i>State Environmental Planning Policy (State and Regional Development) 2011</i>.</p>

TABLE OF CONTENTS

SCHEDULE 1	1
DEFINITIONS AND TERMS	4
SUMMARY OF REPORTING AND APPROVAL REQUIREMENTS	10
SCHEDULE 2	14
PART A	14
ADMINISTRATIVE CONDITIONS	14
GENERAL	14
INDEPENDENT APPOINTMENTS	15
STAGING	15
ANCILLARY FACILITIES	16
SITE ESTABLISHMENT WORKS	16
ENVIRONMENTAL REPRESENTATIVE	17
ACOUSTICS ADVISOR	18
COMPLIANCE MONITORING AND REPORTING PROGRAM	20
AUDITING	20
IDENTIFICATION OF WORKFORCE AND COMPOUNDS	21
PART B	22
INFORMATION AND REPORTING	22
INFORMATION, CONSULTATION AND INVOLVEMENT	22
COMPLAINTS MANAGEMENT SYSTEM	22
PROVISION OF ELECTRONIC INFORMATION	24
PART C	25
CONSTRUCTION ENVIRONMENTAL MANAGEMENT	25
CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN	25
CONSTRUCTION MONITORING PROGRAMS	28
PART D	31
OPERATIONAL ENVIRONMENTAL MANAGEMENT	31
OPERATIONAL ENVIRONMENTAL MANAGEMENT	31
OPERATIONAL MONITORING PROGRAM	31
PART E	34
KEY ISSUE CONDITIONS	34
AIR QUALITY AND ODOUR	34
BIODIVERSITY	42
FLOODING	44
HAZARDS AND RISK	44
HERITAGE	46
NOISE AND VIBRATION	46

PROPERTY, LANDUSE AND SOCIO-ECONOMIC IMPACTS	52
SOILS	55
SUSTAINABILITY	56
TRAFFIC, TRANSPORT AND ACCESS	56
URBAN DESIGN AND PLACE MAKING	59
UTILITIES MANAGEMENT	63
WASTE	63
WATER	64

DEFINITIONS AND TERMS

The definitions and terms below (**Table 1**) apply to terms used in this approval, unless otherwise stated or the context indicates otherwise.

Table 1: Definitions and Terms

Term	Definition
AA	Acoustics Advisor for the CSSI.
Aboriginal object	The same meaning as in the <i>National Parks and Wildlife Act 1974 (NSW)</i> .
AHD	Australian Height Datum
Ancillary facility	<p>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 and material stockpile area.</p> <p><i>Note: Where a CEMP has been approved by the Planning Secretary and it includes a stockpile management protocol, a temporary material stockpile located within the construction boundary is not an ancillary facility.</i></p>
AQIR	Air Quality Independent Reviewer
AQCCC	Air Quality Community Consultative Committee
At-property treatment	Acoustic treatments including those described in Section 7.3 of the <i>Noise Mitigation Guideline</i> (TfNSW(RMS), 2015) and other other treatments including, but not limited to, noise curtains and retrofitted double glazing.
CASA	Civil Aviation Safety Authority
CEMP	Construction Environmental Management Plan
Completion of construction	The date upon which all 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	<p>Includes all works required to construct the CSSI as described in the EIS and PIR, including commissioning trials of equipment and temporary use of any part of the CSSI, but excluding the following low impact work which is completed prior to approval of the CEMP:</p> <ul style="list-style-type: none"> (a) survey works including carrying out general alignment survey, installing survey controls (including installation of global positioning systems (GPS)), installing repeater stations, carrying out surveys of existing and future utilities and building and road dilapidation surveys; (b) investigations including investigative drilling, contamination investigations and excavation; (c) site establishment works approved under a Site Establishment Management Plan;

Term	Definition
	<p>(d) establishment and operation of minor ancillary facilities if the ER has determined the operational activities will have minimal impact on the environment and community in accordance with Condition A19;</p> <p>(e) minor clearing and relocation of native vegetation, as identified in the EIS and PIR;</p> <p>(f) installation of mitigation measures including noise (excluding acoustic sheds), erosion and sediment controls and temporary exclusion fencing for sensitive areas;</p> <p>(g) property acquisition adjustment works including installation of property fencing;</p> <p>(h) low impact utility works undertaken in accordance with the approved Low Impact Utility Works Management Strategy required under Condition E161;</p> <p>(i) other activities determined by the ER to have minimal environmental impact which may include construction of minor access roads, temporary relocation of pedestrian and cycle paths, the provision of property access;</p> <p>(j) maintenance of existing buildings and structures required to facilitate the carrying out of the CSSI; and</p> <p>(k) archaeological testing under the <i>Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010)</i> or archaeological monitoring undertaken in association with (a) – (j) above to ensure that there is no impact on heritage items.</p> <p>However, where heritage items, or threatened species or threatened ecological communities (within the meaning of the <i>Biodiversity Conservation Act 2016</i> (NSW)) are adversely affected or potentially adversely affected by any low impact work, that work is construction, unless otherwise determined by the Planning Secretary.</p>
CCM	Community Complaints Mediator
Construction Boundary	The area required for project construction as described in the EIS and as amended by the PIR.
CSSI	The Critical State Significant Infrastructure, as described in Schedule 1, the carrying out of which is approved under the terms of this approval.
Department	NSW Department of Planning, Industry and Environment
DECC	Former NSW Department of Environment and Climate Change
DITCARD	<p>Commonwealth Department of Infrastructure, Transport, Cities and Regional Development</p> <p>(former Commonwealth Department of Infrastructure, Regional Development and Cities)</p>

Term	Definition
DPIE Water	Department of Planning, Industry and Environment – Lands, Water and Department of Primary Industries (former NSW Department of Industry – Lands and Water, and former NSW Department of Primary Industries including DPI Agriculture, DPI Biosecurity and Food Safety, DPI Land and Natural Resources, DPI Water and DPI Fisheries)
EES	Environment, Energy and Science Group of the Department of Planning, Industry and Environment (former NSW Office of Environment and Heritage)
EIS	The Environmental Impact Statement submitted to the Planning Secretary seeking approval to carry out the development described in it, as revised if required by the Planning Secretary under the EP&A Act.
EMS	Environmental Management System
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence under the POEO Act
ER	Environmental Representative for the CSSI
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.
Heavy Vehicle	Has the same meaning as in the <i>Heavy Vehicle National Law (NSW) No 42a</i>
Heritage item	A place, building, structure, 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 (NSW)</i> , a state agency heritage and conservation register under section 170 of the <i>Heritage Act 1977 (NSW)</i> , 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 (Cth)</i> , and an “Aboriginal object” or “Aboriginal place” as defined in section 5 of the <i>National Parks and Wildlife Act 1974 (NSW)</i> .
Highly noise intensive works	Works which are defined as annoying under the ICNG including: (a) use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work; (b) grinding metal, concrete or masonry; (c) rock drilling; (d) line drilling; (e) vibratory rolling; (f) bitumen milling or profiling; (g) jackhammering, rock hammering or rock breaking; and (h) impact piling.

Term	Definition
ICNG	<i>Interim Construction Noise Guideline</i> (DECC, 2009)
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance. <i>Note: “material harm” is defined in this approval.</i>
Independent Appointment	An independent appointment required by this approval, approved by the Planning Secretary, including but not limited to the AA, CCM, ER and AQIR.
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 (NSW)</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> .
Low Impact Utility Works	Being the adjustment of utilities to property that disrupt services or access to less than 10 premises, access or service outage of less than 2 hours and does not result in noise exceeding 5 dB above background noise levels.
Material harm	Is harm that: (a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or (b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).
Minister	NSW Minister for Planning and Public Spaces
NML	Noise Management Level as defined in the <i>Interim Construction Noise Guideline</i> (DECC, 2009).
NSW Heritage Council	Heritage Council of NSW
Non-compliance	An occurrence, set of circumstances or development that is a breach of this approval.
OEMP	Operational Environmental Management Plan
Operation	The carrying out of the CSSI (whether in full or in part) upon the completion of construction. <i>Note: 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>
PIR	The Preferred Infrastructure Report submitted to the Planning Secretary under section 5.17 of the EP&A Act
POEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>

Term	Definition
Planning Secretary	Planning Secretary of the Department (or nominee, whether nominated before or after the date on which this approval was granted).
Planning Secretary's approval or agreement	A written approval from the Planning Secretary (or nominee).
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.
Publicly Available	To be made available on the website required under Condition B15 of this approval.
Relevant council(s)	Any or all as relevant, Bayside Council, Canterbury-Bankstown City Council or Inner West Council.
Relevant roads authority	The same meaning as the roads authority defined in the <i>Roads Act 1993 (NSW)</i> .
Relic	Has the same meaning as the definition of the term in section 4 of the <i>Heritage Act 1977 (NSW)</i> .
Relocated persons	Any resident or business owner who is displaced or relocated consequent to acquisition of a property for the purposes of the CSSI, or an owner of the property which has been acquired for the purposes of the CSSI.
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.
RFRP	Recreation Facilities Replacement Plan
RIAR	Regions, Industry, Agriculture and Resources Group of the Department of Planning, Industry and Environment (former Department of Industry - Lands and Water)
RNA	Recreation Needs Analysis
Sensitive receiver	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres, passive recreation areas (including outdoor grounds used for teaching), 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 others as identified by the Planning Secretary.
SES	NSW State Emergency Services
Site establishment works	Low impact work undertaken to establish a construction ancillary facility. However, site establishment works do not include: <ul style="list-style-type: none"> (a) piling (except for piling required for the erection of noise barriers around construction compounds); or (b) the erection of acoustic sheds at construction compounds including the hardstand area on which it will be erected; or (c) establishing tunnel shafts/dives.
Street Tree	Tree located on public street verges and medians.

Term	Definition
TfNSW(RMS)	Transport for NSW (Roads and Maritime Services)
TMC	Transport Management Centre for NSW
Tree	As defined in Australian Standard AS 4970-2009
UDLP	Urban Design and Landscape Plan
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 EIS or PIR or suspected to be present. An unexpected heritage find does not include human remains.
Ventilation outlet	The location and structure from which air within a tunnel is expelled.
Works	Any physical work for the purpose of the CSSI including construction and low impact work.

Table 2: Further Definitions and Terms

Term	Definition
CO	Carbon monoxide
NATA	National Association of Testing Authorities, Australia
NO	Nitric oxide
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
PAH	Polycyclic aromatic hydrocarbons
PM ₁₀	Particulate matter (10 micrometres or less in diameter)
PM _{2.5}	Particulate matter (2.5 micrometres or less in diameter)
VOC	Volatile organic compounds

SUMMARY OF REPORTING AND APPROVAL REQUIREMENTS

Reports and notifications that must be provided to the Planning Secretary under the terms of this approval are listed in **Table 3**. Any appointments of persons requiring approval are also listed. Where there is an inconsistency with the requirements of **Table 3** and any condition of approval. The condition of approval prevails.

Table 3: Reporting, Notification and Approval Requests that must be submitted to the Planning Secretary

Condition	Report / Notification / Appointment	Timing ¹	Purpose
Part A – Administrative			
A11	Staging Report	One month prior to commencement of construction (or operation if only staged operation is proposed) of the first of the proposed stages	Information
A17	Site Establishment Management Plan	One month prior to the installation of any ancillary facilities	Approval
A18	Construction Environmental Management Plans or Construction Monitoring Programs	Prior to operation of a construction ancillary facility	Approval
A23	Environmental Representative	One month prior to the commencement of works	Approval
A26	Environmental Representative Reports	Within seven days following the end of each month for the duration of the ER's engagement	Information
A28	Acoustics Advisor	One month prior to the commencement of works	Approval
A31	Monthly Noise and Vibration Report	Within seven days following the end of each month for the duration of the AA's engagement	Information
A32	Compliance Monitoring and Reporting Program	Four weeks prior to the commencement of construction	Information
A36	Independent Audit Program	Four weeks prior to the date notified for the commencement of construction	Information
A38	Response to Independent Audit Report	As required under the <i>Independent Audit Requirements</i> (Department 2018)	Information
A39	Written notification of incident	Immediately upon becoming aware of the incident. Subsequent written notification within seven days and a detailed report on the incident required within 30 days of the date on which the incident occurred or as otherwise approved by the Planning Secretary	Information
A41	Project identification on Heavy Vehicles	Prior to Heavy Vehicles being utilised for the project	Approval

¹ Where a project is staged, all required approvals must be obtained prior to the commencement of the relevant stage.

Condition	Report / Notification / Appointment	Timing ¹	Purpose
Part B - Communication Information and Reporting			
B3	Communication Strategy	One month prior to the commencement of workw	Approval
B10	Complaints Register	Upon request from the Planning Secretary within a timeframe stated in the request	Information
B11	Community Complaints Mediator	One month prior to the commencement of works	Approval
Part C - Construction Environmental Management			
C3	Construction Environmental Management Plans	One month prior to the commencement of construction	Approval
C10	CEMP Sub-plans	One month prior to the commencement of construction activities to which they apply	Approval
C20	Construction Monitoring Programs	One month prior to the commencement of construction	Approval
Part D - Operation Environmental Management			
D3	Operational Environmental Management Plans or Environmental Management System	One month prior to the commencement of operation	Information
D8	Operational Groundwater Monitoring Review	Within two weeks of review	Information
D10	Operational Monitoring Programs	One month prior to the commencement of operation	Approval
D13	Operational Monitoring Reports	At the frequency identified in the relevant Operational Monitoring Program	Information
Part E – Key Issues			
Air Quality			
E2	Air Quality Community Consultative Committee	Prior to finalising the detailed design of the CSSI and establishing the ambient air quality monitoring stations	Approval
E3	Air Quality Independent Reviewer appointment and engagement	Prior to the finalisation of detailed design	Approval
E11	Notification of exceedances of tunnel air quality limits	As early as possible and within 24 hours of the recorded event	Information
E12	Tunnel Air Quality Management	Within 20 working days of a request by the Planning Secretary	Information

Condition	Report / Notification / Appointment	Timing ¹	Purpose
	Systems Effectiveness Report		
E17	Notification of Above-Emission Limit Recording	As soon as possible and within 24 hours of the recording	Information
E18	Report on Above-Emission Limit Recording	Within one month of any notification of Above-Emission Limit Recording	Information
E21	Ambient air quality monitoring station locations	Prior to installation of the monitoring stations	Information
E24	Notification of Above-Maximum Concentration Recording	As soon as possible and within 24 hours of the recording	Information
E25	Report on Above-Maximum Concentration Recording	Within 20 working days of any notification of Above-Maximum Concentration Recording	Information
E30	Tunnel ventilation system design verification	Prior to commencement of operation	Information
Biodiversity			
E41	Credit Retirement Report	One month of receiving the report	Information
E44	Green and Gold Bell Frog Plan of Management	Prior to commencing construction at the Arncliffe construction compound	Approval
Noise and Vibration			
E70	Out-of-Hours Work Protocol	Before the commencement of out-of-hours works	Approval
E78	At-property noise mitigation report	One (1) month prior to making offers to properties	Approval
E84	Operational Noise and Vibration Review	Prior to commencing operation	Approval
E86	Operational Noise Compliance Report	Within 60 days of completing the operational noise monitoring	Information
E90	Blast Management Strategy	One month prior to the commencement of blasting	Information
Property Impacts			
E102	Independent Property Impact Assessment Panel	Prior to the commencement of any works which may potentially result in property impacts	Information
E107	Recreation Facilities Replacement Plan	Prior to construction of the relevant replacement recreation facility	Approval

