

Compliance Tracking Program

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00	06/06/16	CDS-JV				
01	21/07/16	CDS-JV				
02	20/12/17	CDS-JV				
Signature:						

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Details of Revision Amendments

Document Control

The Project Director is responsible for ensuring that this Plan is reviewed and approved. The Support Services Director (SSD) is responsible for updating this Plan to reflect changes to the Project, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the Project Director before being distributed or implemented.

Revision Details

Revision	Details
00	Prepared for DP&E approval
01	Update to address DP&E comments. Issued for DP&E approval.
02	Minor update to training & awareness section based on external audit findings

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1. Introduction

1.1 Project description

WestConnex is Australia's largest road project, linking Sydney's west and south-west with the city, airport and port in a 33 kilometre continuous motorway. It will facilitate economic growth and urban revitalisation by providing new opportunities for residential and commercial development.

The WestConnex Project is being delivered in three stages:

- WestConnex Stage 1: M4 – Parramatta to Haberfield (the "M4 East")
- **WestConnex Stage 2: M5 – Beverly Hills to St Peters ("the New M5")**, and
- WestConnex Stage 3: M4-M5 Link – Haberfield to St Peters ("Stage 3").

The WestConnex Project also includes the design and construction of other ancillary infrastructure including road upgrades in the vicinity of Sydney Airport and Port Botany (the "Sydney Gateway").

Sydney Motorway Corporation (SMC, previously WestConnex Delivery Authority) has been established to facilitate, lead and manage the procurement and delivery of the WestConnex Project.



The New M5 Project (New M5, the project) is designated as State Significant Infrastructure (SSI 6788) and is the Stage 2 component of the WestConnex scheme. The proponent for the project is Roads and Maritime Services (RMS) and the project company (WCX M5 AT). WCX M5 AT has engaged the CPB Samsung Dragados Joint Venture (CDS-JV) to deliver the design and construction of the project. The project was approved by the Minister for Planning on 20 April 2016, subject to conditions.

The Project will run from the existing M5 East corridor at Beverly Hills via tunnel to St Peters, providing improved access to the airport, south Sydney and Port Botany precincts. The Project will substantially improve the east - west corridor access between the Sydney CBD, Port Botany and Sydney Airport precincts and the South West growth areas.

The project comprises the following key features:

- Twin motorway tunnels between the existing M5 East Motorway (between King Georges Road and Bexley Road) and St Peters. Each tunnel would be around nine kilometres in length and would be configured as follows:
 - Between the western portals and Arncliffe, the tunnels would be built to be three lanes wide but marked for two lanes as part of the project. Any change from two lanes to three lanes would be subject to future environmental assessment and approval

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- Between Arncliffe and St Peters, the tunnels would be built to be five lanes wide but marked for two lanes as part of the project. Any change from two lanes to any of three, four or five lanes would be subject to future environmental assessment and approval
- Tunnel stubs to allow for a future connection to the M4-M5 Link and a future connection to southern Sydney via a future Southern extension
- Surface road widening works along the M5 East Motorway between east of King Georges Road and the new tunnel portals
- A new road interchange at St Peters, which would initially provide road connections from the main alignment tunnels to Campbell Road and Euston Road, St Peters
- Two new road bridges across Alexandra Canal which would connect St Peters interchange with Gardeners Road and Bourke Road, Mascot
- Closure and remediation of the Alexandria Landfill site, to enable the construction and operation of the new St Peters interchange
- Works to enhance and upgrade local roads near the St Peters interchange
- Ancillary infrastructure and operational facilities for electronic tolling, signage (including electronic signage), ventilation structures and systems, fire and life safety systems, and emergency evacuation and smoke extraction infrastructure
- A motorway control centre that would include operation and maintenance facilities
- New service utilities and modifications to existing service utilities
- Temporary construction facilities and temporary works to facilitate the construction of the project
- Infrastructure to introduce tolling on the existing M5 East Motorway

Surface road upgrade works within the corridor of the M5 East Motorway.

1.2 Staging

Roads and Maritime has elected to stage the New M5 project in accordance with CoA A10. The stages are described in detail in the New M5 Staging Report and are summarised in Table 1.

Table 1: Project staging

Stage	Sub-stage	Project location	Description
1	a)	Kingsgrove construction compounds (C1, C2 and C3)	Site establishment activities e.g.: minor vegetation clearance, demolition, installation of environmental controls, services protection/installation/relocation, installation of access arrangements, installation of site fencing, installation of noise walls including associated piling, installation of compound facilities including offices, amenities and workshops.
	b)	Bexley Road North (C4), Bexley Road South (C5), Bexley Road East (C6), Arncliffe (C7), Canal Road (C8), Campbell Road (C9), Landfill Closure (C10) and Burrows Road (C11) Construction Compounds.	
	c)	HV power alignments as described in Addendum No. 1 to the Ancillary Facilities Management Plan (AFMP): Alignment 1: Rockdale substation to Arncliffe construction compound (C7); Alignment 2: Commercial Road to Kingsgrove construction compound (C3); Alignment 3: May St substation to Canal Road construction compound (C8); Alignment 4: Campsie substation to Bexley North construction compound (C4).	Provision of High Voltage (HV) power to construction compounds C3, C4, C7 and C8 including protection and/or relocation of existing services, trenching, pipe-jacking, horizontal directional drilling, cable-pulling, backfilling of trenches, temporary stockpiling and reinstatement/rehabilitation of pavements and surfaces.
2	a)	Kingsgrove construction compounds (C1, C2 and C3)	Continuation of Stage 1 activities, and commencement of all other establishment

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Stage	Sub-stage	Project location	Description
	b)	Bexley construction compounds (C4-C6)	and construction activities, including installation of acoustic sheds, excavation of shafts/declines, demobilisation and rehabilitation.
	c)	Arncliffe construction compound (C7)	
	d)	St Peters Interchange construction compounds (C8-C11)	
	e)	Local Roads construction compounds (C12-C14)	
3		Mainline tunnelling	Mainline tunnelling works including excavation with roadheaders, tunnel fit-out and commissioning works.

The key distinguishing feature of Stage 2 is the commencement of construction as defined under the Infrastructure Approval. Stage 3 comprises mainline tunneling activities, which includes roadheader excavation, tunnel fit-out and commissioning.

Stage 1 activities are anticipated to commence in July 2016, Stage 2 activities in August 2016 and Stage 3 activities in February 2017.

1.3 Purpose

The purpose of this Compliance Tracking Program (CTP) is to satisfy CoA A14 of the planning approval and to describe the compliance reporting requirements of the project against conditions and requirements for the construction and operational phases. Under CoA A14, the compliance tracking program requires the following compliance reports:

- A pre-construction compliance report;
- Quarterly construction compliance reports, likely to commence July 2016 and to continue for the duration of construction; and
- A pre-operation compliance report, prior to the commencement of operation, and six monthly operational compliance reports.

The CTP will operate throughout construction and for a minimum of 24 months after the commencement of operation. The CDS-JV, WCX M5 AT and RMS together, are responsible for compliance with the project conditions of approval and other requirements.

The scope of this report is based on CoA A14. The requirements relevant to the Compliance Tracking Program are provided in Table 3.

An indicative program for construction is provided in Table 2 below.

Table 2: Indicative construction program

Activity	2016	2017	2018	2019
Site establishment				
Landfill closure works				
Construction of western surface works				
Tunnel construction				
Construction of St Peters Interchange				

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Activity	2016	2017	2018	2019
Portal construction				
Construction of local road upgrades				
Construction of permanent operational facilities				
Mechanical and electrical fit-out				
Establishment of tolling facilities				
Demobilisation and rehabilitation				

1.4 Environmental management system overview

The environmental management system (EMS) is the primary system to manage and control the environmental aspects of the project during pre-construction and construction. It also provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative requirements are fulfilled.

The CDS-JV EMS is based on the CPB Contractors EMS, which was adapted to address project and joint venture requirements.

The Construction Environmental Management Plan (CEMP) is the key document of the EMS. The strategies defined in the CEMP have been developed with consideration of the CoA and the revised environmental management measures (REMMs) presented in the New M5 Submissions Report. The CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the project on the environment and community.

This CTP is separate from the CEMP, but is part of a suite of environmental management documents prepared for the New M5 project.

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2. Program requirements

This CTP has been prepared as a requirement of CoA A14. The requirements of this condition are detailed in Table 3.

Table 3: Conditions of Approval for the CTP

No.	Relevant requirement	Where addressed
A14	<p>The Proponent must prepare and implement a Compliance Tracking Program to track compliance with the requirements of this approval. The Compliance Tracking Program must be submitted to the Secretary for approval prior to the commencement of construction and operate for a minimum of 24 months following commencement of operation, subject to the Secretary's review of the outcomes of the Independent Environmental Audit Report required by condition E51. The operation of the program may be extended if the Secretary determines that there has been unsatisfactory compliance.</p> <p>The Compliance Tracking Program must include, but not be limited to:</p>	<p>This document.</p> <p>This CTP will be provided to the Secretary for approval, prior to the commencement of construction and will operate for a minimum of 24 months following commencement of operation.</p>
(a)	provision for the notification of the Secretary prior to the commencement of construction and prior to the commencement of operation of the SSI (including prior to each stage, where works are being staged);	Section 2.2
(b)	provision for periodic review of the compliance status of the SSI against the requirements of this approval and the environmental management measures committed to in the document referred to in condition A2(c);	Section 2.3
(c)	<p>provision for periodic reporting of compliance status to the Secretary, including but not limited to:</p> <ul style="list-style-type: none"> i (i) a Pre-Construction Compliance Report prior to the commencement of construction, ii (ii) quarterly Construction Compliance Reports, for the duration of construction, iii (iii) a Pre-Operation Compliance Report prior to the commencement of operation, and six monthly operational compliance reports; 	Section 2.4
(e)	a program for independent environmental auditing in accordance with <i>AS/NZS ISO 19011:2014- Guidelines for Auditing Management Systems</i> ;	Section 2.5
(f)	mechanisms for recording environmental incidents during construction and actions taken in response to those incidents;	Section 2.6
(g)	procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management; and	Section 2.7
(h)	provision for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.	Section 2.8

2.1 Assessment under the Instrument of Approval and REMMs

The CTP is prepared in accordance with CoA A14 and is required to address the project requirements contained in the Minister's Conditions of Approval and the Revised Environmental Management Measures (REMMs) provided in the Submissions Report. The New M5 must demonstrate continuous compliance with all associated requirements.