Condition	Report / Notification / Appointment	Timing ¹	Purpose
Soils			
E112	Section A Site Audit Statement	Prior to the commencement of operation	Information
E112	Site Audit Report	Prior to the commencement of operation	Information
Traffic, Transport and Access			
E123	Use of local roads for spoil haulage	Before the use of the local roads beyond 1 km of works and construction ancillary facilities	Approval
E130	Construction Parking and Access Strategy	Prior to commencement of any works that impact parking	Information
E134	Road Network Performance Plan	Before operation	Information
E135	Operational Road Network Performance Review	Within 60 days of completion of the Review	Information
Urban Design			
E146	Tree Report	Prior to the removal of any trees	Approval
E149	Replacement tree report	At least six (6) months prior to operation	Information
E150	Feasibility review of at-grade footpath on northern side of President Avenue	Within 12 months of commencing construction	Information
E157	Urban Design and Landscape Plan	No later than one (1) month prior to the commencement of permanent built works or landscaping works that are subject of the UDLP or earthworks for the final surface contouring of the reinstated Bicentennial Park, whichever is the sooner	Approval
Utilities Management			
E161	Low Impact Utility Works Management Strategy	At least one month prior to the commencement of low impact utility works	Approval
Water			
E174	Groundwater Monitoring Report	Prior to finalising of tunnel design	Information

SCHEDULE 2

PART A

ADMINISTRATIVE CONDITIONS

GENERAL

- A1 The CSSI must be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the EIS, the Response to Submissions on the EIS, the PIR and Response to Submissions on the PIR.
- A2 The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance outcomes and mitigation measures set out in the documents identified in **Condition A1** unless otherwise specified in, or required under, this approval.
- A3 In the event of an inconsistency between the EIS, as amended by the description in the Response to Submissions and PIR, or any other document required under this approval, and a term of this approval, the term of this approval prevails to the extent of the inconsistency.

Note: For the purpose of this condition, there will be an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.

- A4 The Proponent must comply with the written requirements or directions of the Planning Secretary, including in relation to:
- (a) the environmental performance of the CSSI;
 - (b) any document or correspondence in relation to the CSSI (including the provision of such documentation or correspondence);
 - (c) any independent appointment or dismissal made in relation to the CSSI;
 - (d) any notification given to the Planning Secretary under the terms of this approval;
 - (e) any audit of construction or operation;
 - (f) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval);
 - (g) the carrying out of any additional monitoring or mitigation measures; and
 - (h) in respect of ongoing monitoring and management obligations, and following consultation with the Proponent, 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 and a summary of the issues raised by them;
 - (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 (5) years after the date on which it is granted, unless works are 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, Standards or policies in the form they are in as at the date of this approval.
- A8 Any document that must be submitted within a timeframe specified in or under the terms of this approval may be submitted within a later timeframe approved by the Planning Secretary. This condition does not apply to the immediate written notification required in respect of an incident under **Condition A39**.

Note: Inaction and/or expedience will not be supported as justifications for need unless it can be demonstrated that there is beneficial environmental impacts associated with the request.

INDEPENDENT APPOINTMENTS

- A9 All **Independent Appointments** required by this approval must hold current membership of a relevant professional body, unless otherwise approved by the Planning Secretary.
- A10 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.

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

STAGING

- A11 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 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).
- A12 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 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.
- A13 The CSSI must be staged in accordance with the **Staging Report**, as submitted to the Planning Secretary.
- A14 Where staging is proposed, the terms of this approval that apply or are relevant to the works or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.

- A15 Where changes are proposed to the staging of construction or operation, a revised **Staging Report** must be prepared and submitted to the Planning Secretary for information no later than one (1) month prior to the proposed change in the staging.

ANCILLARY FACILITIES

Ancillary Facilities

- A16 Ancillary facilities that are not identified by description and location in the EIS and PIR 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 a sensitive receiver (including where an access road is between the facility and the receiver), unless the sensitive receiver 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 performance outcomes set out in the terms of this approval, including in relation to environmental impacts.

SITE ESTABLISHMENT WORKS

Site Establishment Management Plan

- A17 The Proponent must prepare and submit for approval to the Planning Secretary one (1) month before the establishment of any construction ancillary facility (excluding minor construction ancillary facilities established under **Condition A19**) a **Site Establishment Management Plan**. The Plan must be prepared in consultation with the relevant council and government agencies and must include:
- (a) an outline of the environmental management practices and procedures to be implemented at the facility(ies);
 - (b) a description of activities to be undertaken during establishment of the construction ancillary facility (including scheduling and duration of works to be undertaken at the site);
 - (c) figures illustrating the proposed operational site layout;
 - (d) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (b) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment works;
 - (e) details of how the site establishment activities described in subsection (b) 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 (d) of this condition; and
 - (f) a program for monitoring the performance outcomes, including a program for noise monitoring of site establishment activities.

The establishment of the construction ancillary facilities cannot commence until the Planning Secretary has approved the **Site Establishment Management Plan** for the relevant ancillary facility or facilities. Nothing in this condition prevents the Proponent from preparing individual **Site Establishment Management Plans** for each construction ancillary facility or one **Site Establishment Management Plan** for all facilities. The approved **Site Establishment Management Plan(s)** must be implemented.

Operation of Construction Ancillary Facilities

A18 The operation 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 C13** have been approved by the Planning Secretary.

This condition does not apply to **Condition A19**.

Minor Construction Ancillary Facilities

A19 Lunch sheds, office sheds, portable toilet facilities, and the like, can be established and operated where they satisfy the following criteria:

- (a) are located within the construction boundary; and
- (b) have been assessed by the **ER** to have -
 - (i) low 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
 - (ii) low 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 around all ancillary facilities that are adjacent to sensitive receivers for the duration of construction unless otherwise agreed with the relevant council and affected residents, business operators or landowners.

A21 Boundary screening required under **Condition A20** of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.

ENVIRONMENTAL REPRESENTATIVE

A22 Works must not commence until an **ER** has been approved by the Planning Secretary and engaged by the Proponent.

A23 The Planning Secretary's approval of an **ER** must be sought no later than one month before the commencement of works.

A24 The proposed **ER** must be a suitably qualified and experienced person who was not involved in the preparation of the documents listed in **Condition A1**, and is independent from the Proponent and companies involved in the design and construction of the CSSI.

A25 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.

A26 For the duration of the works, or as approved by 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;
- (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 A17, C1, C4 and C13** 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 A17, C1, C4 and C13** 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, attend or undertake audits of the CSSI commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under **Condition A37** of this approval;
 - (g) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints;
 - (h) assess the impacts of minor construction ancillary facilities as required by **Condition A19** of this approval;
 - (i) consider any minor amendments to be made to the **CEMP, CEMP Sub-plans and Construction Monitoring Programs** that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the **CEMP, CEMP Sub-plans and Construction 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; and
 - (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 (7) days following the end of each month for the duration of the ER's engagement for the CSSI.
- A27 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 A26** (including preparation of the **ER** monthly report), as well as:
- (a) the complaints register - to be provided for any complaints received (on any day they are received); 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

- A28 A suitably qualified and experienced **Acoustics Advisor (AA)**, who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of works.

The details of the nominated **AA** must be submitted to the Planning Secretary for approval no later than one (1) month before commencement of works.

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.

A29 Notwithstanding **Condition A28** above, the Proponent can apply to the Planning Secretary to review and amend the duration of the engagement of the **AA**:

- (a) at no less than 18 months after the commencement of works; and
- (b) following the installation of at-property construction noise management treatments at all properties that have accepted the offer for treatment and verification of this is provided in a statement endorsed by the **AA**.

In seeking the review, the Proponent must provide to the Planning Secretary:

- (a) details on any non-compliances specific to noise and vibration, including the nature, duration, location and timing of the non-compliances and the actions implemented to avoid future non-compliances; and
- (b) a summary of all noise and vibration complaints received up to the time of submitting the application, including the nature, location and timing of the complaint and the measures implemented to address each complaint.

A30 Any activities generating noise in excess of the 'Noise affected' Noise Management Levels derived from the *Interim Construction Noise Guideline* must not commence until an **AA**, nominated under **Condition A28** of this approval, has been approved by the Planning Secretary.

A31 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 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);
- (e) regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of this approval to ensure implementation is in accordance with what is stated in the document and the terms of this approval;
- (f) in conjunction with the **ER**, the **AA** must:
 - (i) as may be requested by the Planning Secretary or **Community Complaints Mediator** (required by **Condition B11**), 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 **Communication Strategy** required under **Condition B1** to attempt to resolve the conflict, and if it cannot be resolved, notify the Planning Secretary,
 - (iii) consider relevant minor amendments made to the CEMP, relevant CEMP 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 (7) days following the end of each month for the duration of the **AA**'s engagement for the CSSI, or as otherwise approved by the Planning Secretary.

COMPLIANCE MONITORING AND REPORTING PROGRAM

- A32 No later than one (1) month before the commencement of construction, a **Compliance Monitoring and Reporting Program** prepared in accordance with the *Compliance Reporting Post Approval Requirements* (Department of Planning and Environment, 2018) must be endorsed by the **ER** and submitted to the Department for information.
- A33 Compliance reporting must be carried out in accordance with the *Compliance Reporting Post Approval Requirements* (Department of Planning and Environment, 2018). The Department must be notified of the commencement dates of construction and operation in the pre-construction and pre-operational compliance reports.
- A34 The construction compliance report must provide details of any review of, and minor amendments made to, the **CEMP** (which must be approved by the **ER**), resulting from construction carried out during the reporting period.
- A35 The **Compliance Monitoring and Reporting Program** in the form required under **Condition A32** of this approval must be implemented for the duration of construction and for a minimum of one (1) year following commencement of operation, or for a longer period as determined by the Planning Secretary based on the outcomes of independent audits, **Environmental Representative Reports** and regular compliance reviews submitted through **Compliance Reports**. If staged operation is proposed, or operation is commenced of part of the CSSI, the **Compliance Monitoring and Reporting Program** must be implemented for the relevant period of each stage or part of the CSSI.

AUDITING

- A36 No later than four (4) weeks before the date notified for the commencement of construction (in the pre-construction compliance report), an **Independent Audit Program** prepared in accordance with the *Independent Audit Requirements* (Department of Planning and Environment, 2018) must be submitted to the Planning Secretary for information.
- A37 **Independent Audits** of the CSSI must be carried out in accordance with:
- (a) the **Independent Audit Program** submitted to the Department under **Condition A36** of this approval; and
 - (b) the requirements for an **Independent Audit Methodology and Independent Audit Report** in the *Independent Audit Requirements* (Department of Planning and Environment, 2018).
- A38 In accordance with the specific requirements in the *Independent Audit Requirements* (Department of Planning and Environment, 2018), the Proponent must:
- (a) review and respond to each **Independent Audit Report** prepared under **Condition A37** of this approval; and
 - (b) submit the response to the Planning Secretary for information.

INCIDENT NOTIFICATION AND REPORTING

- A39 The Department must be notified in writing to compliance@planning.nsw.gov.au 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 time, date, location and nature of the incident. It must also describe any consequent non-compliance with this approval.
- A40 Subsequent notification must be given and reports submitted in accordance with the requirements set out in **Appendix A**.

IDENTIFICATION OF WORKFORCE AND COMPOUNDS

- A41 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.
- A42 Signage on hoardings surrounding construction ancillary facilities must include the CSSI name and application number.

PART B

INFORMATION AND REPORTING

INFORMATION, CONSULTATION AND INVOLVEMENT

Communication Strategy

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

- (a) the community (including adjoining affected landowners and businesses, and others directly impacted by the CSSI), and
- (b) the relevant councils and government agencies.

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

B2 The **Communication Strategy** must:

- (a) identify people, organisations, councils and agencies to be consulted during the design and work phases;
- (b) set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the CSSI including use of construction hoardings to provide information regarding construction. The information to be distributed must include information regarding current site construction activities, schedules and milestones at each construction site;
- (c) identify opportunities and make provision for the community to visit construction sites (taking into consideration on-site activities and workplace, health and safety requirements);
- (d) detail the measures for advising the community in advance of upcoming utility works including the schedule of out-of-hours works as required in **Condition E69(a)**;
- (e) provide for the formation of issue or location-based community forums that focus on key environmental management issues of concern to the relevant community(s) for the CSSI; and
- (f) set out procedures and mechanisms for consulting with relevant council(s) and government authorities/agencies, as required under the terms of this approval, including procedures for repeated requests for engagement / feedback and nil responses; and
- (g) set out procedures and mechanisms -
 - (i) through which the community can discuss or provide feedback to the Proponent,
 - (ii) through which the Proponent will respond to enquiries or feedback from the community, and
 - (iii) to resolve any issues and mediate any disputes that may arise in relation to the environmental management and delivery of the CSSI, including disputes regarding rectification or compensation.

B3 The **Communication Strategy** must be submitted to the Planning Secretary for approval no later than one (1) month prior to commencement of works.

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

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

COMPLAINTS MANAGEMENT SYSTEM

B6 A **Complaints Management System** must be prepared prior to the commencement of any works in respect of the CSSI and be implemented and maintained for the duration of construction and for a minimum for 12 months following completion of construction.

- B7 The following information must be available to facilitate community enquiries and manage complaints prior to the commencement of works and for 12 months following the completion of construction and appropriately broadcast to the community:
- (a) a 24- hour telephone toll-free 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;
 - (d) a mechanism for community members to make enquiries in common community languages of the area; and
 - (e) a mediation system for complaints unable to be resolved.

This information must be made publicly available.

- B8 The telephone number, postal address and email address required under **Condition B7** of this approval must also be made available on site hoarding at each construction site prior to the commencement of works. This information must also be provided on the website required under **Condition B15** of this approval.
- B9 The **Complaints Management System** must include a **Complaints Register** which must be maintained and record information on all complaints received about the CSSI during the carrying out of any works and for a minimum of 12 months following the completion of construction. The **Complaints Register** must record the:
- (a) number of complaints received;
 - (b) number of people affected in relation to a complaint; and
 - (c) nature, location and time of the complaint and means by which the complaint was addressed and whether resolution was reached, with or without mediation.
- 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 and engaged during all works. The nomination of the **Community Complaints Mediator** must be submitted to the Planning Secretary for approval no later than one (1) month prior to the commencement of works.
- 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 B6** may ask the **Community Complaints Mediator** to review the Proponent's response. The application must be submitted in writing and the **Community Complaints Mediator** must respond within 28 days of the request being made or other specified timeframe agreed between the **Community Complaints Mediator** and the member of the public.
- B13 The **Community Complaints Mediator** must:
- (a) review any unresolved disputes if the procedures and mechanisms under **Condition B2(g)(iii)** do not satisfactorily address complaints; and
 - (b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes.
- B14 The **Community Complaints Mediator** must not act before the Proponent has provided an initial response to a complaint and must not consider issues such as property acquisition, or where other dispute processes are provided for in this approval, or clear government policy and resolution processes are available, or matters which are not within the scope of the CSSI.

PROVISION OF ELECTRONIC INFORMATION

B15 A website providing information in relation to the CSSI must be established prior to commencement of works and maintained for the duration of works, and for a minimum of 24 months following the completion of construction. The following up-to-date information (excluding confidential, private and commercial information) must be published prior to works commencing and maintained on the website or dedicated pages:

- (a) the current implementation status of the CSSI;
- (b) a copy of the documents listed in **Condition A1** of this approval, and any documentation relating to any modifications made to the CSSI or the terms of this approval;
- (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; and
- (e) a copy of each document required to be made publicly available under this approval must be published within 14 days of the finalisation or approval of the relevant document, unless an alternate timeframe is prescribed by another condition of this approval.

Where a condition(s) of this approval requires a document(s) be prepared prior to a work or construction or operational activity being undertaken, a current copy of the relevant document(s) must be published on the website before the work / activity is undertaken.

PART C

CONSTRUCTION ENVIRONMENTAL MANAGEMENT

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

- C1 A **Construction Environmental Management Plan (CEMP)** must be prepared in accordance with the Department's *Guideline for the Preparation of Environmental Management Plans* (DIPNR, 2004) to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in **Condition A1** will be implemented and achieved during all stages of construction.
- C2 The **CEMP** must provide:
- (a) a description of all activities to be undertaken during construction (including the scheduling of construction);
 - (b) details of environmental policies, guidelines and principles to be followed in construction;
 - (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 prior to the commencement of construction;
 - (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 and with 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 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 relationship with the **ER**;
 - (j) an outline of the training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval;
 - (k) the process for periodic review and update of the **CEMP** and all associated plans and programs; and
 - (l) relevant details from the **Site Establishment Management Plan(s)**.
- C3 The **CEMP** must be endorsed by the **ER** and then submitted to the Planning Secretary for approval no later than one (1) month prior to the commencement of construction, or where construction is staged no later than one (1) month prior to the commencement of that stage.
- C4 **CEMP Sub-plans** must be prepared in consultation with the relevant government agency(s) and council(s) as identified for each **CEMP Sub-plan** in **Table 4**.

Table 4: CEMP Sub-plan and relevant public authorities

	Required CEMP Sub-plan	Relevant government agencies and council(s) to be consulted for each CEMP Sub-plan
(a)	Traffic and Access	Relevant council(s)
(b)	Noise and Vibration	NSW Health, relevant council(s) and Sydney Water (where vibration has the potential to impact on Sydney Water assets)
(c)	Flora and Fauna	EES and relevant council(s)
(d)	Air Quality and Odour	NSW Health and relevant council(s)
(e)	Soil and Surface Water	DPIE Water, EES, Sydney Water (if Sydney Water's assets are affected) and relevant council(s)
(f)	Groundwater	DPIE Water and Sydney Water (where it is proposed to discharge groundwater into Sydney Water assets)
(g)	Contamination	Relevant council(s)
(h)	Waste	Relevant council(s)
(i)	Leachate and Landfill Gas	EPA and relevant council(s)

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

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

C6 The **Contamination CEMP Sub-plan** must include, but not be limited to:

- (a) details of construction activities and their locations which have the potential to expose areas known to contain, or potentially contain, contaminated soils and/or materials;
- (b) measures for the handling, treatment and management of hazardous and contaminated soils and materials including measures to manage and/or minimise worker and public health and safety with regards to exposure to contamination; and
- (c) a description of how the effectiveness of the actions and measures for managing contamination impacts would be monitored during the proposed works, clearly indicating how often this monitoring would be undertaken, the locations where monitoring would take place, and how the results of the monitoring would be recorded and reported.

The **Contamination CEMP Sub-plan** must be reviewed and considered satisfactory by an EPA accredited site auditor. The **Contamination CEMP Sub-plan** and any Interim Audit Advice prepared by the EPA accredited site auditor regarding the sub-plan must be submitted to the Planning Secretary prior to undertaking any works which may result in the disturbance of contaminated soil, land or materials.

Nothing in this condition prevents the Proponent from preparing separate **Contamination CEMP Sub-plans** for specific areas of work, rather than a single plan which addresses the entire CSSI.

- C7 The **Leachate and Landfill Gas CEMP Sub-plan** must include the following:
- (a) measures to manage landfill gas emissions and odours generated from Rockdale Bicentennial Park during construction, including site-specific action criteria and notification to all potentially affected receivers of the potential for odour generation;
 - (b) measures to prevent landfill gases accumulating in buildings, basins and subsurface trenches and pits associated with the CSSI;
 - (c) the closure and stabilisation of the impacted area of landfill so it is suitable for its intended uses;
 - (d) methods for the management of leachate including analysis, treatment and disposal as well as measures for minimising and/or preventing leachate migration;
 - (e) reporting triggers and contingency actions in the event that unacceptable levels of odours or contaminants in the leachate are reached or reported above safe thresholds;
 - (f) community engagement processes in the event that nuisance odours emanate beyond the construction boundary;
 - (g) evidence that an EPA accredited site auditor has reviewed the **Leachate and Landfill Gas CEMP Sub-plan** and has issued an interim audit advice regarding the appropriateness of the Sub-plan; and
 - (h) evidence that the **Leachate and Landfill Gas CEMP Sub-plan** and any interim audit advice issued by the Auditor has been submitted to the EPA and the EPA has no further concern.
- C8 The **Soil and Surface Water CEMP Sub-plan** must include an **Acid Sulfate Soils Management Plan** to address those areas where acid sulfate soils are known to occur or potentially occur. The **Acid Sulfate Soils Management Plan** must include measures for the management, handling, treatment and disposal of acid sulfate soils, including monitoring of water quality at acid sulfate soils treatment areas in accordance with the *Acid Sulfate Soil Manual (NSW ASSMAC, 1998)* and with regard to the *Waste Classification Guidelines (NSW EPA, 2014)*. The **Acid Sulfate Soils Management Plan** must be reviewed and considered satisfactory by an EPA accredited site auditor.
- C9 The **Waste CEMP Sub-plan** must include, but not be limited to:
- (a) details of the types of waste to be generated by the CSSI;
 - (b) details of the waste tracking register required by **Condition E167**, including methods of record keeping; and
 - (c) a process for verifying that all waste is being managed, transported, reused, recycled or disposed of in a lawful manner.
- C10 The **CEMP Sub-plans** must be endorsed by the **ER** and then submitted to the Planning Secretary for approval no later than one (1) month prior to the commencement of the construction activities to which they apply.
- C11 Any of the **CEMP Sub-plans** may be submitted to the Planning Secretary along with, or subsequent to, the submission of the **CEMP**.
- C12 Construction must not commence until the **CEMP** and all relevant **CEMP Sub-plans** for such construction activities to which they apply have been approved 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 is staged, construction of a stage must not commence until the relevant **CEMP** and **CEMP Sub-plans** for that stage have been endorsed by the **ER** and approved by the Planning Secretary.

CONSTRUCTION MONITORING PROGRAMS

- C13 The **Construction Monitoring Programs** set out in **Table 5** must be prepared and implemented to enable comparison of the actual construction performance against the predicted performance. The **Construction Monitoring Programs** must be prepared in consultation with the relevant government agencies and councils as identified for each **Construction Monitoring Program**.

Table 5: Construction Monitoring and relevant public authorities

	Required Construction Monitoring Programs	Relevant government agencies to be consulted for each Construction Monitoring Program
(a)	Surface Water Monitoring Program	DPIE Water, Sydney Water (if any Sydney Water assets are affected), EPA
(b)	Groundwater Monitoring Program	DPIE Water
(c)	Noise and Vibration Monitoring Program	EPA
(d)	Blast Monitoring Program	EPA
(e)	Air Quality Monitoring Program	EPA
(f)	Flora and Fauna Monitoring Program	EES
(f)	Leachate and Landfill Gas Monitoring Program	EPA
(g)	Wetland Monitoring Program	EES

- C14 **Construction Monitoring Programs** must provide:

- (a) details of baseline data available;
- (b) details of baseline data to be obtained and when;
- (c) details of all monitoring that will be undertaken;
- (d) the parameters of the project to be monitored;
- (e) the frequency of monitoring;
- (f) the location of monitoring;
- (g) the reporting of monitoring and analysis results against relevant criteria, including details of the timing and frequency for reporting the results to the Planning Secretary and relevant government agencies;
- (h) details of the methods that will be used to analyse the monitoring data;
- (i) procedures to identify and implement additional mitigation measures where results of monitoring indicate adverse impacts or levels above relevant criteria;
- (j) any consultation to be undertaken in relation to the monitoring programs; and
- (k) any specific requirements as required by **Conditions C15 to C18**, as relevant.

- C15 The **Leachate and Landfill Gas Monitoring Program** must include, but not be limited to:

- (a) methods for monitoring landfill gas emissions within construction areas where such emissions are likely to occur, as well as methods for odour monitoring at the construction boundary and in areas outside of the construction boundary where there is a potential for nuisance odours;
- (b) a monitoring bore network to monitor leachate movement;

- (c) reporting triggers and contingency actions in the event that unacceptable levels are reached or reported above safe thresholds; and
- (d) detail how the results of the monitoring program will inform the management measures in the following **CEMP Sub-plans** required by **Condition C4 – Leachate and Landfill Gas, Groundwater, Soil and Surface Water, and Contamination**.

C16 The **Noise and Vibration Monitoring Program** must include:

- (a) noise and vibration monitoring at agreed representative sensitive receiver locations adjacent to the construction ancillary facilities in Arncliffe and Rockdale to confirm construction noise and vibration levels;
- (b) for the purposes of (a), noise monitoring during the day, evening and night-time periods must be undertaken within the first month of operation of the construction ancillary facilities and must cover the range of activities (excluding activities associated with site establishment) being undertaken at the sites; and
- (c) provision of real time noise and vibration monitoring data. The data must be readily available to the construction team, Proponent, **ER** and **AA**. The Department and EPA must be provided with access to the real-time monitoring data, on request.

C17 The **Groundwater Monitoring Program** must include:

- (a) results from existing monitoring bores and from any 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 the 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 in saturated sediments besides the wetland in Rockdale Bicentennial Park);
- (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 DPIE Water every three (3) months during construction of the tunnels and portal.

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

C18 The **Wetland Monitoring Program** must include:

- (a) water quality monitoring sites within Patmore Swamp, Kings Wetland, and upstream and downstream of the creek diversion works in Rockdale Bicentennial Park;
- (b) monitoring of water levels, electrical conductivity, turbidity, pH, suspended solids, dissolved oxygen and nutrients;
- (c) standards against which any changes to water quality will be assessed;
- (d) monitoring of health of aquatic and riparian flora and fauna species in Patmore Swamp, Kings Wetland and Rockdale Bicentennial Park, including species density and diversity; and
- (e) trigger points for responding to any monitored changes which adversely impact on water quality, surface water levels or aquatic and riparian flora and fauna.

Nothing in this condition prevents the Proponent from including these requirements in the **Surface Water Monitoring Program** and **Flora and Fauna Monitoring Program** required under **Condition C13**.

- C19 The **Construction Monitoring Programs** must be developed in consultation with the relevant government agencies as identified in **Condition C13** of this approval, and must identify information, including monitoring parameters, requested by a relevant agency to be included in a monitoring program.
- C20 The **Construction Monitoring Programs** must be endorsed by the **ER** and then submitted to the Planning Secretary for approval at least one (1) month prior to the commencement of construction.
- C21 Construction, which is required to be monitored under the **Construction Monitoring Programs**, must not commence until the Planning Secretary has approved all of the required **Construction Monitoring Programs** and all relevant baseline data for the specific construction activity has been collected.
- C22 The **Construction Monitoring Programs**, as approved by the Planning Secretary and 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.
- C23 The results of the **Construction Monitoring Programs** must be made publicly available in the form of a **Construction Monitoring Report** at the frequency identified in the relevant **Construction Monitoring Program**.

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

PART D

OPERATIONAL ENVIRONMENTAL MANAGEMENT

OPERATIONAL ENVIRONMENTAL MANAGEMENT

- D1 An **Operational Environmental Management Plan (OEMP)** must be prepared in accordance with the *Guideline for the Preparation of Environmental Management Plans* (Department of Industry, Planning and Natural Resources, 2004) to detail how the performance outcomes, commitments made and mitigation measures identified in the documents listed in **Condition A1** will be implemented and achieved during operation. This condition (**Condition D1**) does not apply if **Condition D2** of this approval applies.
- 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 can demonstrate, to the written satisfaction of the Planning Secretary, that through the **EMS** or equivalent:
- (a) the performance outcomes, commitments and mitigation measures, detailed in the documents listed in **Condition A1**, and specified relevant terms of this approval can be achieved;
 - (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 (1) month prior to 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.

OPERATIONAL MONITORING PROGRAM

- D5 The following **Operational Monitoring Programs** must be prepared in consultation with the relevant authorities as identified in **Table 6** and implemented to compare actual operational performance against predicted performance.

Table 6: Operational monitoring and relevant government agencies and councils

	Required Operational Monitoring Programs	Relevant government agencies and council(s) to be consulted for each Operational Monitoring Program
(a)	Surface Water Quality Plan & Monitoring Program	DPIE Water; EES; Sydney Water; and relevant council(s)
(b)	Groundwater Monitoring Program	DPIE Water, relevant council(s) and EPA
(c)	Wetland Monitoring	EES and relevant council(s)

- D6 Each operational monitoring program must include:
- (a) details of baseline data;
 - (b) details of all monitoring of the project to be undertaken;
 - (c) the parameters of the project to be monitored;
 - (d) the frequency 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 of water quality of the water discharged from all water treatment plants;
- (c) monitoring of groundwater levels in aquifers adjacent to the tunnel alignment, in consultation with DPIE 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 (2) 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 DPIE Water;
- (e) measures to record or otherwise estimate and report groundwater inflows into the tunnels;
- (f) a method for providing the data collected in (a) and (b) to Sydney Water every three (3) months where flows are discharged to their assets to demonstrate the project's compliance with the discharge criteria and, if applicable, the Proponent's trade waste licence; and
- (g) a process for annually forwarding data on the monthly volume of groundwater discharged from each water treatment plant to DPIE Water for a minimum period of five (5) years, consistent with **Condition D8**.