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Table 4 provides a definition for the assessment criteria, to be used during reporting of compliance required by CoA A14.

Table 4: Assessment criteria for compliance

Status	Description
Compliant	The intent and all specific requirements of the consent conditions have been met.
Verification	In the absence of formal written verification the auditor is able to verify by other demonstrable means (visual inspection, personal communication etc) that a condition has been met then, in most cases, the operation should be considered to be in compliance for that condition.
Non-compliant	The intent or one or more specific requirements of the conditions or management measures have not been met.
Administrative non-compliance	A technical non-conformance with a condition of the consent that would not impact on environmental performance and that is considered minor in nature (eg. Report submitted but not on the due date). This would not apply to performance-related aspects (eg. Exceedances of a noise limit) or where a condition or management measure has not been met at all (eg. Noise management plan not prepared and submitted for approval at all).
Not triggered	A condition or requirement has an activation or timing requirement that has not been sufficiently triggered at the time of the review, therefore a determination of compliance should not be made.
Observation	An observation made or improvement opportunity has been identified.

2.2 Department of Planning and Environment notification

CDS-JV will commence construction as defined by the Instrument of Approval once all appropriate safety and environmental approvals/consents are in place, including the approval of the CEMP by the Secretary of Department of Planning and Environment (DP&E).

CDS-JV will provide written notification to the Secretary prior to the commencement of construction, prior to the commencement of each stage and prior to the commencement of operation. CDS-JV will also submit an updated Staging Report to the Secretary that provides compliance status against each condition, as required by CoA A10, prior to the commencement of each stage.

2.3 Periodic review

Regular compliance activities, such as inspections, observations and monitoring will be undertaken in accordance with the CEMP

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

A summary of monitoring requirements specifically identified in the Conditions of Approval for the construction phase of the project are summarised in Table 5. Monitoring requirements are addressed within specific programs or plans as identified in the final column.

Table 5: Project monitoring requirements identified in the CoA

CoA ref	Required monitoring	Where addressed
Construction phase		
B13	A Biodiversity Offset Package is required to be developed. Monitoring must be undertaken for any potential compensatory habitat works if required	Biodiversity Offset Package
B14(a)	An adaptive monitoring program is to be developed for the Green and Golden Bell Frog Plan of Management	Green and Golden Bell Frog Plan of Management

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CoA ref	Required monitoring	Where addressed
B15(a)	An adaptive monitoring program to assess the success of the habitat creation, survival and breeding of the released GGBF population at Arncliffe	Habitat Creation and Captive Breeding Plan
B15(j)	Ongoing monitoring, review and amendment of the Habitat Creation and Captive Breeding Plan	Habitat Creation and Captive Breeding Plan
B28(h)	Baseline surface water and groundwater monitoring conducted prior to the commencement of construction.	Water Quality Plan and Monitoring Program
B28(i),(j),(k), (m),(q),(r)	Surface water and groundwater monitoring required at specific locations and frequency and duration that are representative of the potential extent of impacts from the project, including monitoring of discharges from construction and operational water treatment plants, monitoring of streambed fracturing and extracted groundwater volumes	Water Quality Plan and Monitoring Program
B32(a),(e)	Monitoring framework implemented following the cessation of waste disposal and material recycling activities at the Alexandria Landfill and associated waste recycling and transfer facility, including groundwater monitoring bore network	Landfill Closure Management Plan
B61(m)	Monitoring and maintenance procedures for built elements, rehabilitated vegetation and landscaping	Urban Design and Landscape Plan
B66(a)	Monitoring social impacts of the SSI, including cumulative impacts and reviewing the effectiveness of mitigation measures in directly affected precincts.	Community and Social Management Plan
D1(b)	The Environmental Representative must monitor the implementation of environmental management plans and monitoring programs required under the CoA.	Construction Environmental Management Plan (CEMP)
D22	Vibration testing and monitoring to identify minimum working distances to retained heritage items to prevent cosmetic damage.	Construction Noise and Vibration Management Plan (CNVMP) Construction Heritage Sub-Plan (CHSP)
D23	Noise monitoring during initial high noise generating activities (such as piling, rock hammering, jack hammering) to confirm the number of sensitive receivers which may experience sleep disturbance.	CNVMP
D28(f)	Appropriate noise and vibration monitoring during blasting activities.	Blast Management Strategy (if blasting is required)
D50(f)	Monitor the impacts resulting from on and off-street parking changes during construction	Construction Parking and Access Strategy
D54(e)	The Construction Contamination Management Plan will describe monitoring of the actions and measures implemented to manage contamination impacts during construction and	Construction Contamination Management Plan
D54(f)	Monitoring, review, and amendment of the Construction Contamination Management Plan	Construction Contamination Management Plan
D57(f)	Details of monitoring specific to each facility to be implemented to minimise environmental and amenity impacts of ancillary facilities, and	Ancillary Facilities Management Plan (AFMP)
D57(l)	Monitoring, review and amendment of the Ancillary Facilities Management Plan.	AFMP
D67(e)	Monitoring of environmental performance across the project.	CEMP
D67(e)(i)	Monitor and manage dust emissions.	Construction Air Quality Sub-Plan (CAQSP)
D67(e)(iii)	Monitor and manage waste generated during construction.	Waste and Resource Sub-Plan (CWRSP)
D67(e)(iv)	Monitor and manage hazard and risks across the project.	CEMP and each sub-plan

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CoA ref	Required monitoring	Where addressed
D67(e)(v)	Monitor and rectify impacts to third party property and infrastructure.	Community Communication Strategy
D68(a)(xi)	Monitor, review and amend the Construction Traffic and Access Management Plan.	Construction Traffic and Access Management Plan (CTAMP)
D68(b)(xi)	Monitor effectiveness of mitigation and management measures implemented during proposed works.	CNVMP
D68(b)(xiii)	Monitor, review and amend the Construction Noise and Vibration Management Plan.	CNVMP
D68(c)(ii)(C)	Monitor and report on impacts to heritage items.	CHSP
D68(c)(iii)	Monitor, review and amend the Construction Heritage Management Plan.	CHSP
D68(d)(vi)	Monitor the effectiveness of flora and fauna management measures.	Construction Flora and Fauna Sub-Plan (CFFSP)
D68(d)(xi)	Monitor the condition of groundwater dependent ecosystems in Bardwell Valley Parkland and Broadford Street Reserve and Stotts Reserve.	CFFSP and Water Quality Plan and Monitoring Program (WQP&MP)
D68(d)(xiii)	Monitor, review and amend the Construction Flora and Fauna Management Plan	CFFSP
D68(d)(xv)	Monitor, review and amend the Construction Soil and Water Management Plan.	CFFSP
D68(e)(iii)	Monitor air quality impacts.	CAQSP
D68(e)(viii)	Provisions for implementation of additional mitigation measures in response to issues identified during monitoring and reporting.	CAQSP
D68(e)(ix)	Monitor, review and amend the Construction Air Quality Management Plan.	CAQSP
D68(f)(v)	Monitor water quality at acid sulfate soils treatment areas.	Acid Sulfate Soils Sub-Plan (ASSSP)
D68(f)(vi)	Monitor the effectiveness of actions and measures for management soil and water impacts.	Construction Soil and Water Quality Sub-Plan (CSWQSP) and WQP&MP
D68(f)(vii)	Monitor, review and amend the Construction Soil and Water Management Plan.	CSWQSP
Operational phase		
E2	Monitor pollutants within the tunnel.	Operational Environmental Management Plan (OEMP)
E10	Monitor pollutants associated with ambient air quality.	OEMP
E11	Monitoring locations must be selected with the objective of achieving like-to-like comparison of monitoring results with available pre-construction data	OEMP
E12	Monitoring results must be made publicly available and must be subject to an independent audit at six-monthly intervals	OEMP
E13	Monitoring for at least twelve continuous months prior to operation and continue monitoring for at least two years following the commencement of operation.	OEMP
E18	Monitor pollutants from the ventilation outlets.	OEMP
E24	Results of hourly updated real-time ambient monitoring must be provided on a website and made publicly available each month	OEMP
E31(h)	Monitor and manage environmental performance across the project during the operational phase.	OEMP

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CoA ref	Required monitoring	Where addressed
E31(h)	Operation Environmental Management Plan (OEMP) must contain how environmental performance would be managed and monitored to meet acceptable outcomes	OEMP
E34(f)(g)	Monitor operational noise, including on surrounding roads which experience significantly increased traffic volumes as a result of the project. Monitor noise in response to complaints. Monitor and review the Operational Noise Management Plan.	Operational Noise Management Plan (ONMP)
E34(i)	Monitoring and review of the Operational Noise Management Plan.	ONMP
E38	Monitor operational noise and vibration to compare actual noise and vibration performance of the project against the noise performance predicted in the Operational Noise and Vibration Review.	Operational Noise and Vibration Compliance Report
E38(a)	Details of the noise and vibration monitoring program including methodology, location and frequency of noise monitoring.	Operational Noise and Vibration Compliance Report
E42(f)	Mechanisms for monitoring of on- and off-street parking impacts and mitigation measures at 12 month intervals to determine the effectiveness of implemented mitigation measures and any supply and demand induced parking issues that are attributable to the SSI.	Operational Parking and Access Strategy (OPAS)
E42(g)	Provision of contingency measures should the results of mitigation monitoring indicate implemented measures are ineffective.	OPAS
E42(h)	Provision of reporting of monitoring results to the Secretary and relevant councils at 12 month intervals for the first five years of operation.	OPAS

2.4 Reporting

2.4.1 Compliance Reporting

The Pre-Construction Compliance Report (PCCR) will provide the first compliance review for the project against the CoA and REMMs. The second review will be undertaken within the first three months of construction and then every three months after. A final review of construction-related compliance will also be undertaken prior to the commencement of operation.