The monitoring data to be provided to DPIE 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 five (5) years following the completion of construction of the tunnels. At least one (1) month prior to the end of the five (5) year monitoring period, the Proponent must undertake a review of future monitoring requirements in consultation with DPIE 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 (2) weeks of the review as to the outcomes of the review and any requirements for future monitoring.
- D9 The **Wetland Monitoring Program** must include the requirements set out in **Condition C18** and be undertaken for a period of at least two (2) years following the reinstatement of the wetland in Rockdale Bicentennial Park. At least one (1) month prior to the end of the two (2) year monitoring period, the Proponent must undertake a review of any future monitoring requirements. The review must determine if additional monitoring is required, and the time period for continued monitoring. The Proponent must notify the Planning Secretary within one (1) month of the review as to the outcomes of the review and any requirements for future monitoring.
- D10 The **Operational Monitoring Programs** must be submitted to the Planning Secretary for approval at least one (1) month prior to the commencement of operation.
- D11 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.
- D12 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.
- D13 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 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**.

- D14 Where a relevant **OEMP Sub-plan** exists, the relevant **Operational Monitoring Program** may be **incorporated** into that **OEMP Sub-plan**.

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 E20**, 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 -
 - (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 an 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 (4) times a year, or as otherwise approved by the Planning Secretary with consideration of advice from the Chair;
- (c) review and provide advice on the location of the ambient air quality monitoring stations required under **Condition E20**, 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 (2) 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 New M5 project (SSI 6788) in relation to the ventilation outlet located at Arncliffe.

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.

Air Quality Independent Reviewer

- 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 A37**.

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:

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

as per the requirements of **Conditions 0, E16, E21, 0, E23, E30, E33 and E36**.

In-Tunnel Air Quality

Limits for In-Tunnel Air Quality

E5 The tunnel ventilation system must be designed and operated so that the average concentrations of CO and NO₂, calculated along the length of the tunnel, do not exceed the concentration limit specified for that pollutant in **Table 7**.

Table 7: 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 ₂	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 8** under all traffic scenarios.

Table 8: 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 9**.

Table 9: In-tunnel visibility limits along length of tunnel

Parameter	Average extinction co-efficient Limit	Units of measurement	Averaging period
Visibility	0.005	m ⁻¹	Rolling 15-minute

Monitoring of In-Tunnel Air Quality

E8 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.

The in-tunnel air quality monitoring system must undergo relative accuracy test audits at least every (6) six months, or within another timeframe approved with the Planning Secretary.

- E9 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, and at tunnel and ramp junctions, unless otherwise approved by the Planning Secretary
- E10 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

- E11 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 E12**.
- E12 Within 20 working days of a request by the Planning Secretary, the Proponent must prepare and submit to the Planning Secretary for information a **Tunnel Air Quality Management Systems Effectiveness Report** on the overall system performance and cause and major contributor of any exceedances, including:
- (a) the overall performance and concentration levels in the tunnel for the preceding six (6) month period (or since commencement of operation, where the CSSI has operated for under six (6) months), including average and maximum levels and time periods;
 - (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
 - (c) consideration of improvements to the tunnel air quality management system.

Ventilation Outlets

- E13 The tunnel ventilation outlet at Rockdale must be constructed at the location specified in **Appendix B**.

Note: The ventilation outlet at the Arncliffe ventilation facility is being constructed as part of the New M5 project and the location is specified in the Instrument of Approval for SSI 6788.

- E14 The ventilation outlets must be constructed to tip heights within the following ranges:

Table 10: Ventilation Outlet Heights

Location	Outlet Height (m AHD)
Rockdale	Between 36.7 metres and 39.9 metres

Note: The ventilation outlet at the Arncliffe ventilation facility is being constructed as part of the New M5 project and height limits have been specified in the Instrument of Approval for SSI 6788.

Limits on Emissions from Ventilation Outlets

E15 The concentration of a pollutant discharged from the ventilation outlets must not exceed the respective limits specified for that pollutant in Table 11.

Table 11: Ventilation Outlet Mass Pollutant Concentrations

Pollutant	100 percentile limit	Units of measurements	Averaging period	Reference conditions
Solid particles	1.1	mg/m ³	1 hour, or the minimum sampling period specified in the relevant test method, whichever is the greater	Dry, 273K, 101.3kPa
NO ₂ or NO or both, as NO ₂ equivalent	20	mg/m ³	1 hour block	Dry, 273K, 101.3kPa
NO ₂	2.0	mg/m ³	1 hour block	Dry, 273K, 101.3kPa
CO	40	mg/m ³	1 hour rolling	Dry, 273K, 101.3kPa
VOC (as propane)	4.0	mg/m ³	1 hour rolling	Dry, 273K, 101.3kPa

Monitoring of Ventilation Outlet Emissions

E16 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 12** and be undertaken at commencement of and throughout operation.

The monitoring equipment must be verified by the **AQIR** prior to the commencement of monitoring for compliance with the requirement set out in **Table 12**. The pollutant monitoring system must undergo relative accuracy test audits at least every 6 months, or within another timeframe approved by the Planning Secretary.

Table 12: Ventilation Outlet Emission Monitoring Methodologies

Pollutant	Units of measure	Frequency	Method ¹
Solid particles	mg/m ³	Continuous	Special Method 1 ⁴
Solid particles	mg/m ³	Quarterly	TM-15
PM ₁₀	mg/m ³	Quarterly	OM-5
PM _{2.5}	mg/m ³	Quarterly	OM-5
NO ₂ or NO or both, as NO ₂ equivalent	mg/m ³	Continuous	CEM-2
NO ₂	mg/m ³	Continuous	CEM-2
CO	mg/m ³	Continuous	CEM-4
VOC ²	mg/m ³	Continuous	CEM-8
Speciated VOC	mg/m ³	Annual	TM-34
Speciated PAH ³	µg/m ³	Annual	OM-6
Parameter	Units of measure	Frequency	Method ¹
Velocity	m/s	Continuous	CEM-6
Volumetric flow rate	m ³ /s	Continuous	CEM-6
Moisture	%	Continuous	TM-22
Temperature	°C	Continuous	TM-2
Other	Units of measure	Frequency	Method ¹
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. Must include, but not be limited to: Benzene, Toluene, Xylenes, 1,3-Butadiene, Formaldehyde and Acetaldehyde.

3. *Must include, but not limited to; 16 USEPA priority PAHs, namely; Naphthalene, Phenanthrene, Benz(a)anthracene, Benzo(a)pyrene, Acenaphthylene, Anthracene, Chrysene, Indeno(1,2,3-cd)pyrene, Acenaphthene, Fluoranthene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Fluorene, Pyrene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene.*
4. *Special Method 1 means a method approved by the Planning Secretary in consultation with the EPA.*

Notification and Reporting of Ventilation Outlet Emissions

E17 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 E15** 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.

E18 Within one (1) 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 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

E19 Should ambient monitoring of air pollutants exceed the following maximum concentrations, the provisions of **Conditions E23, E24 and E25** will apply:

- (a) CO – 8 hour rolling average of 9.0 ppm (NEPM);
- (b) NO₂ – One hour average of 0.12 ppm (245 µg/m³) (NEPM);
- (c) PM₁₀ – 24 hour average of 50 µg/m³ (NEPM);
- (d) PM_{2.5} – 24 hour average of 25 µg/m³ (NEPM);
- (e) PM₁₀ – annual average of 25 µg/m³ (NEPM); and
- (f) PM_{2.5} – annual average of 8 µg/m³ (NEPM).

Note: The notification and reporting obligations under **Conditions E23, E24 and E25** relating to ambient monitoring will begin at the commencement of operation. *The first annual average concentrations for PM₁₀ and PM_{2.5} 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

E20 The Proponent must monitor (by sampling and obtaining results by analysis) the pollutants and parameters specified in **Table 13** 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 Arncliffe 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 SSI 6788); and
- (b) two ground level receptors near the Rockdale ventilation outlet, at locations suitable for detecting any impact on air quality from the outlet.

Table 13: Ambient Air Quality Monitoring Methodologies

Pollutant	Units of measurement	Averaging Period	Frequency	Method ¹
NO	pphm	1-hour	Continuous	AM-12
NO ₂	pphm	1-hour	Continuous	AM-12
NO _x	pphm	1-hour	Continuous	AM-12
PM ₁₀	µg/m ³	24-hour	Continuous	AS3580.9.8-2008 ²
PM _{2.5} ⁵	µg/m ³	24-hour	Continuous	AS3580.9.13-2013 ³ or as otherwise agreed with the with the EPA
CO	ppm	1-hour, 8-hour	Continuous	AM-6
Parameter ⁴	Units of measurement	Averaging Period	Frequency	Method ¹
Wind Speed @ 10 m	m/s	1-hour	Continuous	AM-2 & AM-4
Wind Direction @ 10 m	°	1-hour	Continuous	AM-2 & AM-4
Sigma Theta @ 10 m	°	1-hour	Continuous	AM-2 & AM-4
Temperature @ 2m	K	1-hour	Continuous	AM-4
Temperature @ 10 m	K	1-hour	Continuous	AM-4
Other	Units of measurement	Averaging Period	Frequency	Method ¹
Siting	NA	NA	NA	AM-1 & AM-4

Notes:

1. *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (EPA, 2007) or as otherwise agreed by EPA.*
2. *AS3580.9.8-2008, Methods for the Sampling and Analysis of Ambient Air – Determination of Suspended Particulate Matter – PM₁₀ Continuous Direct Mass Method using Tapered Element Oscillating Microbalance Analyser (Standards Australia, 2008).*
3. *AS 3580.9.13-2013, Methods for the Sampling and Analysis of Ambient Air – Determination of Suspended Particulate Matter – PM_{2.5} 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 Arncliffe and Rockdale ventilation outlets.*
5. *Appropriately modified to include size selective inlet for PM_{2.5} or as otherwise approved by the EPA.*

- E21 The monitoring locations must be selected with the objective of achieving a like-to-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 A36**.

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 undergo relative accuracy test audits at least every 6 months, or within another timeframe approved with the Planning Secretary.

- E22 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 (2) years following the commencement of operation. At the end of the two (2) year operational monitoring period, the Proponent must review the need for the continued use of ambient monitoring stations in consultation with the **AQCCC** and EPA. Closure or discontinued use of an ambient monitoring station will require the approval of the Planning Secretary.

Notification and Reporting of Ambient Air Quality

- E23 The Proponent must prepare an **Ambient Air Quality Protocol** for evaluating a potential measurement that exceeds the maximum concentrations in **Condition E19**. The **Ambient Air Quality Protocol** must be developed by the Proponent in consultation with the **AQCCC** and endorsed by the **AQIR** at least six (6) 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 E19**, subject to **Condition E24**;
- (b) the template that would be used for the **Report on Above-Maximum Concentration Recording**, required by **Condition E25**; and
- (c) a reporting process endorsed by the **AQIR** that facilitates a **Report on Above-Maximum Concentration Recording**.

- E24 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 E19** 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 E25**.

- E25 Within 20 working days 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.

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 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 E27**.

Design and Operation of Tunnel Ventilation System

- E26 The tunnel ventilation systems must be designed, constructed and operated so as to only release emissions from ventilation outlets and not from portals or tunnel support facilities except during an emergency as defined in **Condition E31** and during maintenance and testing of the ventilation system.
- E27 All tunnels must be designed and constructed to allow for future modification of the ventilation system, to facilitate air quality limits and goals, if required.

- E28 A **Tunnel Ventilation and Traffic Protocol** must be prepared in consultation with the TMC. The Protocol must demonstrate that the ventilation and traffic management systems would operate together to ensure terms of this approval are met.
- E29 The **Tunnel Ventilation and Traffic Protocol** must be implemented for the duration of operation.
- E30 Prior to finalising the detailed design of the ventilation system, the **AQIR**, must review the in-tunnel ventilation and ventilation outlet design of the project and the **Tunnel Ventilation and Traffic Protocol** to verify that:
- (a) the final design achieves the in-tunnel and ventilation outlet limits for all traffic conditions including congestion (as described by the regulatory worst-case scenario in Chapter 9 of the EIS);
 - (b) the predicted impacts of the final design are no greater than predicted in the documents listed in the EIS and Response to Submissions for the equivalent operating condition; and
 - (c) the ventilation system design has been optimised to achieve effective and responsive treatment of in-tunnel air quality and efficient energy consumption.

The operating scenarios used to model the final design should be the same as those used in the documents listed in the EIS and Response to Submissions. Should the design review adopt a modelling program different to that used in the EIS, the EIS predictions shall be re-modelled using the model adopted for the design review, to establish the predicted outcomes under part (b).

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

Emergency Discharge

- E31 **Conditions E5, E6, E7, E15 and E19** do not apply in an emergency. 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.

Tunnel Air Quality Management

- E32 Prior to operation, signage must be installed at each surface tunnel entrance and variable messaging signage provided at regular intervals throughout the tunnel to instruct tunnel users to close windows and turn on recirculated air.

Relevant information about this instruction must be provided on a website, operated by the Proponent, which is maintained throughout operation.

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:
- (a) 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
 - (b) 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 (3)

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**.

Development Guidelines

- E37 The Proponent must prepare guidelines in consultation with the relevant planning authority(s) to facilitate the consideration of air quality and health impacts in the planning of and assessment of new development in areas within proximity to the ventilation outlets which would be within a potential three-dimensional zone of affectation (buffer volume).

The guidelines must identify the width and height of buildings that are likely to be either affected by the plume from the ventilation outlet or affect the dispersion of the plume from the ventilation outlet through building wake effects.

A part of this process, the Proponent must provide data detailing the results of modelling of pollution concentrations at various heights and distances from the ventilation outlets. The Proponent must meet all reasonable costs for any necessary amendments to planning instrument(s) required to implement the guidelines.

The guidelines must be prepared prior to operation.

BIODIVERSITY

- E38 Any work associated with the CSSI must limit the clearing of native vegetation to the greatest extent practicable.
- E39 Impacts to plant community types must not exceed those identified in the documents listed in **Condition A1**, unless otherwise approved by the Planning Secretary. In requesting the Planning Secretary's approval, the Proponent must provide to the Planning Secretary an assessment of the additional impact(s) to plant community types and an updated ecosystem and/or species credit requirement under **Condition E40**, if required.
- E40 Prior to any impact on the plant community types or species that are required to be offset, the Proponent must retire the credits specified in and **Table 14** and **Table 15** in accordance with the offset rules of the *Biodiversity Conservation Act 2016*, unless alternate credits are approved by the Planning Secretary in accordance with **Condition A39**.

Table 14: Species Credit Requirement

Species	Impacted individuals	Number of Credits
Magenta Lilly Pilly (<i>Syzyguim paniculatum</i>)	5	10

Table 15: Ecosystem Credit Requirements

PCT ID and Name	Vegetation Formation	Number of Credits
PCT 1232 – Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	Coastal Swamp Forest	6
PCT 1795 – Swamp Mahogany – Cabbage Tree Palm – Cheese Tree – Swamp Oak tall open forest on poorly drained coastal alluvium in the Sydney basin	Coastal Swamp Forest	27
PCT 1808 – Common Reed on the margins of estuaries and brackish lagoons along the New South Wales coast	Freshwater Wetlands	49

Note: Credits have been calculated using the Biodiversity Assessment Method

- E41 The Proponent must submit to the Planning Secretary for information a copy of the **Credit Retirement Report** for the retirement of the biodiversity offsets specified in **Table 14** and **Table 15** within one month of receiving the report.
- E42 Construction must demonstrate how:
- (a) noxious weeds are managed; and
 - (b) contamination by pathogens, non-indigenous regenerative plant material and seeds can be prevented by the movement of all tools, vehicles, machinery and personnel.

*Note: These additional requirements must be addressed in the **Flora and Fauna CEMP Sub-plan** required under **Condition C4**.*

Pre-clearing Surveys

- E43 Before the removal or clearing of any vegetation, or the demolition of structures identified as potential roosting sites for microbats commences, pre-clearing/demolition inspections for the threatened species must be undertaken. The inspections, and any subsequent relocation of fauna and associated management/offset measures, must be undertaken under the guidance of a suitably qualified and experienced ecologist. Survey and relocation methodologies and management/offset measures must be included in the **Flora and Fauna CEMP Sub-plan** required under **Condition C4** and the **Site Establishment Management Plan** required by **Condition A17**.

Green and Golden Bell Frog

- E44 The Proponent must prepare a **Green and Golden Bell Frog Plan of Management**. The Plan must be approved by the Planning Secretary prior to commencing construction at the Arncliffe construction compound. The Plan must be developed by a suitably qualified and experienced frog specialist, in consultation with EES.

The Plan must detail:

- (a) the on-site management and mitigation measures for limiting impacts on Green and Golden Bell Frogs;
- (b) the monitoring that would be undertaken during construction to ascertain the effectiveness of the on-site management and mitigation measures; and
- (c) measures to re-instate habitat affected by the Arncliffe construction compound within the returned open space post construction.

Bat Boxes

- E45 The Proponent must provide bat boxes or build suitable habitat within the replacement box culverts that cross President Avenue at Scarborough Park.

FLOODING

- E46 The CSSI must be designed and implemented to limit flooding characteristics to the following levels, unless otherwise approved by the Planning Secretary:
- (a) a maximum increase in inundation time of one hour in a 1 in 100 year ARI rainfall event;
 - (b) a maximum increase of 10 mm in inundation at properties where floor levels are currently exceeded in a 1 in 100 year ARI rainfall event;
 - (c) a maximum increase of 50 mm in inundation at properties where floor levels would not be exceeded in a 1 in 100 year ARI rainfall event; and
 - (d) no inundation of floor levels which are currently not inundated in a 1 in 100 year ARI rainfall event.

In addition, measures must be implemented to minimise scour and dissipate energy at locations where flood velocities are predicted to increase as a result of the CSSI and cause localised soil erosion or scour.

- E47 Flood information including flood reports, models and geographic information system outputs, and work as executed information from a registered surveyor certifying finished ground levels and the dimensions and finished levels of all structures within flood prone land, must be provided to the relevant council(s) and the SES. The relevant council(s) and the SES must be notified in writing that the information is available no later than one (1) month following the completion of construction and be provided with that information. Information requested by the relevant council(s) or the SES must be provided no later than six (6) months following the completion of construction or within another timeframe agreed with the relevant council(s) and the SES.

HAZARDS AND RISK

- E48 Prior to operation, the Proponent must prepare an **Emergency Response Plan**, to be implemented in the event of an emergency situation, in consultation with FRNSW and NSW Police Force.

The **Emergency Response Plan** must include, but not be limited to:

- (a) protocols and procedures to be followed during emergency situations associated with the operation of the project (including fires, explosions and, for the purposes of this condition, vehicle collisions). The protocols and procedures are to take into account the needs of people with a disability or who may experience access problems in emergency situations;
- (b) details of traffic management measures to be implemented during emergencies, where appropriate, to minimise the potential for escalation of the emergency;
- (c) design and management measures for containment of contaminated fire-fighting water, fuel spills and gaseous combustion products;
- (d) details of a training and testing program to ensure that -
 - (i) all operational staff familiar with the Emergency Response Plan, and
 - (ii) coordination with FRNSW and NSW Police is regularly exercised; and
- (e) provision for a simulated emergency response exercise, including the Proponent, FRNSW and NSW Police, to be conducted in accordance with the approved Emergency Response Plan on at least one occasion prior to the opening of the tunnel to traffic. The time for the exercise is to be agreed by the participants.

- E49 Fire simulation and hot smoke testing must be undertaken as part of the simulated emergency response exercise to be staged prior to opening of the project to traffic as required in **Condition E48(e)**.

The Proponent must respond in writing to any recommendations made by FRNSW and NSW Police as a result of the exercise.

- E50 The Proponent must undertake annual **Hazard Reviews** of the project for the first five (5) years of operation. The **Hazard Review** must detail all hazardous incidents that have occurred during the preceding period, identify safety measures required to rectify those incidents, and address any ongoing issues.

The first **Hazard Review** must be undertaken for the first three (3) months of operation after the opening of the project to traffic. Subsequent **Hazard Reviews** must be undertaken for the following nine (9) months and thereafter at 12 monthly intervals.

FRNSW may also direct the Proponent to undertake a **Hazard Review** following any major incident in the tunnel.

- E51 A **Hazard Review Report**, outlining the results of the **Hazard Review**, and any proposed additional safety measure(s) to be implemented in response to the findings of the **Hazard Review**, must be submitted to FRNSW no later than one (1) month after the review period.

The Proponent must respond in writing to any recommendation made by FRNSW in relation to the findings of a **Hazard Review**, within such time as may be agreed to by FRNSW.

- E52 The Proponent must develop a **Fire Engineering Brief and Fire Engineering Report** to address fire and life safety in the tunnel, in consultation with FRNSW. The documents must be prepared prior to finalising the relevant design details for the tunnel. The documents must outline fire protection systems and other tunnel equipment, systems, and operational protocols required for fire and smoke management.

The Proponent must respond in writing to any recommendation made by FRNSW in relation to the **Fire Engineering Brief and Fire Engineering Report**, within such time as may be agreed by FRNSW.

- E53 In developing the **Fire Engineering Brief and Fire Engineering Report**, the Proponent must undertake a detailed **Fire Engineering Study** in accordance with Australian Building Codes Board codes and guides, and Fire Safety Engineering Guidelines. Detailed design of the tunnel must incorporate the design and operational measures developed in the **Fire Engineering Study** to minimise the potential for, and effect of, fire and hazardous material incidents in the tunnel.

The final design of the tunnel in relation to the fire and life safety features must be verified against the **Fire Engineering Study** in consultation with FRNSW by an Accredited Fire Engineer.

- E54 Prior to the opening of the project to traffic, a full audit of the fire and life safety system as defined by the **Fire Engineering Study** required by **Condition E53** must be undertaken by an Accredited Fire Engineer. The objective of the audit must be to ensure that all design and operational measures outlined in the fire engineering study has been installed, are operational, and achieve the required design criteria.

The results of the audit must be submitted to FRNSW prior to opening of the project to traffic. The Proponent must respond in writing to any recommendations resulting from the FRNSW review of the audit.

- E55 A detailed maintenance-testing program outlining the methods of testing the fire and life safety systems and schedule for implementation must be developed in consultation with FRNSW prior to opening of the project to traffic.

The Proponent must respond in writing to any recommendations made by FRNSW.

- E56 Maintenance testing of fire and life safety systems must be undertaken at least annually, or any other interval as required by the design engineer and in consultation of FRNSW.

Results of maintenance testing must be made available to FRNSW for review, and the Proponent must respond in writing to any recommendations from FRNSW to ensure the reliability of the fire and life safety systems.

HERITAGE

- E57 The Proponent must prepare and implement an interpretive strategy to recognise the prior presence of Aboriginal people, within and adjoining the project area and in particular Patmore Swamp and Kings Wetland. The strategy must be prepared in accordance with relevant NSW Government guidelines and in consultation with relevant Aboriginal Stakeholders including the local Aboriginal community through an experienced Aboriginal facilitator.

The outcomes of the Strategy must be incorporated into the UDLP required under by **Condition E154**.

- E58 An area of at least twice the construction area in Patmore Swamp must be rehabilitated with endemic flora species. The areas to be rehabilitated within Patmore Swamp, and details of the selected planting and species, must be incorporated into the **UDLP**.
- E59 Before conducting acoustic treatment at any building listed as a heritage item within the relevant LEP, 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.
- E60 An **Unexpected Heritage Finds and Human Remains Procedure** must be prepared and implemented to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or EES.

Note: Human remains that are found unexpectedly during the carrying out of works 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

- E61 A detailed land use survey must be undertaken to confirm sensitive receivers (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration, construction ground-borne noise and operational noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area prior to the commencement of works which generate construction or operational noise, vibration or ground-borne noise in that area. The results of the survey must be included in the **Noise and Vibration CEMP Sub-plan** required by **Condition C4**.

Works Hours

- E62 Works (except for tunnelling (excluding cut and cover tunnelling)) must only be undertaken during the following standard construction hours:
- (a) 7:00 am to 6:00 pm Mondays to Fridays, inclusive;
 - (b) 8:00 am to 1:00 pm Saturdays; and
 - (c) at no time on Sundays or public holidays.
- E63 Notwithstanding **Condition E62**, works may be undertaken between 1:00 pm to 6:00 pm on Saturday.
- E64 Notwithstanding **Conditions E62** and **E63** of this approval, the following activities may be undertaken 24 hours per day, seven days per week:

- (a) tunnelling (excluding cut and cover tunnelling);
- (b) delivery of material to support tunnelling;
- (c) haulage of spoil from the Arncliffe and Rockdale construction ancillary facilities;
- (d) works within an acoustic shed; and
- (e) tunnel fit out works.

Other surface works associated with tunnelling must be undertaken in accordance with **Condition E65 and E66**.

Highly Noise Intensive Works

E65 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) in continuous blocks not exceeding three (3) hours each with a minimum respite from those activities or works of not less than one (1) hour.

For the purposes of this condition, 'continuous' includes any period during which there is less than a one (1) hour respite period between ceasing and recommencing any of the work.

Variation to Works Hours

E66 Notwithstanding **Conditions E62 to E65**, works may be undertaken outside the hours specified in the following circumstances:

- (a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or
- (b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or
- (c) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or
- (d) Works which are not subject to an EPL that are approved under an **Out-of-Hours Work Protocol** required by **Condition E70**; or
- (e) construction that causes $L_{Aeq(15\text{ minute})}$ noise levels:
 - (i) no more than 5 dB(A) above the rating background level at any residence in accordance with the *Interim Construction Noise Guideline* (DECC, 2009), and
 - (ii) no more than the 'Noise affected' noise management levels specified in Table 3 of the *Interim Construction Noise Guideline* (DECC, 2009) at other sensitive land uses, and
 - (iii) continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.2 of *Assessing Vibration: a technical guideline* (DEC, 2006), and
 - (iv) intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of *Assessing Vibration: a technical guideline* (DEC, 2006).

*Note: Section 5.24(1)(e) of the EP&A Act requires that an EPL be substantially consistent with this approval. Out-of-Hours works considered under **Conditions E66(c) and (d)** must be justified and include an assessment of the potential impacts and effectiveness of the proposed mitigation measures.*

E67 On becoming aware of the need for emergency works in accordance with **Condition E66(b)**, 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 receivers of the likely impact and duration of those works.

Out-of-Hours Work Scheduling and Respite

E68 Out-of-hours works that are regulated by an EPL as per **Condition E66(c)** or through the **Out-of-Hours Work Protocol** as per **Condition E70** include:

- (a) works which could result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 “*Risk Management – Principles and Guidelines*”; or
- (b) where the relevant road network operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to road network operational performance; or
- (c) where the relevant utility service operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to the operation and integrity of the utility network; or
- (d) where the TfNSW Transport Management Centre (or other road authority) has advised the Proponent in writing that a road occupancy licence is required and will not be issued for the works or activities during the hours specified in **Condition E62** and **Condition E63**.

*Note: Other out-of-hours works can be undertaken with the approval of an EPL, or through the project's **Out-of-Hours Work Protocol** for works not subject to a EPL.*

E69 In order to undertake out-of-hours work under **Condition E68**, the Proponent must identify appropriate respite periods for the out-of-hours works in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with:

- (a) a progressive schedule for periods no less than three (3) months, of likely out-of-hours work;
- (b) the potential works, location and duration;
- (c) the noise characteristics and likely noise levels of the works; and
- (d) likely mitigation and management measures which aim to achieve the relevant noise management level (including the circumstances of when a respite or relocation offer will be available and details about how the affected community can access these offers).

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

Out-of-Hours Work Protocol – Works not subject to an EPL

E70 An **Out-of-Hours Work Protocol** must be prepared to identify a process for the consideration, management and approval of works which are outside the hours defined in **Conditions E62** and **E63** and that are not subject to an EPL. The Protocol must be approved by the Planning Secretary prior to commencement of the works. The Protocol must be prepared in consultation with the EPA and **AA**. The Protocol must identify activities in terms of their risk of adverse impacts on sensitive receivers (low, medium, high) and include:

- (a) a process for the consideration of out-of-hours works against the relevant noise and vibration criteria, including the determination of low, medium and high-risk activities;
- (b) 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 requirement of **Condition E69**. The measures must take into account the predicted noise levels and the likely frequency and duration that sensitive receivers would be exposed to residual impacts, including the number of noise awakening events;
- (c) procedures to facilitate the coordination with other out-of-hours works, including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided;
- (d) an approval process that considers the risk of works, proposed mitigation and 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) medium and high risk activities are approved by the Planning Secretary.
- (e) notification arrangements for affected receivers and the EPA for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works.

Out-of-Hours Works - Coordination and Respite

E71 All works undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must:

- (a) reschedule any works to provide respite to impacted noise sensitive receivers so that the respite is achieved in accordance with **Condition E69**; or
- (b) consider the provision of alternative respite or mitigation to impacted noise sensitive receivers; and
- (c) provide documentary evidence to the **AA** in support of any decision made by the Proponent in relation to respite or mitigation.