Input and review from the Environmental Representative and WCX M5 AT will be required prior to submission to the Secretary for all construction compliance reporting.

Operational compliance will be reported on every six-months following the commencement of operation.

The indicative timeframe for construction compliance reports is identified in Table 6.

Table 6: Indicative timeframe for construction compliance reporting

Item	Details	Timing / indicative timeframe	Responsibility	Recipient of report
Pre-construction compliance report	Status against CoA and REMM before construction starts	Prior to the commencement of construction - July 2016	Environment and Sustainability Manager	DP&E; WCX M5 AT; Environmental Representative
Construction compliance report	Status against CoA and REMM during construction phase	Quarterly throughout construction / October 2016	Environment and	DP&E; WCX M5 AT;

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Item	Details	Timing / indicative timeframe	Responsibility	Recipient of report
		January 2017 April 2017 July 2017 October 2017 January 2018 April 2018 July 2018 October 2018 January 2019 April 2019	Sustainability Manager	Environmental Representative
Pre-Operation Compliance Report	Status against CoA and REMM before operation starts	Prior to the commencement of operation - mid 2019	Environment and Sustainability Manager	DP&E; WCX M5 AT; Environmental Representative

The compliance reports will include a summary of the activities undertaken during the reporting period. Compliance tracking tables will form an integral part of the compliance reports. The tables will provide a format for recording compliance and will include:

- Condition / environmental requirement;
- Project phase to which the condition or requirement is applicable;
- Compliance status;
- Person / team responsible for the condition / requirement; and
- Comment or evidence of compliance.

Appendix A contains the details of each CoA. Details regarding the relevant project stage as summarised in Section 1.2, timing and approval details will be included as relevant to each compliance report.

2.4.2 Other Reporting

Additional reporting requirements identified in the project documents are included in Table 7.

Table 7: Additional reporting requirements

Report	Details	Frequency	Standard	Responsibility	Recipient of report
Monthly environmental report	To be incorporated into the project monthly report - to address environmental statistics (e.g. incidents, regulatory action, complaints on environmental issues), monitoring program performance, key environmental issues.	Monthly, by the 5 th Business Day of each month	D&C Deed	Environment and Sustainability Manager	WCX M5 AT; Roads and Maritime; Independent Certifier; parent companies
Environmental Representative monthly report	Report on <ul style="list-style-type: none"> • the Environmental Representative's actions and decision on matters specified in CoA D1 for the preceding month 	Monthly within seven days for the end of each month for the duration of construction	CoA D2	Environmental Representative	DP&E WCX M5 AT CDS-JV

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Report	Details	Frequency	Standard	Responsibility	Recipient of report
	<ul style="list-style-type: none"> of site environmental performance following routine inspections any non-conformances with the CEMP and corrective/management actions required. 	of the Project, or as otherwise agreed by the Secretary			
EPL annual returns	Report on compliance with EPL #20772 and EPL #4627	Annually	EPA annual return pro forma EPL #20772 & #4627 Condition R1	Environment and Sustainability Manager	EPA
Material harm report	Written details of notification of incidents causing or threatening material harm to the environment	Within 7 days of incident causing or threatening material harm	EPL #20772 & #4627 Condition R2	Environment and Sustainability Manager	EPA, DP&E
EPA requested report	As requested by the EPA	As required by EPA	EPL #20772 & #4627 Condition R3	Environment and Sustainability Manager	EPA
Noise and vibration reports	Submit a Preliminary Investigation Report and subsequent Follow-Up Investigation Report in respect of any noise or vibration monitoring undertaken in accordance with the EPL.	As requested by EPA	EPL #20772 & #4627 Condition R4	Environment and Sustainability Manager	EPA

2.5 Environmental auditing

Environmental audits will be conducted at regular intervals during construction of the project to ensure compliance. Internal and external environmental audits will be undertaken in accordance with AS/NZS ISO 19011.

An indicative audit schedule is included in Table 8.

Table 8: Indicative audit schedule

Audit	Details	Timing	Responsibility	Recipient of audit report
Internal audit	Compliance with approval and legal requirements, Roads and Maritime specifications, CEMP	Annually (alternate 6 monthly to the audit below)	Environment and Sustainability Manager	CDS-JV WCX M5 AT

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Audit	Details	Timing	Responsibility	Recipient of audit report
External audit	Compliance with EMS (ISO 14001) in accordance with CPB Contractors requirements	Annually (alternate 6 monthly to the audit above)	External independent auditor	CDS-JV WXC M5 AT
External audit	Compliance with the CEMP in accordance with D&C Deed	Not exceeding every 5 months and 15 business days	WCX M5 AT External independent auditor	CDS-JV WCX M5 AT Independent Certifier

The Proponent will undertake an independent environmental audit as required for the operational phase of the project. The details of the operational audit program would be provided to the Secretary prior to the commencement of operation.

Additional audit requirements identified in the CoA are summarised in Table 9. The document in which the operational audit requirements are addressed may be refined prior to the commencement of operation.

Table 9: Additional audit requirements identified in the CoA

CoA ref	Audit details	Recipient of the audit report	Where addressed
Construction phase			
B31	Site Audit Statement prepared by an accredited Site Auditor if remediation is required, verifying that the disturbed area has been or can be remediated to a standard consistent with the intended land use. Where land is remediated, a final Site Audit Statement will be prepared by an accredited Site Auditor, certifying that the contaminated disturbed areas have been remediated to a standard consistent with the intended land use.	Final Site Audit Statement to be submitted to Secretary and relevant councils prior to operation of the project.	Construction Contamination Management Plan
B49	An independent Road Safety Audit(s) is to be undertaken by an appropriately qualified and experienced person during detailed design to assess the safety performance of any new or modified local road, parking, pedestrian and cycle infrastructure provided as part of the SSI	Audit findings and recommendations will be made available to the Secretary on request.	Construction Traffic Access and Management Plan
Operational phase			
E3	In tunnel air quality sampling points and visibility monitoring points established under this condition must be audited at least two months prior commencing monitoring, for compliance with the requirements set out in Table 4. Verification and compliance auditing is to be undertaken by an independent person(s) or organisation(s) whose appointment has been approved by the Secretary.	N/A	OEMP
E12	Ambient air quality monitoring results must be subject to an independent audit at six-monthly intervals (or at a longer interval, if approved by the Secretary). The auditor must be approved by the Secretary in consultation with the NSW Environment Protection Authority and the	The auditor's report must be directly provided to the Proponent and the AQCCC.	OEMP

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CoA ref	Audit details	Recipient of the audit report	Where addressed
	project's Air Quality Community Consultative Committee (AQCCC),		
E18	Ventilation outlet monitoring equipment must be independently audited prior to its commencement of monitoring. Auditing is to be undertaken by an independent person(s) or organisation(s) approved by the Secretary	N/A	OEMP
E26	Continuous emissions monitoring systems installed and operated as required by CoA E18 must undergo relative accuracy test audits at an interval not exceeding 12 months, or as otherwise agreed to by the Secretary in consultation with the EPA.	N/A	OEMP
E27	Conduct an audit of the air quality monitoring (in tunnel and external) at six-monthly intervals.	All audit data will be available for inspection by the Secretary, upon request. A copy of the audit report must be issued to the Proponent and AQCCC.	OEMP
E40	Traffic mitigation measures recommended as part of the Road Network Performance Review Plan would be subject to independent road safety audits.	N/A	OEMP
E48	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 developed in condition E42 must be undertaken by an Accredited Fire Engineer.	The results of the audit must be submitted to FRNSW prior to opening of the project to traffic.	OEMP
E51	Within 12 months of the commencement of operation, and at any other stage required by the Secretary, the Proponent must commission an Independent Environmental Audit of the SSI.	The Proponent must submit a copy of the audit report to the Secretary and relevant public authorities, together with its response to any recommendations contained in the audit report.	OEMP

2.6 Incident management

The immediate response to all incidents is to make the area safe and undertake measures to prevent further environmental harm. The Environment and Sustainability Manager and Project Director should be notified immediately in the event of an environmental incident.

The Roads and Maritime's Environmental Incident and Classification and Reporting Procedure (refer to Appendix F of the CEMP) and the Incident Response Plan (M5N-HS-PLN-PWD-0003) shall all be implemented. The CDS-JV procedure Manage and Report Safety, Health & Environment (SH&E) Incidents (M5N-HS-PRC-PWD-0003) shall also be implemented for internal notification and reporting requirements

Environmental incidents shall be notified verbally immediately and in writing within 24 hours of an incident occurring to the WCX M5 AT Representative. Notification will generally be undertaken by the Environment and Sustainability Manager or a member of the CDS-JV environment team. Additional notification of the incident to the relevant authorities in accordance with the Roads and Maritime's Environmental Incident and Classification Reporting Procedure (Appendix F of the CEMP), Environmental Representative and parent companies will also be undertaken as required.

Where required, in accordance with the project environment protection licence (EPL) and the *Protection of the Environment Operations Act 1997* (POEO Act), notification to the Environment Protection Authority

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(EPA) will be undertaken for any non-conformances with the conditions of the EPL and pollution incidents.

Notification to the Secretary of DP&E

In accordance with CoA A16, CDS-JV will notify and provide a record of any environmental incident to the Secretary with actual or potential significant off-site impacts on people or the biophysical environment immediately (on weekdays, or by the following business day for weekends, public holidays and site shutdown periods) of becoming aware of the incident. CDS-JV will provide full written details of the incident to the Secretary within seven days of the date on which the incident occurred. In accordance with CoA A15, CDS-JV will provide the Secretary with records of any notification of incidents to the EPA as required by the *Protection of the Environment Operations Act 1997*.