Construction Noise and Vibration - General

E72 Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria:

- (a) construction 'Noise affected' noise management levels 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).
- (f) residential ground-borne noise levels of -
 - (i) evening (6:00 pm to 10:00 pm) — internal $L_{Aeq(15 \text{ minute})}$: 40 dB(A), and
 - (ii) night (10:00 pm to 7:00 am) — internal $L_{Aeq(15 \text{ minute})}$: 35 dB(A)

Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level prior to comparing to the construction Noise Management Level.

E73 **Construction Noise and Vibration Impact Statements (CNVIS)** must be prepared for construction ancillary facility(ies) before any works that may exceed the noise management levels, vibration criteria and/or ground-borne noise levels specified in **Condition E72** commence. **CNVIS** must include specific mitigation measures identified through consultation with affected sensitive receivers and the mitigation measures must be implemented for the duration of the works.

E74 Noise generating works near community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.

E75 Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified prior to works that generate vibration commences near those properties. If the potential exceedance is to occur more than once 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 **Communication Strategy** required by **Condition B1**.

Construction Vibration Mitigation - Heritage

E76 The Proponent must conduct vibration testing prior to and during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances and/or any changes required to plant and equipment to prevent damage on built heritage items. These measures must be implemented where testing indicates the potential for vibration to damage built heritage items.

Construction Noise Mitigation – Acoustic Sheds

- E77 All acoustic sheds must be erected as soon as site establishment works at the facilities are completed and before undertaking any works which are required to be conducted within the sheds.

Construction Noise Mitigation – Out-of-Hours Works

- E78 At-receiver noise mitigation in the form of at-property treatment must be offered to the landowners of the residential properties (including long-term accommodation providers) identified in **Appendix C** for habitable living spaces, unless other mitigation or management measures are agreed to by the landowner. Mitigation must be offered prior to out-of-hours works commencing.

The at-property construction noise mitigation treatments must be installed prior to the commencement of any out-of-hours works that may cause sleep disturbance (as described in NSW Road Noise Policy (DECCW, 2011)), unless otherwise approved by the Planning Secretary.

The Proponent must prepare a report which details the range of at-property noise mitigation treatments to be offered and the procedures and terms of implementing such treatments. The report must be endorsed by the **AA** and submitted to the Planning Secretary for approval at least one month prior to making any offers to the landowners of the properties identified in **Appendix C**.

This requirement does not apply if the sensitive receiver has been provided with noise mitigation under the TfNSW(RMS) Noise Abatement Program or the *State Environment Planning Policy (Infrastructure) 2007* (clause 102(3)). The adequacy of at-property treatments will be reviewed where previous treatments have been installed as part of other SSI or CSSI projects.

- E79 Landowners whose residential properties are eligible to receive at-property treatment under **Condition E78** 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.
- E80 The offer for at-property treatment in accordance with **Condition E78** does not expire until the out-of-hours work affecting that property are completed, even if the landowner initially refuses the offer.
- E81 The implementation of **Conditions E78** and **E85** does not preclude the application of other noise and vibration mitigation and management measures including temporary alternative accommodation specified under **Condition E82**.
- E82 Temporary alternative accommodation is to be offered/ made available to residents affected by out-of-hours works (including where utility works are being undertaken for the project) where the construction noise levels, between:
- (a) 10:00 pm and 7:00 am, Monday to Friday;
 - (b) 10:00 pm to 8:00 am, Saturday; and
 - (c) 6:00 pm to 7:00 am, Sunday and public holidays,

are predicted to exceed the NML +25 dB(A) or are greater than 75 dBA ($L_{Aeq}(15 \text{ min})$), whichever is the lesser and the impact is planned to occur for more than two (2) nights over a seven (7) day period. The noise level is to be reduced by 5 dB where the noise contains annoying characteristics and increased by 10 dB if the property has been treated or offered at-property noise treatment.

The noise levels and duration requirements identified in this condition may be changed through an EPL applying to the CSSI.

Workplace health and safety for nearby workers

- E83 At no time can noise generated by construction exceed the National Standard for exposure to noise in the occupational environment of an eight-hour (8 hr) 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.

Noise Mitigation - Operational Noise Mitigation Measures

E84 The Proponent must prepare an **Operational Noise and Vibration Review (ONVR)** to confirm noise and vibration control measures that would be implemented for operation. The **ONVR** must be prepared in consultation with relevant council(s), other relevant stakeholders and the community and must:

- (a) confirm the appropriate operational noise and vibration objectives and levels for surrounding development, including existing sensitive receivers;
- (b) confirm the operational noise predictions based on the final design. Confirmation must be based on an appropriately calibrated noise model (which has incorporated noise monitoring, and concurrent traffic counting, where necessary for calibration purposes). The assessment must specifically include verification of noise levels at all fixed facilities, based on noise monitoring undertaken at appropriately identified noise catchment areas surrounding the facilities;
- (c) confirm the operational noise and vibration impacts at adjoining development based on the final design of the CSSI, including operational daytime $L_{Aeq,15\text{ hour}}$ and night-time $L_{Ae, 9\text{ hour}}$ traffic noise contours;
- (d) 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 *Noise Policy for Industry* (EPA, 2017);
- (e) include a consultation strategy to seek feedback from directly affected land owners on the noise and vibration mitigation measures; and
- (f) procedures for the management of operational noise and vibration complaints.

The **ONVR** is to be reviewed and endorsed by the **AA** and submitted to the Planning Secretary for approval.

The Proponent must make the **ONVR** publicly available and implement the identified noise and vibration control measures in the **ONVR** prior to commencing operation.

E85 Operational noise mitigation measures as identified in **Condition E84** that will not be physically affected by works, or which have not been implemented in accordance with **Condition E78**, must be implemented within six (6) months of the commencement of construction in the vicinity of the impacted receiver to minimise construction noise impacts, unless otherwise approved by the Planning Secretary.

This condition does not apply to sensitive receivers on local streets adjoining President Avenue which may be used by operational traffic as an alternative to President Avenue/ Princes Highway and have not been identified as eligible for noise mitigation under **Condition E78**.

E86 Within 12 months of the commencement of operation, 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 E84**.

The Proponent must prepare an **Operational Noise Compliance Report** to document this monitoring. The Report must include, but not necessarily be limited to:

- (a) noise monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under **Condition E84**;
- (b) noise monitoring at sensitive receivers on local streets adjoining President Avenue where the streets have been identified as being used by operational traffic as an alternative to President Avenue/ Princes Highway. Where it is proposed that traffic calming devices are to be installed, the monitoring is to take place prior to and post the installation of the devices;
- (c) a review of the operational noise levels in terms of criteria and noise goals established in the *NSW Road Noise Policy 2011*;
- (d) 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;

- (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
- (h) identification of additional measures to those identified in the review of noise mitigation measures required by **Condition E84**, and consequent to noise monitoring under item (b) above, that are to be implemented with the objective of meeting the criteria outlined in the *NSW Road Noise Policy* (EPA, 2011) and *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 for information within 60 days of completing the operational noise monitoring and made publicly available.

Blasting Management Strategy

E87 If blasting is proposed, 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.

E88 The **Blast Management Strategy** must be endorsed by a suitably qualified and experienced person.

E89 The **Blast Management Strategy** must be prepared in accordance with relevant guidelines and in consultation with the EPA, to ensure that all blasting and associated activities are carried out so as not to generate unacceptable noise and vibration impacts or pose a significant risk to sensitive receivers.

E90 The **Blast Management Strategy** must be submitted to the Planning Secretary for information no later than one month prior to the commencement of blasting. The Strategy as submitted to the Planning Secretary, must be implemented for all blasting activities.

E91 Blasting associated with the CSSI must only be undertaken during the following hours:

- (a) 9:00 am to 5:00 pm, Monday to Friday, inclusive;
 - (b) 9:00 am to 1:00 pm, Saturday; and
 - (c) at no time on Sunday or on a public holiday;
- or as authorised through an EPL if blasting is proposed outside of these hours.

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

PROPERTY, LANDUSE AND SOCIO-ECONOMIC IMPACTS

E92 The Proponent must identify the utilities and services (hereafter “services”) potentially affected by construction to determine requirements for diversion, protection and/or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. The Proponent, in consultation with service providers, must ensure that disruptions to services resulting from the activity are avoided where possible, and where unavoidable customers are advised in accordance with a process to be documented in the **Communication Strategy** required under **Condition B1**.

Settlement

- E93 A geotechnical model of representative geological and groundwater conditions must be prepared prior to excavation and tunnelling to identify geological structures and groundwater features. The model must include details of proposed excavations and tunnels, construction staging, and identify surface and sub-surface structures, including any specific attributes, which may be impacted by the CSSI. The Proponent must use this model to assess the cumulative predicted settlement, ground movement, stress redistribution and horizontal strain profiles caused by excavation and tunnelling, including groundwater drawdown and associated impacts, on adjacent surface and sub-surface structures.
- E94 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 E95 (Table 16 - Settlement Criteria)** 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.
- E95 In the case of buildings, roads, parking areas and parks, the appropriate criteria which governs the greatest risk of damage are to be selected from **Table 16** unless the Proponent has determined more stringent criteria as a result of **Condition E94**.

Table 16 - 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 car parks)	30 mm	1 in 350	0.1
Buildings and pools – High or sensitive properties (i.e. ≥ 3 levels and heritage items)	20 mm	1 in 500	0.1
Roads and parking areas	40 mm	1 in 250	n/a
Parks	50 mm	1 in 250	n/a

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

- E96 Should the geotechnical model in **Condition E93** identify exceedances of the relevant criteria established by **Conditions E94** and **E95**, the Proponent must implement an instrumentation and monitoring program to measure settlement, distortion or strain as required. The Proponent must also identify and implement appropriate mitigation measures in consultation with the owner(s) of the relevant surface and sub-surface structures prior to excavation and tunnelling works to ensure where possible that the surface and sub-surface structures will not experience exceedances of the relevant criteria.

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

- E97 Where the modelled inputs and parameters in **Condition E93** (including groundwater drawdown) have been monitored as exceeding the limits prescribed in this approval or as modelled, the requirements of **Conditions E93** to **E96** must be undertaken again within three (3) months of the exceedance occurring.

Condition Survey

- E98 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 E93** or as directed by the **IPIAP** established under **Condition E102**. 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.

- E99 Where pre-construction surveys have been undertaken in accordance with **Condition E98**, 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 (3) months of the completion of construction.
- E100 The results of the post-construction surveys undertaken under **Condition E99** 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 (4) months following the completion of construction activities that have the potential to impact on the subject surface / subsurface structure.
- E101 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 nine (9) months of completion of construction unless another timeframe is agreed with the owner of the affected surface or sub-surface structure.
- E102 The Proponent must establish an **Independent Property Impact Assessment Panel (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 E98** and **E100**, 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.

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

Public and Open Space Planning

- E103 A **Recreation Needs Analysis (RNA)** to inform the future recreational requirements of the community in respect of the Bicentennial Park and Scarborough Park North Precinct must be prepared. The RNA must be prepared in consultation with the relevant council, park user group(s) and the community. The scope and outcomes of the **RNA** must consider the requirements of the relevant council.
- E104 A **Recreation Facilities Replacement Plan (RFRP)**, identifying impacts to recreational and community facilities in the Bicentennial Park and Scarborough Park North Precinct during construction and operation must be prepared. The **RFRP** must identify the facilities that would replace impacted facilities.
- Nothing in this condition prevents the Proponent from preparing individual **RFRPs** for separate recreational facilities.
- E105 The facilities identified in the **RFRP** must consider the functionality of impacted facilities with consideration of, but not limited to, the **RNA** and capacity and accessibility from increased demand due to consolidation and intensification of uses (including footpaths and car parking).
- E106 Facilities outlined in the **RFRP** that offset impacts on existing facilities affected by works must be completed, functional and open to the community prior to impacting the existing facilities, or by such other time as may be approved by the Planning Secretary.

- E107 The **RFRP** must be prepared in consultation with the relevant council, user group(s) and the community. The **RFRP** must be approved by the Planning Secretary prior to construction of the relevant replacement recreational facilities. All impacted existing facilities that are proposed to be reinstated following completion of construction, as outlined in the **RFRP**, must be completed and open within 12 months of the project operating, or by such other time as may be approved by the Planning Secretary.
- E108 Any residual land created as a result of the realignment of the active transport corridor under **Condition E151** must be incorporated as public space in the reinstated Rockdale Bicentennial Park and nearby parks.
- E109 Construction must be staged to maximise progressive public access and use of the reinstated Rockdale Bicentennial Park and other public spaces.
- E110 Prior to operation of the CSSI, the Proponent must ensure that there is suitable provision for a pedestrian pathway and vehicular access road for council maintenance vehicles to connect Lots 25 and 30 (both identified in the plan set out in **Appendix D**) to Marsh Street at Arncliffe. The pathway and access road provisions must meet the reasonable requirements of Bayside Council.

SOILS

- E111 All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise water pollution. When implementing such controls, any relevant guidance in the *Managing Urban Stormwater* series must be considered.

Contaminated Sites

- E112 Prior to the commencement of any works that would result in the disturbance of potential or contaminated land and/or soil, a **Site Contamination Report** must be prepared by a suitably qualified and experienced person, in accordance with guidelines made or approved under the *Contaminated Land Management Act 1997* (NSW). The **Site Contamination Report** must document the outcomes of Stage 1 and Stage 2 contamination assessments of land upon which the CSSI is to be carried out, or land associated with the CSSI, that is suspected, or known, to be contaminated. The report must identify the nature and extent of any existing remediation (such as impervious surface cappings). The **Site Contamination Report** must detail, where relevant, whether the land is suitable (for the intended final land use) or can be made suitable through remediation and/or outline the potential contamination risks from the CSSI to human health and receiving waterways.

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

Measures to identify, handle and manage potential contaminated soils, materials and groundwater must be identified in the Site Contamination Report and incorporated into the **Contamination CEMP Sub-plan** (prepared under **Condition C4**), unless otherwise approved by the Planning Secretary.

Should remediation be required to make land suitable for the final intended land use, a **Remediation Action Plan** must be prepared and implemented and submitted to the Planning Secretary for information prior to undertaking remediation. The plan must detail how the environmental and human health risks will be managed during the disturbance, remediation and/or removal of contaminated soil or groundwater.

If remediation is required, a **Section A Site Audit Statement** and **Site Audit Report**, must be prepared by a Site Auditor accredited by EPA under the *Contaminated Land Management Act 1997* (NSW).

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

A **Section A Site Audit Statement** and its accompanying **Section A Site Audit Report**, which state that the contaminated land disturbed by the works has been made suitable for the intended land use, must be submitted to the Planning Secretary and relevant council after remediation. Contaminated land must not be used for the purpose approved under the terms of this approval until a **Section A 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.