Incident reporting

For incidents classified as Category 1 or 2 incidents (in accordance with Roads and Maritime – Environmental Incident and Classification Reporting Procedure (Appendix F of the CEMP)), a Roads and Maritime environmental incident form 624 will be completed and submitted to WCX M5 AT by email within three days of the date of the incident.

All incidents will be recorded in Synergy. Details of environmental incidents and resulting corrective or preventative actions will be included in monthly environmental reports as well the quarterly construction compliance reports. The Environment and Sustainability Manager will identify trends in incidents and trends in root causes to suggest the nature of preventative actions which are warranted.

Incident investigation

Incident investigations will be undertaken for all incidents. The level of investigation will be dependent on the classification of the incident. The incident investigation team will be a mix of both operational and SH&E staff selected by the Project Director based on the severity of the incident and the availability of experienced personnel.

Depending on the severity of the event, the scene of the incident, including any associated plant and equipment, is to be preserved until relevant data and evidence is collected. Environmental incidents, including community complaints, will be entered into and closed out in Synergy.

As part of the incident investigation, corrective and preventative actions will be identified, assigned to the appropriate person and closed out according to set timeframes. Corrective actions will be assigned, tracked and closed out in Synergy. All corrective actions will include reference to the relevant incident record for ease of tracking.

Safety Health & Environment (SH&E) Alerts will be prepared as required for distribution within the project or outside of the project, where appropriate. SH&E Alerts may also be raised at the discretion of the Environment and Sustainability Manager.

Any requirements of the Secretary or relevant public authorities to address the cause or impact of any incident will be undertaken in accordance with CoA A17.

All efforts will be undertaken immediately to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

Recording Environmental Incidents

All incidents will be documented, and where required, due to the severity or ongoing nature of the incident, investigations conducted and action plans established in order that the event does not occur again. Where lessons are learnt from the investigation or current procedures are identified as being ineffective, the CEMP will be revised by the Environment and Sustainability Manager to include the improved procedures or requirement.

An environmental investigation includes the following basic elements:

- Identifying the cause, extent and responsibility of the incident.
- Identifying and implementing the necessary corrective action. Implementing or modifying controls necessary to avoid a repeat occurrence of the incident.
- Identifying the personnel responsible for carrying out the above actions.

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- Recording any changes in written procedures required.
- Verification of actions complete and incident close out.

2.7 Addressing non-compliance

Environmental Auditing

The Environment and Sustainability Manager (EM) will be responsible for the close out of non-compliances raised during an environmental audit and their close out will be managed via the audit close out process. When a non-compliance is raised by the auditor, the EM will determine appropriate actions and delegate to the appropriate person for implementation of the corrective / preventative action. The action will then be closed out within the allocated time as set by the EM.

On completion of the agreed actions, the EM will submit evidence (e.g photographs, a revised process or plan etc) of the close out to the auditor. The auditor will then review the evidence supplied and determine if the non compliance has been adequately responded to. If agreed, the audit close out report will be issued by the auditor indicating the non compliance has been dealt with and the audit has been closed.

Review of Compliance

If a non compliance is identified during a review of compliance, the EM will issue an Environmental Actions List or an Environmental Improvement Notice in response to the identified compliance issue. The list or notice will be issued to the appropriate person for implementation of the corrective / preventative action. The action will then be closed out within the allocated time as set by the EM.

On completion of the agreed actions, the appropriate person will submit evidence (e.g photographs, a revised process or plan etc) of the close out to the EM. The EM will then review the evidence supplied and determine if the non compliance has been adequately responded to. If agreed, the list or notice issued by the EM will be closed out.

Incident Management

Following an incident, the EM will initiate an investigation to identify the root causes and contributing factors. Once the roots cause and contributing factors have been identified, the EM will identify corrective and preventative actions to respond to these findings. The EM will then allocate appropriate resources and identify an appropriate person to implement those actions. In addition, CDS-JV will meet the requirements of the Secretary (or relevant public authority, as determined by the Secretary) to address the cause or impact of the incident, in accordance with CoA A17.

On completion of the agreed actions, the appropriate person will submit evidence (e.g photographs, a revised process or plan etc) of the close out to the EM. The EM will then review the evidence supplied and determine if the non compliance has been adequately responded to. If agreed, the incident will be closed out by the EM. Lessons learnt from the investigation will be shared within the project team.

Non-Conformance

A non-conformance is a failure to comply with a requirement, standard or procedure relevant to the project, such as the CoA, CEMP or associated documents. A non-conformance may be raised by the Project team, the ER, Roads and Maritime, the WCX M5 AT Representative or public authority.

Where non-conformances are identified, they will be recorded on an environmental action list. The environmental action list will be issued to the relevant Foreman for action. Actions will be assigned an implementation priority in a collaborative way by the inspection team based on environmental risk. Where more significant deficiencies in environmental controls or in the standard of environmental performance are observed, the EM will issue an Environmental Improvement Notice (EIN) in response to poor or inappropriate work methods or environmental controls, equipment selection, maintenance of controls, or other identified concerns.

Non-conforming activities may be stopped, if necessary, by the EM, Environmental Officers or Project / Site Engineer following consultation with the Area Manager or delegate. The works will not re-commence until a corrective / preventative action has been closed out. The ER may also stop works in these circumstances. In such circumstances a non-conformance report must be prepared in accordance with the Quality Plan.

2.8 Training and awareness

To ensure that environmental management is effectively implemented across the project, each level of management is responsible for ensuring that all personnel reporting to them are aware of their responsibilities under the CEMP. The Environment and Sustainability Manager will coordinate the environmental training in conjunction with other training and development activities (e.g. safety).

All personnel, subcontractors and visitors will undergo a project induction before commencing work on-site. Site-specific inductions will also be provided as necessary. Inductions will address general and site-specific environmental issues, including:

- CDS-JV 's environmental policy;
- Purpose and objectives of the CEMP;
- How the CEMP will be implemented on-site;
- Requirements of due diligence and duty of care;
- Conditions of environmental licences, permits and approvals;
- High-risk environmental activities on the Project and their controls;
- What to do when working in or near environmentally sensitive areas;
- Potential environmental emergencies on Site;
- What to do in the event of an environmental incident or emergency; and
- Reporting and notification requirements for pollution and other environmental incidents, including the existence of the Pollution Incident Response Management Plan (PIRMP) and staff responsibilities with regard to the PIRMP.

An assessment will be conducted upon completion of the project induction.

A record of all environmental inductions will be maintained on the project training database. The Environment and Sustainability Manager may authorise amendments to the induction at any time. Possible reasons for changes to the induction may be project modifications, legislative changes, and changes in environmental risks, the occurrence of incidents or amendments to the CEMP or related documentation.

Environmental training needs for the project are identified and documented within the Project's training matrix. In populating the training matrix, the environmental training requirements for each role are addressed, including competency, needs and capability. The Environment and Sustainability Manager will be consulted in developing the training matrix. A Project training schedule will be developed to plan the delivery of training needs identified in the training matrix. Refresher training intervals will also be stated where applicable. Subcontractor training and competency responsibilities will be included in subcontractor agreements. An indicative training schedule for environmental and sustainability aspects of the project is provided in [Table 10](#). These requirements will be developed further in the project training matrix.

Qualifications and experience relevant to project roles shall be incorporated into position descriptions and the professional development review process shall identify and appoint suitable training requirements.

The Environmental Representative will monitor the implementation of induction and training programs for the project and will advise CDS-JV in regards to the achievement of the program.

Ongoing training and awareness will enable project personnel to competently perform their duties and meet environmental obligations. Training and awareness activities may include:

- Project inductions;
- Daily pre-start or activity specific pre-start briefings;
- Toolbox talks;
- Targeted environmental training, appropriate to personnel role and/or responsibility;
- Meetings or forums either dedicated to training and awareness activities or included as an agenda item; and
- Emergency drills.

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Table 10: Environmental training requirements

Role	Induction		Specific environmental training and awareness									
	Project Induction (incl. environmental & sustainability awareness)	Site Induction*	Sustainability (ISCA) Training	Erosion & Sediment Control (incl. dust control)	Hazardous Substances & dangerous goods	Emergency / Spill Response	Flora & Fauna**	Noise & Vibration Management***	Heritage (Aboriginal & Non-Aboriginal)**	Acid Sulfate Soils**	Waste Management**	Environmental/Regulatory Due Diligence
Project Director	Rq		Rm									
Construction												
Construction Director	Rq	Rq	Rm	Rm						Rm		
Construction / Project Manager	Rq	Rq	Rm	Rm			Rm		Rm	Rm		Rq
Supervisor / Foreman	Rq	Rq	Rm	Rq	Rm	Rm	Rm	Rm	Rm	Rm	Rm	Rq
Project / Site Engineer	Rq	Rq	Rm	Rq			Rm			Rm		Rq
Graduate Engineer	Rq	Rq	Rm	Rm			Rm			Rm		
Environment & Sustainability												
Support Services Director	Rq	Rq	Rq									
Environment & Sustainability Manager	Rq	Rq	Rq	Rm	Rm	Rm						Rq
Environmental Area Manager	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq
Environmental Advisor	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq	Rq
Sustainability Coordinator	Rq	Rq	Rq		Rm						Rm	
Workforce & Subcontractors												
Plant Operator	Rq	Rq			Rm	Rm	Rm	Rm	Rm	Rm	Rm	
Tradesperson	Rq	Rq			Rm	Rm	Rm	Rm	Rm	Rm	Rm	
Labourer	Rq	Rq			Rm	Rm	Rm	Rm	Rm	Rm	Rm	

Rq – Required; Rm – Recommended

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* Site Induction to include parking and access awareness as well as basic awareness of erosion and sediment control, hazardous substances and spills, flora and fauna, noise, heritage, acid sulfate soils and waste.