E113 An **Unexpected Contaminated Land and Asbestos Finds Procedure** must be prepared prior to the commencement of construction and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.

E114 The **Unexpected Contaminated Land and Asbestos Finds Procedure** must be implemented throughout construction.

SUSTAINABILITY

E115 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.

E116 The **Sustainability Strategy** must be made publicly available prior to the commencement of works, and must be implemented throughout construction and operation.

TRAFFIC, TRANSPORT AND ACCESS

Construction Access

E117 Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, an alternate route which complies with the relevant standards must be provided and signposted prior to the restriction or removal of the relevant pedestrian and cyclist access.

E118 During construction, where bus stops are required to be temporarily closed or relocated, such closure must not occur until relocated bus stops are functioning, have similar capacity and 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 Transport for NSW and 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.

E119 Prior to the commencement of operation, all bus stops temporarily closed or relocated must be reinstated in a manner that provides equal or improved capacity, amenity and accessibility (including footpaths and road crossings) in consultation with Transport for NSW and relevant council(s).

E120 Access to all utilities and properties must be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.

E121 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.

E122 Access to and from the Rockdale construction ancillary facility (C2) by heavy vehicles must only be via West Botany Street, unless otherwise approved by the Planning Secretary.

E123 Heavy vehicles used for spoil haulage associated with the CSSI are not permitted to use local roads within one (1) kilometre of works and construction ancillary facilities, unless approved by the Planning Secretary. This includes movements associated with circling ancillary facilities.

E124 Notwithstanding **Condition E123**, heavy vehicles used to haul spoil generated from works at the C4 construction ancillary facility are permitted to use Bruce Street and Moate Avenue but only during the hours of work specified in **Condition E62**.

E125 All requests under **Condition E123** to the Planning Secretary for local road usage need to include a traffic, cyclist and pedestrian impact assessment. The traffic, cyclist and pedestrian impact assessment may be included in the **Site Establishment Management Plan** or **Traffic and Transport and Access CEMP Sub-plan** as relevant, or submitted as a stand-alone document, and must:

- (a) include a swept path analysis;
- (b) demonstrate that local road usage will not compromise the safety of the public and have minimal amenity impacts;
- (c) provide details as to the date of completion of the road dilapidation surveys for the subject local roads; and
- (d) describe the measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak times of operation.

E126 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 (1) year following the completion of construction.

*Note: Refer to **Condition A41** in relation to vehicle identification.*

Road Dilapidation

E127 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 (3) weeks of completion of the survey and no later than one (1) month prior to the road being used by heavy vehicles associated with the CSSI.

E128 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)**.

Parking

E129 Construction vehicles (including staff vehicles) associated with the CSSI must be managed to minimise parking, idling and queuing on public roads.

E130 A **Construction Parking and Access Strategy** must be prepared and implemented to identify and mitigate impacts resulting from on- and off-street parking changes during construction. The Strategy must include, but not necessarily be limited to:

- (a) confirmation and timing of the removal of on- and off-street parking associated with construction (including during site establishment when access to off-street parking at construction ancillary facilities has yet to be established);
- (b) parking accumulation surveys (consistent with Austroads requirements) of parking spaces to be removed to determine current demand during peak, off-peak, school drop off and pickup, and weekend periods;
- (c) consultation with affected stakeholders, including property occupants with driveway access along President Avenue between Civic Avenue and Princes Highway, utilising existing on- and off-street parking stock which will be impacted as a result of construction and impacted by the introduction of temporary clearways on President Avenue;
- (d) review of the impacts of changes to on- and off-street parking stock taking into consideration outcomes of consultation with affected stakeholders;

- (e) identification of mitigation measures to manage impacts to stakeholders as a result of on- and off-street parking changes including, but not necessarily limited to, staged removal and replacement of parking and provision of alternative parking arrangements;
- (f) strategies to address shortfalls in car parking spaces at individual construction ancillary facilities and disincentivising construction personnel from parking on the street near work sites instead of further afield at a different construction ancillary facility where car spaces are available, including managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds;
- (g) provision of a shuttle bus service(s) to transport workers to site(s) and details of the shuttle bus service(s), including service timing and frequency;
- (h) mechanisms for monitoring, over appropriate intervals, to determine the effectiveness of implemented mitigation measures;
- (i) provision of contingency measures should the results of mitigation monitoring indicate implemented measures are ineffective; and
- (j) provision of reporting of monitoring results to the Planning Secretary and relevant council(s) at three (3) monthly intervals.

The **Construction Parking and Access Strategy** must be submitted to the Planning Secretary for information prior to the commencement of any works that impact parking.

- E131 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.

Safety Audits

- E132 The CSSI (including new or modified local roads, parking, on-road pedestrian and cycle infrastructure) must be designed to meet relevant design, engineering and safety guidelines.

- E133 Independent **Safety Audit(s)** are to be undertaken by an appropriately qualified and experienced person during detailed design (audit of the plans) and prior to opening (pre-opening audit) to assess the safety performance of new or modified roads (road safety audit), parking, pedestrian and cycle infrastructure provided as part of the CSSI (including operational ancillary facilities) to ensure that they meet the requirements of relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Management.

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.

Road Network Performance Plan

- E134 Prior to the commencement of operation, the Proponent must prepare a **Road Network Performance Plan** in consultation with the relevant council(s). The Plan should incorporate operational traffic modelling results from the operation of major motorways including but not limited to WestConnex M4-M5 Link (SSI 7485) and New M5 (SSI 6788) projects (including any Road Network Performance Plan or Operational Road Network Performance Review prepared therefor), and include:

- (a) consideration of movement and place analysis and local initiatives, such as local area improvement strategies and potential land use changes, and any traffic changes as a result of other major projects within 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 the St Peters Interchange and the intersection of the southern tunnel portal and President Avenue,
- (ii) traffic movements into and out of Oakdale Avenue from the eastbound direction of President Avenue,
- (iii) 'rat running' through Moorefield Estate,
- (iv) traffic movements at the intersection of Rocky Point Road, Princes Highway and Marshall Street, and
- (v) righthand turns out of Civic Avenue onto President Avenue; 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. The mitigation measures in the Plan must be implemented by the Proponent prior to the commencement of operation.

Note: Identified mitigation measures may need to be further assessed under the EP&A Act. works will need to meet relevant design standards and be subject to independent road safety audits.

- E135 The Proponent must prepare an **Operational Road Network Performance Review** at 12 months and again at five (5) years after the commencement of operation. The Review must identify network performance impacts and review the performance of the CSSI on the adjoining road network. The Review must confirm the adequacy of the mitigation measures identified in the **Road Network Performance Plan** required under **Condition E134**.

Where the Review identifies the need for amended or new mitigation measures, the Review must set out a process for developing and implementing the measures.

The Review must be undertaken in consultation with the relevant councils and be completed within six (6) months of the two review timeframes (i.e. 12 months and five (5) years).

Each Review must be provided to the Planning Secretary for information within 60 days of its completion.

Note: Identified mitigation measures may need to be further assessed under the EP&A Act. works will need to meet relevant design standards and to subject to independent road safety audits.

URBAN DESIGN AND PLACE MAKING

Construction Ancillary Facilities

- E136 The CSSI must be constructed in a manner that minimises visual impacts of construction sites, such as providing temporary landscaping and vegetative screening of the construction sites, minimising light spill, and incorporating treatments and finishes within key elements of temporary structures that reflect the context within which the construction sites are located.

General Design

- E137 The CSSI must be designed to address the principles outlined in *Better Placed* and *Greener Places* by the NSW Government Architect.

- E138 The reinstated area of Rockdale Bicentennial Park located above and adjacent to the southern tunnel portal of the project must have adequate soil depth to facilitate planting of a diverse range of vegetation including mature trees.

- E139 The CSSI must incorporate water-sensitive urban design principles into the detailed design process and maximise the integration of existing and enhanced water features into the open space features of the site including enhancements to Scarborough Ponds, Rockdale Wetland, Rockdale Bicentennial Ponds and other waterways.

Lighting and Security

- E140 The Proponent must construct and operate the CSSI with the objective of minimising light spillage to surrounding properties. All lighting associated with construction and operation must be consistent with the requirements of *Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting* and relevant Australian Standards in the series AS/NZ 1158 – *Lighting for Roads and Public Spaces*, as relevant. Additionally, the Proponent must provide mitigation measures to manage any residual night lighting impacts from operational motorway complexes and the shared pedestrian and cycling pathway to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.
- E141 The Proponent must implement measures, in consultation with affected residents, to prevent headlights from vehicles exiting the Rockdale construction ancillary facility (C2) spilling onto residences along West Botany street that are adjacent to and opposite the site access way.
- E142 The Proponent must construct and operate the CSSI with the objective of avoiding adverse or distracting lighting configuration, spillage or intensity to aircraft operations. All lighting associated with construction and operation must adhere to the *Lighting in the Vicinity of Aerodromes: Advice to Lighting Designer* (CASA, 1999) and *National Airports Safeguarding Framework Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports* (DITCARD, 2012). Notwithstanding, the Proponent must provide mitigation measures to manage any residual night lighting impacts to protect aircraft operations, in consultation with CASA and DITCARD.
- E143 Notwithstanding **Condition E142**, the Proponent must consult with CASA, DITCARD and Sydney Airport Operators prior to the commencement of construction to determine the need and potential positioning of aviation hazard lighting on any equipment or built form component associated with the CSSI where such consultation deems it necessary.
- E144 The CSSI must incorporate appropriate community safety, amenity and privacy measures, including 'safer by design' principles where relevant.

Tree Removals and Plantings

- E145 The CSSI must be designed to retain as many trees as possible. Where trees are to be removed, and those trees are not required to be offset under **Condition E58**, the Proponent must provide a net increase in the number of replacement trees.
- E146 Prior to removing any street trees, the Proponent must commission an experienced and suitably qualified arborist independent of the design and construction of the CSSI, to prepare a comprehensive **Tree Report(s)**. The **Tree Report** may be prepared for all trees that will be removed or separate reports may be prepared for individual areas where trees are required to be removed. The report(s) must include:
- (a) a visual tree assessment of the type, stability and health of the tree;
 - (b) consideration of all options to amend the CSSI where a street tree has been identified for removal, including realignment, relocation of services, redesign of or relocation of ancillary components and reduction of standard offsets to underground services; and
 - (c) measures to avoid the removal of trees or minimise damage to existing trees.
- A copy of the report(s) must be submitted to the Planning Secretary for approval prior to the removal of any trees. All recommendations of the report(s) must be implemented by the Proponent, unless otherwise approved by the Planning Secretary.
- E147 Replacement trees and plantings should target an increase in tree canopy and aim to enhance the relevant council's position in respect of the Sydney Green Grid. The planting of replacement trees must be within and on public land and prioritised within 500 metres of the CSSI construction boundary. The location of the replacement tree plantings must be determined in consultation with the relevant council and replacement trees must be provided by no later than six (6) months following the commencement of operation, unless an alternate timeframe is approved by the Secretary.

E148 Replacement trees are to have a minimum pot size of 75 litres except where the plantings are consistent with the pot sizes specified in a relevant council's plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant council. In areas not subject to council plans / programs / strategies, pot sizes should be informed through consultation with the council for the local government area in which the trees will be planted.

E149 The Proponent must submit to the Planning Secretary a report which details the type, size, number and location of replacement trees. The report must demonstrate how any replacement plantings with a pot size less than 75 litres are consistent with the requirements of **Condition E148**. The report must be submitted to the Planning Secretary for information no later than nine months following the commencement of operation.

Pedestrian and Cyclist Access

E150 The Proponent must review the feasibility of constructing an at-grade footpath along the northern side of President Avenue between West Botany Street to the west and O'Neill Street to the east to provide a continuous east-west connection along the northern side of President Avenue. If the review indicates that it is feasible to install the footpath, then the footpath must be constructed as part of the CSSI and be completed prior to operation.

Should the assessment conclude that it is not feasible to construct the footpath, then the Proponent must provide a copy of the review and a written statement to the Planning Secretary justifying why the path will not be constructed. The assessment and statement must be submitted to the Planning Secretary for information within 12 months of commencing construction.

E151 The proposed on-road portion of the active transport corridor between Bruce Street and England Street at Brighton-Le-Sands, as described in the EIS, must be realigned:

- (a) to follow the existing F6 reserved corridor;
- (b) utilise TfNSW(RMS)-owned properties where possible;
- (c) in a manner that maximises the safe movement of pedestrians and cyclists, and maximises the separation of the cycleway from the existing road network; and
- (d) to provide a contiguous shared pathway for pedestrians and cyclists between Greg Arkins Mini Field and Rockdale Bicentennial Park via Tony Baker Reserve.

E152 The Proponent must investigate the feasibility of an alternative alignment of the shared path over President Avenue and through Patmore Swamp to minimise impacts on the biodiversity values of Patmore Swamp. In particular, the assessment should investigate realigning the shared path to the eastern boundary of Scarborough Park North and relocating the southern landing of the shared path over President Avenue away from the wetlands.

E153 A detailed **Pedestrian and Cycle Implementation Plan** must be included as a component of the **Urban Design and Landscape Plan** required by **Condition E154**. The Plan must be prepared in consultation with relevant council(s) and Bicycle NSW. The Plan must include:

- (a) pedestrian and cycle engineering and safety standards;
- (b) a safety audit of existing and proposed pedestrian and cycle facilities to address the above standards;
- (c) details of selected routes and connections to existing local and regional routes, including the findings of **Conditions E150, E151 and E152**;
- (d) timing and staging of all works;
- (e) infrastructure details, including lighting, safety, security, and standards compliance;
- (f) signage and wayfinding measures; and
- (g) details of associated landscaping works.

All identified works arising from this condition are to be implemented prior to the commencement of operation, except as permitted by this approval.

Urban Design and Landscape Plan

E154 A **UDLP** must be prepared to inform the final design of the CSSI, in accordance with the project objectives, the commitments made in the documents listed in **Condition A1**, and the requirements of this approval.

The **UDLP** does not apply to works that do not allow an alternate design outcome and this has been approved by the Planning Secretary.

E155 The **UDLP(s)** must be prepared by a suitably qualified and experienced person(s). Unless otherwise approved by the Planning Secretary, the person(s) must show demonstrated skill and expertise in the following professional fields:

- (a) architecture;
- (b) urban design;
- (c) landscape design;
- (d) Aboriginal cultural heritage; and
- (e) non-Aboriginal heritage.