** Site Induction to include specific awareness/training for these issues where required.

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Glossary of Terms

Term / acronym	Definition
BMS	Blast Management Strategy
CEMP	Construction Environmental Management Plan
CoA	Minister's Conditions of Approval
CDS-JV	CPB Contractors, Dragados, and Samsung joint venture
CTP	Compliance Tracking Program
D&C	Design and construct
DP&E	NSW Department of Planning and Environment
EIS	Environmental impact statement
EMS	Environmental management system
ER	Environmental Representative
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	NSW Environment Protection Authority
EPL	Environment protection licence
HARD	Historical Archaeological Research Design
Keystone	A web-based document management system that provides the primary document management application for CDS-JV on the project and will be used to manage correspondence, design documentation, electronic distribution and approval processes, records and identified records and quality documentation.
PCCR	Pre-Construction Compliance Report
PIRMP	Pollution Incident Response Management Plan
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Project	WestConnex New M5 project
Project Company	WCX M5 AT
REMM	Revised environmental management measures, included in the Submissions and Preferred Infrastructure Report
Roads and Maritime, RMS	Roads and Maritime Services
SMC	Sydney Motorway Corporation, formerly WestConnex Delivery Authority
SH&E	Safety, Health & Environment
SPIR	Submissions [and Preferred Infrastructure] Report
SSI	State significant infrastructure
Synergy	<p>Synergy is a safety and environmental reporting application and consists of the following modules:</p> <ul style="list-style-type: none"> • SHE Management – events including: incidents, near hits, report only, hazards, stakeholder contacts, regulatory visits, drug and alcohol positive tests

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Term / acronym	Definition
	<ul style="list-style-type: none"> • Metrics – work hours, number of people, environmental data such as materials, water, energy and wastes, etc. Campaigns can be tailored to drive specific lead indicators. • Compliance – general applicability, typically used to track conditions and aid in reporting <p>Actions – Assign and track actions.</p>
WCX	WestConnex
WCX M5 AT	Project company

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Appendix A: Minister's Conditions of Approval

Ref	Sub Ref	Condition of Approval	Timing	Date Completed	Secretary's Approval required?	Secretary's Approval Lodged	Date Final Document Lodged	Date Amended Document Lodged	Date of Secretary Approval	Responsibility	Compliance Status	Comment / evidence
B31		<p>Prior to the commencement of any activities that would result in the disturbance of land and/or soil, or as otherwise agreed by the Secretary, in areas identified as having a moderate to high risk of contamination, a Soil Contamination Report must be prepared by a suitably qualified person(s) in accordance with the requirements of the <i>Contaminated Land Management Act 1997</i> and associated guidelines, detailing the outcomes of Phase 2 contamination investigations within these areas. The Soil Contamination Report must detail, where relevant, whether the land is suitable (for the intended land use) or can be made suitable through remediation and/or outline the potential contamination risks from the SSI to human health and receiving waterways.</p> <p>For land to be disturbed by the SSI, where the investigations identify that the site is suitable for the intended operations and that there is no need for a specific remediation strategy, measures to identify, handle and manage potential contaminated soils, materials and groundwater must be identified in the Soil Contamination Report and incorporated into the Construction Environmental Management Plan, unless otherwise agreed by the Secretary. Should a remediation strategy be required, the Soil Contamination Report must include a Remediation Action Plan for addressing the disturbed area, and 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, the Soil Contamination Report must be accompanied by a Site Audit Statement(s), prepared by an accredited Site Auditor under the Contaminated Land Management Act 1997, verifying that the disturbed area has been or can be remediated to a standard consistent with the intended land use. Where land is remediated, a final Site Audit Statement(s) must be prepared by an accredited Site Auditor, certifying that the contaminated disturbed areas have been remediated to a standard consistent with the intended land use. The final Site Audit Statement must be submitted to the Secretary and relevant councils prior to operation of the SSI, unless otherwise agreed to by the Secretary.</p>										

Ref	Sub Ref	Condition of Approval	Timing	Date Completed	Secretary's Approval required?	Secretary's Approval	Date Final Document Lodged	Date Amended Document Lodged	Date of Secretary Approval	Responsibility	Compliance Status	Comment / evidence
		Sensitive site*	xiii	xiv 10								

mm/s maximum unless agreement is reached with occupier that a higher limit may apply

Ref	Sub Ref	Condition of Approval	Timing	Date Completed	Secretary's Approval required?	Date Final Document Lodged	Date Amended Document Lodged	Date of Secretary Approval	Responsibility	Compliance Status	Comment / evidence						
		<p>monitoring of water quality at acid sulfate soils treatment areas, should the project impact on acid sulfate soils;</p> <p>vi. a description of how the effectiveness of the actions and measures for managing soil and water impacts would be monitored during the proposed works, clearly indicating how often this monitoring would be undertaken, the locations where monitoring would take place, how the results of the monitoring would be recorded and reported, and, if any exceedance of the criteria is detected how any non-compliance can be rectified; and</p> <p>mechanisms for the monitoring, review and amendment of this Construction Soil and Water Management Plan.</p>															
E1		The provision, operation and maintenance (including all auditing and validation of data) of all air quality monitoring and reporting must be funded by the Proponent.															
E2		<p>The Proponent must monitor (by sampling and obtaining results by analysis) the pollutants, within the tunnel using the methodologies and frequency specified in Table 4 throughout the operation of the SSI. Monitoring must commence on the first day of operation of the SSI.</p> <p>Table 4 - In Tunnel monitoring methodology</p> <table border="1"> <thead> <tr> <th>xv</th> <th>Units of measure</th> <th>Frequency</th> <th>Method¹</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	xv	Units of measure	Frequency	Method ¹											
xv	Units of measure	Frequency	Method ¹														

Ref	Sub Ref	Condition of Approval	Timing	Date Completed	Secretary's Approval required?	Secretary's Approval required?	Date Final Document Lodged	Date Amended Document Lodged	Date of Secretary Approval	Responsibility	Compliance Status	Comment / evidence
		CO			XIX	X						
		NO ₂			XXII	X						
		Visibility			XXVI	X						

Ref	Sub Ref	Condition of Approval	Timing	Date Completed	Secretary's Approval required?	Date Final Document Lodged	Date Amended Document Lodged	Date of Secretary Approval	Responsibility	Compliance Status	Comment / evidence						
		<p><i>Note:</i></p> <p>1. <i>Special Method 1 means a method approved by the Secretary in consultation with the EPA.</i></p>															
E3		<p>The number and location of the monitoring stations inside the tunnel must be determined to permit an accurate calculation, per the requirements of conditions E4, E5 and E6, and be independently verified in accordance with a methodology approved by the Secretary in consultation with the EPA, at least six months prior to the operation of the SSI. As a minimum, monitoring stations must be installed at the entry portals, the base of the ventilation outlets, tunnel and ramp junctions and at the emergency smoke extraction facility.</p> <p>All sampling points and visibility monitoring points established under this condition must be audited at least two months prior commencing monitoring, for compliance with the requirements set out in Table 4. Verification and compliance auditing is to be undertaken by an independent person(s) or organisation(s) whose appointment has been approved by the Secretary.</p> <p>Air quality data is to be made available in as close to real time as possible, under the website reporting requirements of condition E24.</p>															
E4		<p>The Proponent must ensure that the average concentrations of CO and N02, calculated along the length of the tunnel, do not exceed the concentration limit specified for that pollutant in Table 5.</p> <p>Table 5 - In-tunnel average limits along length of tunnel</p> <table border="1"> <thead> <tr> <th></th> <th>Concentration Limit</th> <th>Units of measurement</th> <th>Averaging period</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Concentration Limit	Units of measurement	Averaging period											
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		CO				xxx						
		CO				xxxiii						
		NO ₂				xxxvi						

Ref	Sub Ref	Condition of Approval	Timing	Date Completed	Secretary's Approval required?	Secretary's Approval Lodged	Date Final Document Lodged	Date Amended Document Lodged	Date of Secretary Approval	Responsibility	Compliance Status	Comment / evidence													
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Other	measurment	Period																							
Siting																									
<p>Notes:</p> <ol style="list-style-type: none"> 1. Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (EPA, 2007) or as otherwise agreed to in writing by the Secretary in consultation with the EPA. 2. AS3580.9.8-2008, Methods for the Sampling and Analysis of Ambient Air – Determination of Suspended Particulate Matter – PM10 Continuous Direct Mass Method using Tapered Element Oscillating Microbalance Analyser (Standards Australia, 2008). 3. AS 3580.9.13-2013, Methods for the Sampling and Analysis of Ambient Air – Determination of Suspended Particulate Matter – PM2.5 Continuous Direct Mass Method using a Tapered Element Oscillating Microbalance Analyser (Standards Australia, 2013). 4. TBD - location for meteorological monitoring station(s) to be representative of weather conditions likely to occur in the vicinity of the 																									

Ref	Sub Ref	Condition of Approval	Timing	Date Completed	Secretary's Approval required?	Secretary's Approval Lodged	Date Final Document Lodged	Date Amended Document Lodged	Date of Secretary Approval	Responsibility	Compliance Status	Comment / evidence																
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<p>Notes:</p> <p>1. <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (EPA 2007) or an alternative method approved by the Secretary in consultation with the EPA.</i></p> <p>2. <i>Must include, but not be limited to: Benzene, Toluene, Xylenes, 1,3-Butadiene, Formaldehyde and Acetaldehyde.</i></p> <p>3. <i>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,</i></p>																												

Ref	Sub Ref	Condition of Approval	Timing	Date Completed	Secretary's Approval required?	Secretary's Approval Lodged	Date Final Document Lodged	Date Amended Document Lodged	Date of Secretary Approval	Responsibility	Compliance Status	Comment / evidence
		urban design, open space, landscaping and recreational items and works implemented as part of this approval will remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Prior to the transfer of assets, the Proponent will maintain items and works to at least the design standards established in the Urban Design and Landscape Plan required by condition B61.										
E44		Six months prior to operation, the Proponent must prepare an Emergency Response Plan , 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 to address the potential environmental impacts of an emergency situation, including 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- <ul style="list-style-type: none"> (i) all operational staff are 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										

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Appendix B: Revised Environmental Management Measures

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
Traffic and transport					
TT01	<p>A <u>Construction Traffic Management and Safety Plan (CTMSP)</u> would be prepared as part of the CEMP. The CTMSP would include the guidelines, general requirements and principles of traffic management to be implemented during construction, including:</p> <ul style="list-style-type: none"> • Signage requirements (eg temporary speed restrictions, changes to the road environment, traffic management controls) • Lane possession and approval process during periods of online construction (eg line marking and temporary barriers) • Traffic control devices such as traffic signals • A local and regional communications strategy, including methods to provide advanced notice of any major or prolonged impacts (eg leaflets and local media), and real-time information regarding current impacts (eg variable message signs, radio traffic news) • Details of both the general approach to be used for access and egress to construction compounds and the specific controls required at specific locations • Any specific provisions required to manage potential impacts to sensitive users, such as schools, child care centres and health facilities. • Strategies to minimise impacts on on-street car parking due to construction workers. <p>The CTMSP would be prepared in accordance with Austroads <i>Guide to Road Design</i> (with appropriate Roads and Maritime supplements), the RTA <i>Traffic Control at Work Sites</i> manual and AS1742.3: <i>Manual of uniform traffic control devices – Part 3: Traffic control for works on roads</i>, and any other relevant standard, guide or manual.</p>				
TT02	<p>Construction methods and staging would be designed to minimise road closures, subject to other project constraints, and ensure that disruptions to existing traffic are minimised as much as feasible and reasonable.</p>				
TT03	<p>Construction works would be carried out offline, where possible. Where offline construction is not practical, and for tie-ins between online and offline sections of the project, construction sequencing and any temporary works identified would aim to minimise user delay while providing sufficient flexibility for the selected contractor to safely and efficiently construct the project</p>				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
TT04	Works that would significantly reduce the performance of the road network would be scheduled for periods of typically lower traffic volumes where feasible and reasonable.				
TT05	Work areas would be isolated from general traffic using temporary safety barriers where possible.				
TT06	Temporary closed-circuit television (CCTV) and Variable Message Signs (VMS) would be provided at the outset of construction to link with the existing Transport Management Centre (TMC) network to facilitate monitoring and management of traffic impacts				
TT07	Traffic volume data would be analysed to identify capacity requirements, assess the potential impact of lane occupancies on traffic flows, plan lane occupancies to minimise the work area, and identify the best time to minimise inconvenience to road users. Restrictions and obstructions would be limited, road capacities maximised and peak traffic periods avoided where possible				
TT08	Impacts on pedestrian paths and cycle lanes would be minimised, and alternatives provided during construction where practical and safe to do so				
TT09	Impacts to bus stops would be identified and alternative locations and access would be provided. This would be undertaken in consultation with Transport for NSW and the relevant bus service provider				
TT10	Local road closures would be managed and adequate property access maintained. This would be undertaken in consultation with Roads and Maritime, local councils and property owners likely to be impacted				
TT11	A <u>spoil management plan</u> would be prepared with subsequent monitoring of heavy vehicle and haulage routes to ensure compliance and minimise impact on local roads off the arterial road network				
TT12	A <u>road dilapidation report(s)</u> would be prepared identifying existing conditions of local roads and mechanisms to repair damage to the road network caused by heavy vehicle movements associated with the project.				
TT13	Road occupancy licences would be obtained where required.				
TT14	The CTSMP would be developed in consultation with local emergency services and procedures would be implemented to maintain priority access and a safe environment for emergency vehicles to travel through construction areas. The CTSMP would include measures to keep emergency services informed of the staging and progress of construction works.				•

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
TT15	The location of the car park and site office associated with the Kingsgrove North construction compound (C1) would be further refined with alternatives considered during construction planning, including the opportunity for the use of the existing Garema Circuit carpark				
OpTT01	A road safety audit would be undertaken by a qualified auditor(s) as part of the detailed design, and again immediately prior to project opening, to examine the design from a road safety perspective and identify potential safety issues. This process would be undertaken in accordance with the Roads and Maritime Accident Reduction Guide Part 2: Road Safety Audits (RTA, 2005a).				
OpTT02	An operational traffic review would be conducted 12 months following the commencement of operation to confirm the operational traffic impacts of the project on surrounding arterial roads and major intersections. The operational traffic review would be undertaken by a suitably qualified traffic specialist that is independent of the design and traffic studies undertaken as part of the environmental impact statement. The operational traffic review would include (but is not limited to) an assessment of the level of service at major intersections on local roads around the St Peters interchange, the King Georges Road interchange and changes in traffic levels on parallel arterial roads, such as Stoney Creek Road.				
OpTT03	<p>During detailed design, the ability to further reduce the width of Euston Road would be investigated through:</p> <ul style="list-style-type: none"> • Further reductions in the lane widths and/or • Minimising the extent of, or need for, the central turning lane along Euston Road. <p>This investigation would consider the changes to network performance, road safety for all users (including pedestrians), implications for access to properties along Euston Road, amenity improvements for pedestrians / cyclists, benefits to reduced impacts on Sydney Park and vegetation, and opportunities for additional landscaping.</p>				
Air quality					
AQ01	Develop and implement a <u>Construction Air Quality Management Plan</u> in consultation with the NSW EPA. Any measures that are required will differ depending on the activities occurring, and so will need to be tailored for each individual site.				
AQ02	Carry out regular site inspections to monitor compliance with the Construction Air Quality Management Plan, record inspection results.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
AQ03	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.				
AQ04	Display the name and contact details of person(s) accountable for air quality and dust issues at the boundaries of each construction area. This may be the environment manager/engineer or the site manager. Display the head or regional office contact information.				
AQ05	Plan site layout so that machinery and dust causing activities are located away from receivers, as far as is possible.				
AQ06	Erect solid screens or barriers around dusty activities or the site boundary.				
AQ07	Ensure, where reasonable and feasible, that appropriate control methods are implemented to minimise dust emissions from the project site.				
AQ08	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site, cover as soon as practicable.				
AQ09	Impose and signpost a maximum-speed-limit of 20 km/h on surfaced and unsurfaced haul roads and in work areas.				
AQ11	Where practicable, only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, (e.g. suitable local exhaust ventilation systems).				
AQ12	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.				
AQ13	Where possible, use enclosed chutes and conveyors and covered skips.				
AQ14	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.				
AQ15	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using appropriate cleaning methods.				
AQ16	Avoid scabbling (roughening of concrete surfaces) if possible.				
AQ17	Stockpiles would be located outside overland flowpaths, and where left exposed and undisturbed for longer than 28 days, would be finished and contoured to minimise loss of material in flood or rainfall events. Materials which require stockpiling for longer than 28 days would be stabilised by compaction, covering with anchored fabrics, or seeded with				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	sterile grass where appropriate.				
AQ18	Where a stockpile, eg sand or fine aggregate, has the potential to generate dust, control measures would be implemented. These would include wetting the stockpile, covering the stockpile or contouring the stockpile.				
AQ19	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.				
AQ20	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.				
AQ21	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site.				
AQ22	Avoid dry sweeping of large areas.				
AQ23	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.				
AQ24	Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.				
AQ25	Record all inspections of haul routes and any subsequent action in a site log book.				
AQ26	Where reasonable and feasible, haul roads will be maintained with water carts and graders, and the condition of the roads will be monitored.				
AQ27	Implement site exit controls (e.g. wheel washing system and rumble grids) to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable.				
AQ28	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.				
AQ29	Access gates to be located at least 10 metres from receivers where possible.				
AQ30	Ensure all construction vehicles comply with their relevant emission standards.				
AQ31	Ensure that, where practicable, engine idling is minimised when stationary.				
AQ32	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
AQ33	Promote and encourage sustainable travel (public transport, cycling, walking, and car-sharing).				
AQ34	No bonfires and burning of waste materials.				
AQ35	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).				
AQ36	Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground and may be more useful for covering larger areas.				
AQ37	Minimise explosive blasting where possible during demolition, using appropriate manual or mechanical alternatives.				
AQ38	Bag and remove any biological debris or other hazardous materials such as asbestos, damp down such material before demolition.				
AQ39	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.				
AQ40	Use hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.				
AQ41	Where possible, only remove any cover for exposed areas in small areas during work and not all at once.				
AQ42	Regular communication with other high risk construction ancillary facilities within 500 metres of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.				
AQ43	Undertake regular on-site and off-site inspection, where receivers are nearby, to monitor dust, record inspection results.				
AQ44	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.				
AQ45	Make complaints available to the Secretary upon request.				
AQ46	Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
N / A	<p>Environmental management measures that are available for improving tunnel-related air quality are categorised as follows:</p> <ul style="list-style-type: none"> • Tunnel design • Ventilation design and control • Air treatment systems • Emission controls and other measures • Monitoring. <p>Refer to Section 10.10.2 of the EIS for detailed discussion of these categories.</p>				
Human health					
HH1	<p>Affected households would be provided access to the following services to support them in the land acquisition process and relocation (including renters). These services include access to a free counselling service; WestConnex Assist and assistance from relocation support teams. Additional services which could include:</p> <ul style="list-style-type: none"> • Assistance in identifying alternative properties • Independent social support for households relocating within the area and to other areas, providing contacts and information in regard to social services, facilities and logistical matters (eg logistics of moving including required administrative tasks) • Access to financial advice for affected households • First language support for households within English as a second language. 				
Noise and vibration					