E156 The **UDLP** must be prepared in consultation with relevant council(s), the community and affected landowners and businesses. The **UDLP** must meet the reasonable requirements of these stakeholders and must meet or exceed the design standards of relevant council(s) guidelines. The **UDLP** must include, but not necessarily be limited to:

- (a) an analysis of the heritage, built, natural and community context and values, and articulation of the urban design objectives, principles and standards for the CSSI;
- (b) the urban design and landscape requirements of this approval, including but not limited to:
 - (i) the **Pedestrian and Cycle Implementation Plan** identified in **Condition E153**,
 - (ii) heritage interpretation and plantings (including rehabilitation works to address heritage impacts on Patmore Swamps) identified in **Condition E58**,
 - (iii) the **RFRP** identified in **Condition E104**,
 - (iv) sustainability initiatives;
- (c) the design of the CSSI elements including their form, materials, detail and staging;
- (d) the design of the project landform and earthworks;
- (e) 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;
- (f) visual screening requirements;
- (g) developed visuals, cross sections and plans showing the proposed design outcome; and
- (h) details of strategies to rehabilitate, regenerate or revegetate disturbed areas and successfully establish and maintain the resulting new landscape.

E157 The Proponent must submit the **UDLP** to the Planning Secretary for approval no later than one (1) month prior to the construction of permanent built surface works or landscaping works that are the subject of the **UDLP(s)** (in the area to which the **UDLP** applies) or earth works for the final surface contouring of the reinstated Rockdale Bicentennial Park, whichever is the sooner.

E158 Construction of permanent built works or landscaping that are the subject of the **UDLP** must not be commenced (in the area to which the **UDLP** applies) until the **UDLP** has been approved by the Planning Secretary.

E159 The **UDLP**, as approved by the Planning Secretary, must be implemented during construction and operation.

Operational Maintenance

E160 The ongoing maintenance and operation costs of urban design, open space, landscaping and recreational items and works will remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Prior to the transfer of assets, the Proponent must maintain items and works to at least the design standards established in the **UDLP**.

UTILITIES MANAGEMENT

E161 A **Low Impact Utility Works Management Strategy** must be prepared and implemented for low impact utility works. The Strategy must identify how the works will be managed and must include:

- (a) a description of all low impact utility works to be undertaken, including how they meet the definition of **Low Impact Utility Works** and
- (b) the management measures that will be implemented to manage dust, noise, traffic, access and lighting impacts associated with low impact utility works.

The **Strategy** must be submitted to the Planning Secretary for approval at least one (1) month prior to the commencement of low impact utility works.

Note: Utility works that are not low impact are construction and appropriate management measures would be included in the CEMP.

Utility Coordination Manager

E162 A **Utility Coordination Manager** must be appointed for the duration of the works. The role of the **Utility Coordination Manager** must include, but not be limited to:

- (a) the management and coordination of all utility works associated with the delivery of the CSSI, to ensure respite is provided to the community, as required under **Conditions E69 and E71**;
- (b) investigating complaints received from the **Community Complaints Mediator** relating to utility works; and
- (c) providing a response to the **Community Complaints Mediator**.

WASTE

E163 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 at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014 (NSW)*, or to any other place that can lawfully accept such waste.

E164 Waste generated outside the CSSI site must not be received at the CSSI site for storage, treatment, processing, reprocessing or disposal on the CSSI site, except as expressly permitted by a licence or waste exemption under the *Protection of the Environment Operations Act 1997 (NSW)*, if such a licence is required in relation to that waste.

E165 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 (NSW)*, as the case may be.

E166 All waste generated during construction and operation must be classified in accordance with the EPA's *Waste Classification Guidelines*, with appropriate records and disposal dockets retained for audit purposes.

E167 The Proponent must develop and implement a waste tracking register that details:

- (a) the quantity of each type of waste generated, its classification and source location (recorded using latitude and longitude coordinates);
- (b) the destination location(s) for all wastes generated during construction;
- (c) the quantities of any waste types imported onto the CSSI site, including their classification and emplacement location (recorded using latitude and longitude coordinates);
- (d) the quantities and types of wastes that are subject to a Resource Recovery Order and/or Exemption; and
- (e) disposal records demonstrating that receiving facilities have lawfully accepted the waste type.

WATER

E168 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.

Note: Discharge criteria for construction water treatment plant discharges will be included in the EPL for the project.

E169 The CSSI operational water treatment plant discharge criteria must comply with the ANZECC (2000) 95 per cent species protection level and a 99 per cent protection level for contaminants that bioaccumulate unless an EPL is in force for the discharge or other discharge criteria are agreed to by the relevant stakeholders including EPA and Sydney Water. Discharge criteria for iron during operation must comply with the ANZECC (2000) recreational water quality criteria unless an EPL is in force for the discharge or an alternate level is agreed to by the EPA.

E170 Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be carried out in accordance with relevant guidelines and designed by a suitably qualified and experienced person.

E171 Works on waterfront land must be carried out in accordance with controlled activity guidelines.

Groundwater

E172 The Proponent must take measures to limit operational groundwater inflows into each tunnel to no greater than one litre per second across any given kilometre (1L/s/km). Compliance with this condition cannot be determined by averaging groundwater inflows across the length of the tunnel(s).

E173 The Proponent must identify and commit to the implementation of 'make good' provisions for groundwater users in the event of a material decline in water supply levels, quality and quantity from registered existing bores associated with groundwater changes from either construction and/or ongoing operational dewatering caused by the CSSI.

E174 The Proponent must undertake further modelling 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 and meet the requirements of RIAR and include the results and hydrogeological analyses of at least 12 continuous months of current baseline groundwater monitoring data.

The results of the modelling must be documented in a **Groundwater Modelling Report**. The **Groundwater Modelling Report** must be finalised in accordance with the *Australian Groundwater Modelling Guidelines* (National Water Commission, 2012) and prepared in consultation with RIAR. The **Groundwater Modelling Report** must include, but not be limited to:

- (a) modelling for groundwater flow for one, three and twelve months following the commencement of construction in each kilometre of tunnel and during operation;
- (b) justification for 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 piezometres, 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 New M5, the M4 East and the 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**; and
- (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.

A copy of the Groundwater Modelling Report 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 RIAR.

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.

E175 The groundwater model must be updated once 24 months of groundwater monitoring data are available and the results of the modelling provided to the Planning Secretary and RIAR in an updated **Groundwater Modelling Report**.

Stormwater Drainage

E176 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 E177**.

E177 The **Stormwater Drainage Report** must be prepared at least one (1) month prior to the commencement of any new drainage works, modifications or connections to existing drainage works, construction of hard surfaces that are associated with the operation of the project and would result in runoff to existing stormwater drainage systems, and the discharge of wastewater flows from operational water treatment plants to existing stormwater drainage systems. The **Stormwater Drainage Report** must:

- (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.

E178 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.

E179 The Proponent must prepare and implement a **Water Reuse Strategy** 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.

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.

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

APPENDIX A

WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

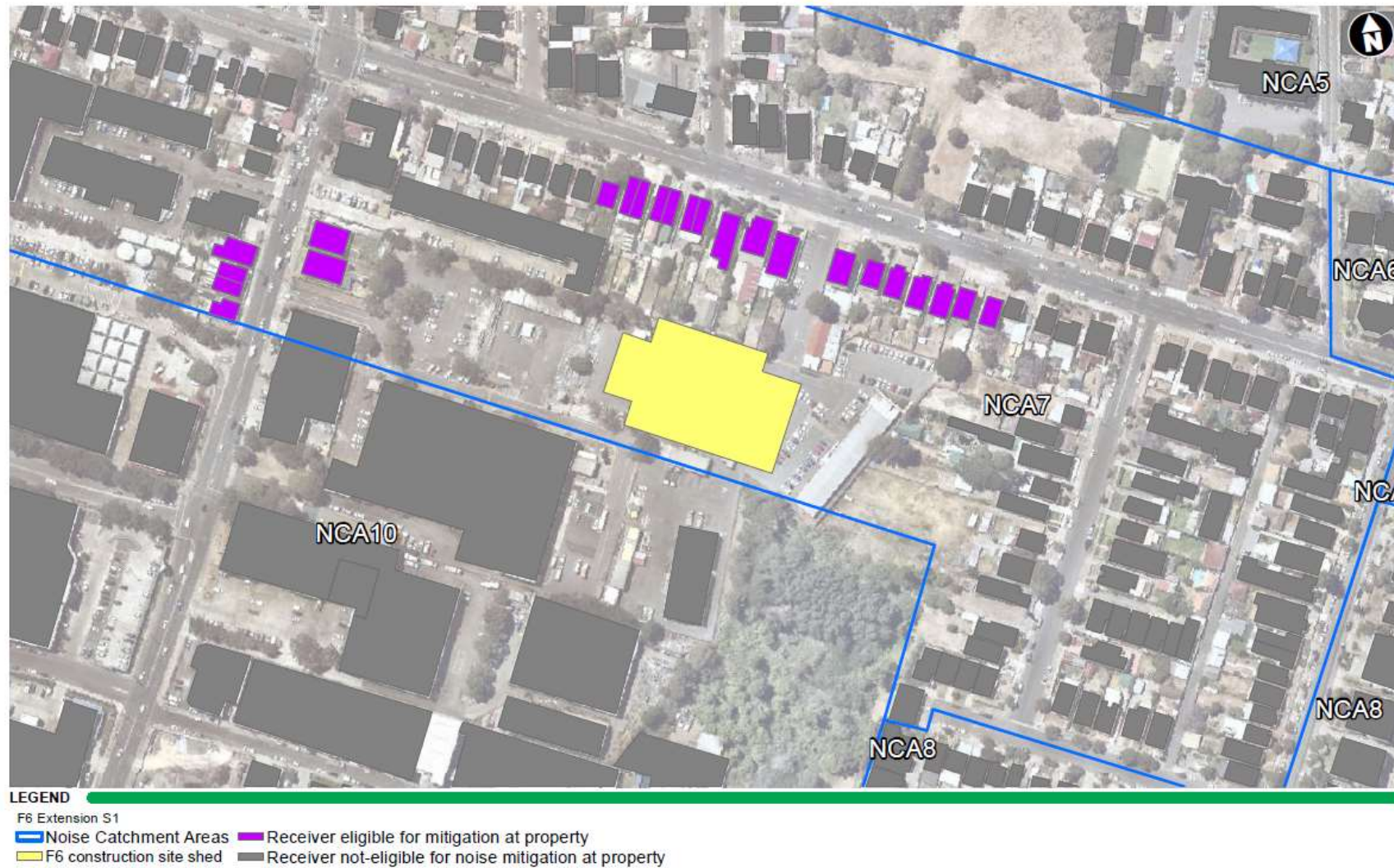
1. A written incident notification addressing the requirements set out below must be emailed to the Department at the following address: compliance@planning.nsw.gov.au within seven days after the Proponent becomes aware of an incident. Notification is required to be given under this condition even if the Proponent fails to give the notification required under **Condition A39** 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 SSI 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
 - (f) approval;
 - (g) describe what immediate steps were taken in relation to the incident;
 - (h) identify further action that will be taken in relation to the incident; and
 - (i) 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 approved 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.

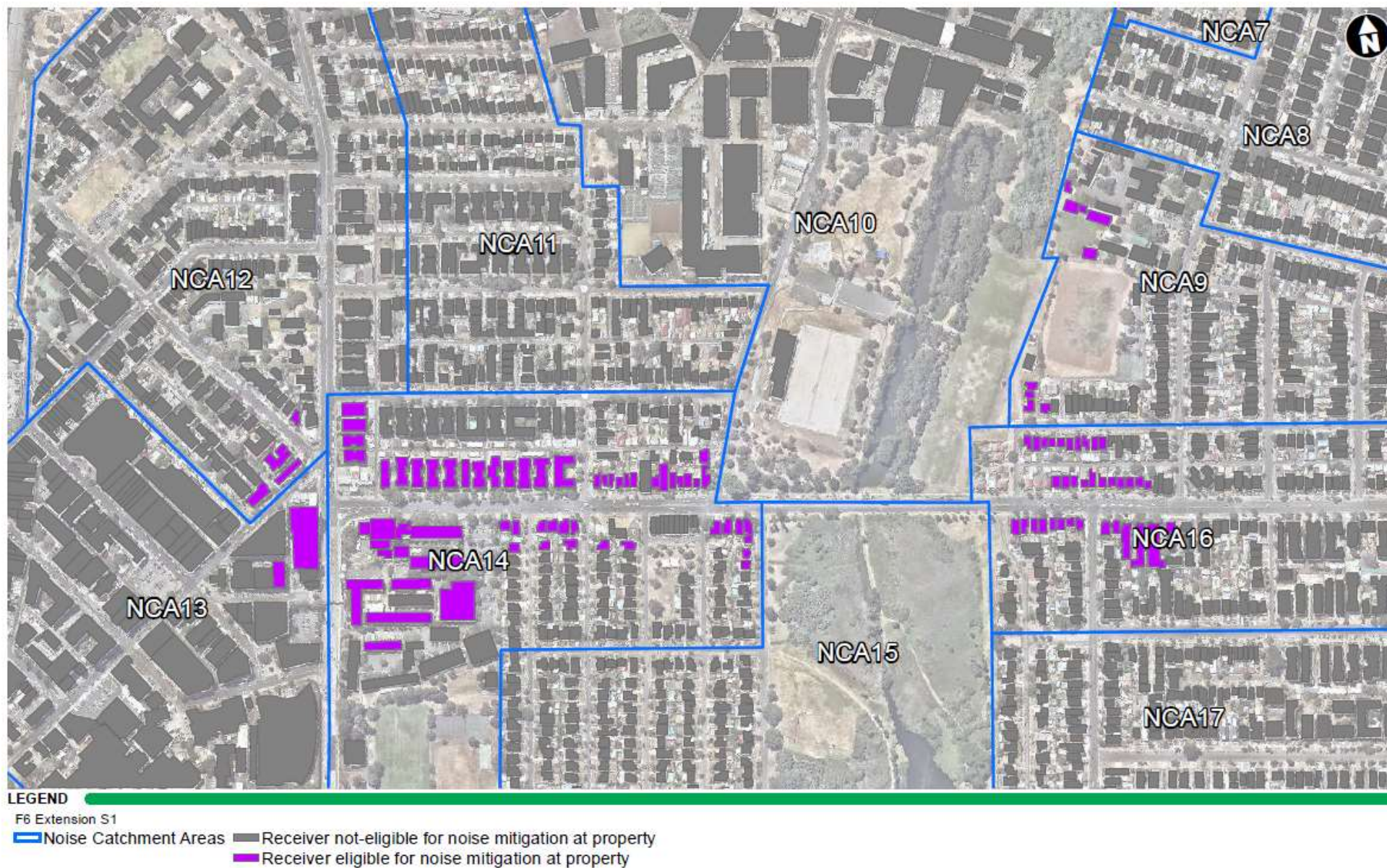
APPENDIX B TUNNEL VENTILATION OUTLETS LOCATION



APPENDIX C

CONSTRUCTION NOISE MITIGATION – OUT-OF-HOURS WORKS





APPENDIX D ARNCLIFFE PUBLIC OPEN SPACE