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
NV1	<p>A construction noise and vibration management plan(s) will be prepared and implemented consistent with the requirements of the <i>Interim Construction Noise Guideline</i> (DECC, 2009), and will include the following:</p> <ul style="list-style-type: none"> • Identification of nearby residences and other sensitive land uses • Description of approved hours of work • Description and identification of construction activities, including work areas, equipment and duration • Description of what work practices (generic and specific) will be applied to minimise noise and vibration • A complaints handling process • Noise and vibration monitoring procedures • Overview of community consultation required for identified high impact works. 				
NV2	Induction and training will be provided to relevant staff and subcontractors outlining their responsibilities with regard to noise.				
NV3	Noisy activities that cannot be undertaken during standard construction hours will be scheduled as early as possible during the evening and/or night time periods.				
NV4	Permanent noise barriers will be scheduled for completion as early as possible in order to minimise construction noise.				
NV5	Property treatments identified for the operational phase of the project will be considered for installation before or early in the construction period, where they would improve noise levels.				
NV6	Acoustic sheds will be erected at the Kingsgrove North (C1), Bexley Road North (C4) and Bexley Road South (C5) construction compounds, to mitigate noise generated by tunnelling support activities. The noise attenuation requirements for these acoustic sheds will be reviewed and confirmed during detailed design.				
NV7	Temporary acoustic hoardings will be installed at the Kingsgrove North (C1), Commercial Road (C3), Bexley Road North (C4), Bexley Road South (C5), Bexley Road East (C6), Arncliffe (C7), the Marsh Street ponds site, Canal Road (C8) and Campbell Road (C9) construction compounds. The design and location of acoustic hoardings will be confirmed during detailed design.				
NV8	When working adjacent to schools, particularly noisy activities will be scheduled outside normal school hours, where practicable.				
NV9	Where feasible and reasonable, equipment with directional noise emissions will be oriented away from sensitive receivers.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
NV10	Verification checks on the noise emissions of plant and machinery will be conducted.				
NV11	Ongoing noise monitoring will be undertaken during construction at sensitive receivers during critical periods to identify and assist in managing high risk noise events.				
NV12	Reversing of equipment will be minimised to prevent nuisance caused by reversing alarms. Use of non-tonal reversing alarms ('quackers') will be implemented to further reduce the nuisance caused by reversing alarms.				
NV13	Loading and unloading will be carried out away from sensitive receivers, where practicable.				
NV14	Deliveries will be carried out during standard construction hours where feasible and reasonable.				
NV15	Additional noise mitigation measures during out of hours works will be determined on a case-by-case basis using individual receiver predictions, and may consist of offers of alternative accommodation, monitoring, individual briefings, letter box drops, project specific respite offers, phone calls and specific notifications.				
NV16	Respite periods (eg one hour respite for every three hours of continuous construction activity) will be scheduled for high noise impact works where appropriate.				
NV17	Truck drivers will be advised of designated vehicle routes, parking and queuing locations, acceptable delivery hours and other relevant practices (ie minimising the use of engine brakes, and no extended periods of engine idling).				
NV18	Deliveries and spoil removal will be planned to avoid queuing of trucks around construction compounds.				
NV19	Before the start of tunnelling or other vibration intensive works at each site, condition surveys will be undertaken on properties and structures within the preferred project corridor (the zone on the surface equal to 50 metres from the outer edge of the tunnels) and within 50 metres of surface works.				
NV20	The safe working distances will be complied with where feasible and reasonable. This will include the consideration of smaller equipment when working close to existing structures.				
NV21	If vibration intensive works are required within the safe working distances, vibration monitoring or attended vibration trials will be undertaken at the outset of these works to ensure that levels are within relevant criteria.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
NV22	Building condition surveys of potentially affected structures will be completed both before and after the works to identify existing damage and any damage due to the works.				
NV23	Vibration intensive construction works will be confined to the less sensitive daytime period (9.00 am to 12.00 pm and 2.00 pm to 5.00 pm) as far as reasonably practicable.				
NV24	A detailed ground-borne noise assessment will be undertaken following further geotechnical investigations. This will include developing the vibration site law for the project.				
NV25	Noise and vibration mitigation methods specific to blasting will be incorporated into the construction noise and vibration management plans where required.				
NV26	Blasting with the potential to generate an impact at the surface will be restricted to standard daytime hours (except where approved by the relevant authority). Blasting would occur between 9:00am and 5:00pm, up to five days per week (Monday to Friday) and on Saturdays (9:00 am to 1:00pm). Blasts would be limited to one single detonation in any one day per receiver group, unless otherwise agreed by the NSW EPA through consultation on the Construction Noise and Vibration Management Plan.				
NV27	Site investigations will be conducted prior to production blasting to define suitable blast sizes to comply with project blasting noise and vibration criteria.				
NV28	Dilapidation studies of nearby receiver buildings will be undertaken where the potential for exceedances of the blasting criteria is identified.				
NV29	Where the predicted levels exceed the noise or vibration criteria for blasting, alternative construction methods, such as penetrating cone fracture, will be utilised.				
NV30	Community consultation protocols for sensitive receivers likely to be impacted by construction activities such as blasting, vibration and noise will be prepared and implemented.				
NV31	The implementation of a left in and right out arrangement for heavy vehicles at the Garema Circuit access point to Kingsgrove North construction compound (C1) would be considered during construction planning to restrict heavy vehicles to using only the eastern side of Garema Circuit.				
OpNV01	At locations where residual impacts remain after all feasible and reasonable approaches have been exhausted, noise mitigation in the form of acoustic treatment of existing individual dwellings will be				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	considered.				
OpNV02	Operational traffic noise will be monitored at sensitive receivers between six months and one year after opening. If the traffic noise levels are above the predicted levels, consideration of additional feasible and reasonable mitigation measures will be undertaken.				
OpNV03	Operational fixed facilities will be designed to meet project specific noise criteria derived in accordance with the <i>NSW Industrial Noise Policy</i> .				
Land use and property					
LP01	The relevant property owners would be consulted in relation to the acquisition of properties required to facilitate construction of the project. Acquisition would be undertaken consistently with the principles in the Land Acquisition Information Guide (Roads and Maritime, 2014b) and the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> (NSW).				
LP02	Prior to any impact to access, alternative arrangements would be negotiated with the affected parties in order to enable continued access and to minimise disruption as much as reasonably possible.				
LP03	Affected property owners and community facilities would be provided with advanced notification of relevant project schedules, construction works and changes to access arrangements.				
LP04	Community updates would be provided on changes to the local road network within the project area during construction.				
LP05	Appropriate signage would be provided advising of walking track closures and alternative walking routes.				
LP06	A <u>Settlement Monitoring Plan</u> would be prepared that would provide details on: <ul style="list-style-type: none"> • Location of monitoring points • Duration of monitoring • Data collection and review • Roles and responsibilities for review of data • Triggers and actions for corrective actions. 				
LP07	Building condition surveys would be undertaken on properties and structures within the preferred project corridor (the zone on the surface equal to 50 metres from the outer edge of the tunnels) and within 50 metres of surface.				
LP08	Services in locations where differential / angular settlement is anticipated would be identified. A monitoring plan, triggers and actions				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	would be agreed with the utilities owner prior to potential impacts occurring.				
LP09	A monitoring program, undertaken as part of the Settlement Management Plan, would be undertaken to ensure that settlement has stabilised before monitoring is completed.				
LP10	Sites directly affected by construction works, including demolition of structures, would consider the potential for, and where necessary treat, termites consistent with AS 4349.3 2010 Inspection of Buildings – Timber Pest Inspections and AS 3660.2 2000 Termite Management In and Around Existing Buildings and Structures.				
OpLP01	Land acquisition for the project would be undertaken consistently with the principles in the Land Acquisition Information Guide (Roads and Maritime, 2014b) and the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> (NSW).				
OpLP02	Property accesses that are affected as a result of the project would be reinstated in consultation with the affected landowners including relocation if required.				
Visual impacts and urban design					
V01	Existing vegetation around the perimeter of the construction compounds would be retained where feasible and reasonable, particularly: <ul style="list-style-type: none"> Vegetation surrounding the Bexley Road East construction compound, particularly along the boundary between residential properties and the compound along the northern and eastern boundaries Mature trees along the north-west (Marsh Street) and south-west boundaries of the Arncliffe construction compound site Mature trees and vegetation along the boundary of Sydney Park along Campbell Road and Barwon Park Road. 				
V02	Landscape planting would use fast growing species where reasonable and feasible. This would soften views of construction sites, particularly for compounds located within public recreational spaces.				
V03	Revegetation and landscaping would be undertaken progressively.				
V04	Temporary noise barriers would be erected early within the site establishment phase where required to minimise noise impacts and provide visual screening.				
V05	Temporary noise barriers would be designed to include painted surface and project information / logo to deter graffiti and reduce the scale of				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	noise barriers, particularly adjacent to residential areas or public open space.				
V06	Site hoardings and fencing would be regularly maintained, including the prompt removal of graffiti.				
V07	Acoustic sheds would be designed to minimise noise impacts and provide visual screening to be visually recessive, such as the use of mid toned colours and materials to minimise the intrusiveness and potential glare of the sheds.				
V08	During detailed design, the Roads and Maritime would liaise with the Civil Aviation Safety Authority to assess the potential for impacts of night lighting from the construction of the project on Sydney Airport operations. Mitigation measures would then be developed as required.				
V09	Cut-off or and directed lighting would be used within and outside of construction compounds with lighting location and direction considered to ensure glare and light spill are minimised.				
V10	The lighting design for shared paths located within the M5 Linear Park impacted by the project or located adjacent to compounds would be designed to minimise light spill to adjoining residential properties while maintaining a safe night time environment for path users (eg lighting position below the height of the fence line).				
V11	A signage strategy would be developed during detailed design for temporary wayfinding and safety. Potentially affected receivers would be consulted on the final signage in relation to the location and associated impacts.				
V12	Elements within construction sites would be located to minimise visual impacts as far as feasible and reasonable, for example, locating equipment back from site boundaries.				
V13	Opportunities would be investigated to maximise the separation distances as far as reasonable and feasible: <ul style="list-style-type: none"> Between the Kingsgrove North construction compound to the adjoining residential areas to reduce shading and visual impacts Between the Bexley Road North and Bexley Road East construction compounds and adjoining residential areas to reduce shading and visual impacts. 				
V14	Opportunities would be investigated to provide an alternative southern cycle route for the length of the existing shared path impacted by the western surface works.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
OpV01	Vegetated batters would be limited to 1:3 and 1:4 where possible in order to maximise the impact of vegetation on these batters and minimise maintenance.				
OpV02	Chain link fencing for sites would only be used where these would not be viewed by sensitive receivers, such as residents and users of recreational space. At these locations, high quality fencing suitable for parks and public spaces would be considered.				
OpV03	Where large areas of hardstand are or structures are designed, such as carparks, consideration of shade trees within these spaces would be considered where reasonable and feasible to soften views and provide shade and visual amenity.				
OpV04	Pedestrian and shared paths would be aligned away from residential property boundaries where public open space adjoins residential boundaries.				
OpV05	Planting areas would be maximised, where feasible, between public open space and infrastructure, and would include taller screening vegetation (at the Bexley Road South motorway operations complex (MOC2) between the built form and the M5 Linear Park shared path for example).				
OpV06	<p>A final <u>urban design and landscape plan</u> would be prepared in consultation with the New M5 Urban Design Review Panel, local councils within the project corridor and the local community. The Plan shall include (but not limited to):</p> <ul style="list-style-type: none"> • The architectural treatment of the ventilation facilities, which would be informed by the functional requirements and the design principles detailed in the New M5 Urban Design Report. • Landscape plans and final plant species for the western surface works, Bexley Road motorway operations complex, Arncliffe motorway operations complex, the St Peters interchange and local road upgrades • The artwork strategy for the Kindilan underpass • Outcomes of consultation with NSW Heritage Office with respect to integration of heritage interpretation into the urban design of the Alexandra Canal bridge crossings and St Peters interchange. The urban design of Alexandra Canal bridge crossings would also consider the Alexandra Canal Heritage Conservation Plan (NSW Architect's Office, 2004) • Consideration of the outcomes of the Safety in Design review of the project. 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
OpV07	The design of the noise attenuation at the western surface works would be confirmed during detailed design and in consultation with the local community. This may consist of noise mounds and barriers (or a combination of both) and with consideration to the provision of accessible open space at Beverly Grove Park and a landscaped outlook.				
OpV08	Landscaping at the Bexley Road motorway operations complex would consider opportunities to complement the existing topography of the built site as well as the adjacent Wolli Creek bushland.				
OpV09	Reasonable and feasible measures to use landscaping to screen or filter views of the Arncliffe motorway operations complex from residential areas to the west would be implemented.				
OpV10	Opportunities to maximise the green canopy throughout the local road upgrades at Peters with tree planting in medians where safety barriers and / or speed limits permit would be explored during detailed design, and implemented where reasonable and feasible.				
OpV11	During detailed design, the Roads and Maritime would liaise with the Civil Aviation Safety Authority to assess the potential for impacts of night lighting from the operation of the project on Sydney Airport operations. Mitigation measures would then be developed as required.				
OpV12	Lighting design within motorway operations complexes, roadways, and on elevated pedestrian bridges would minimise the impacts of lighting to surrounding areas (particularly residential areas), for example through the use of cut-off, directed lighting and landscaping to minimise light spill and glare. This includes consideration of residences along Campbell Road.				
OpV13	Opportunities to further minimise the overshadowing and visual impacts to the 2-34 Campbell Road terraces by the Campbell Road pedestrian / cycle bridge would be explored during detailed design				
Social and economic					
SEO1	A <u>community involvement plan</u> would be implemented to provide timely, regular and transparent information about changes to access and traffic conditions, details of future work programs and general construction progress throughout the construction phase of the project. Information would be provided in a variety of ways including letter box drops, media releases, internet site, signage and a hotline.				
SEO2	Acquisition would be undertaken consistently with the principles in the Land Acquisition Information Guide (Roads and Maritime, 2014b) and				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> (NSW).				
SEO3	A toll free number and website would be maintained to enable business owners and/or operators to receive prompt responses to their concerns, access information and view assistance measures in place during construction related work.				
SEO4	A business impact risk register would be maintained to identify and manage the specific impacts associated with construction related works for individual businesses.				
SEO5	The business stakeholder forum would be continued during detailed design and throughout construction to address business concerns. Further information about consultation can be found in Chapter 7 (Consultation)				
Soil and water quality					
SW01	The control and mitigation of potential surface water quality impacts during construction would be defined in a Soil and Water Management Plan prepared as part of the overall CEMP.				
SW02	The Soil and Water Management Plan would be developed to incorporate controls and measures in accordance with The Blue Book. The plan would be continually updated to suit the changing needs as the project works progress. The plan would be developed in consultation with the Environment Protection Authority and DPI - Water and document the types of measures that would be put in place to minimise the risk of soil erosion or polluted discharges reaching the receiving environments.				
SW03	An Erosion and Sedimentation Management Plan would be prepared as outlined in the Erosion and Sedimentation Risk Assessment Procedure (RTA, 2008).				
SW04	The Soil and Water Management Plan would include: <ul style="list-style-type: none"> • Construction traffic restricted to delineated access tracks, and maintained until construction complete • Appropriate sediment and erosion controls to be implemented prior to soil disturbance • Stormwater management to avoid flow over exposed soils which may result in erosion and impacts to water quality • Stockpiles located outside the 20 year ARI flood extent where feasible. Otherwise, appropriate management control measures such as bunding would be implemented 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	<ul style="list-style-type: none"> • Staging of surface works to minimise area of exposed surfaces, with re-vegetation and / or stabilisation of disturbed areas to occur as soon as feasible • Site compounds sealed or hard stand to minimise erosion where possible • Wheel wash or rumble grid systems installed at exit points to minimise dirt on roads • A soil conservation specialist would be contracted to supervise construction in high risk areas in accordance with the Erosion and Sedimentation Management Procedure (RTA, 2008c) • All water generated during construction would be captured, tested (and treated if required) prior to reuse or discharge under a site specific arrangement, depending on the quality of water generated. This would target compliance with the Water Quality Reference Criteria. At the St Peters interchange site this would include transfer of some water to the leachate treatment plant. Varying levels of groundwater quality would also require a variation to treatment approaches • Contaminated sediments and potential acid sulfate soils would be segregated and disposed of (with or without prior treatment as appropriate) at a licensed facility or treated onsite • Stockpiles would be located outside of riparian corridors. 				
SW05	<p>The water quality and outflow velocities of the water treatment plants at the following compounds would be in accordance with the project's Water Quality Reference Criteria and the project's Environment Protection Licence: Kingsgrove North construction compound (C1), Commercial Road construction compound (C3), Bexley Road South construction compound (C5), Arncliffe construction compound (C7), Canal Road construction compound (C8).</p>				
SW06	<p>The project specific water quality monitoring program would continue to collect to at least 12 months of data or to the commencement of construction (whichever is sooner) to represent pre-construction conditions for the project. Monitoring would continue during construction of the project as identified in Appendix A of the Technical working paper: Surface water (Appendix N). The details of this monitoring program would be contained in the Soil and Water Management Plan, and would include the following:</p> <ul style="list-style-type: none"> • Sampling locations to include upstream (control) and downstream 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	<p>measurement locations</p> <ul style="list-style-type: none"> • Samples taken twice a month, once in dry conditions and once in wet conditions where possible • In-situ monitoring of: <ul style="list-style-type: none"> - pH - Reduction Oxidation Potential - Dissolved Oxygen - Temperature - Conductivity - Turbidity - Colour - Odour • Analytical sampling of the following potential constituents of concern: <ul style="list-style-type: none"> - Total Recoverable Hydrocarbons - Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene - Nutrients including: Total Nitrogen, Total Kjeldahl Nitrogen, Nitrogen Oxide, Nitrite, Nitrate, Total Phosphorous and Reactive Phosphorous - Heavy metals (Arsenic, Cadmium, Copper, Chromium, Lead, Mercury, Nickel, Zinc) - Manganese - Ferrous Iron and Total Iron. 				
SW07	Water quality monitoring of the breeding ponds for Green and Golden Bell Frog near Marsh Street, Arncliffe would occur during construction by a suitably qualified scientist as part of the Green and Golden Bell Frog Plan of Management.				
SW08	Opportunities for reuse of treated water generated at the Arncliffe motorway operations complex would be considered during detailed design.				
SW09	An Acid Sulfate Soil Management Plan would be prepared as a sub-plan to the Construction Environment Management Plan to outline the requirements for the management of potential acid sulfate soils.				
SW10	Further contamination investigation would be conducted in areas with medium or high acid sulfate soils potential during the detailed design stage as part of early works. Management of acid sulphate soils during the project would be undertaken as per the management measures outlined in Section 17.4 of the EIS.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
SW11	<p>During landfill closure activities, surface water management measures would be implemented in accordance with The Blue Book to isolate and capture potentially contaminated water. Any such water would be transferred to the leachate treatment plant for treatment prior to discharge to sewer under a trade waste agreement with Sydney Water.</p>				
SW12	<p>The following measures would be in place to manage spills of contaminated fluids:</p> <ul style="list-style-type: none"> • Areas would be allocated for the storage of fuels, chemicals and other hazardous materials • Facilities would be secured and bunded to levels dictated by Environment Protection Authority guidelines • Spills or contaminated runoff would be captured and treated and / or disposed of at a licensed facility • With the exception of Arncliffe construction compound, Re-fuelling would occur in bunded areas or in areas beyond 40 metres from waterways. Where refuelling occurs outside bunded areas, specific refuelling procedures would be in place and operators would be trained in these procedures. Spill kits would be readily available to manage re-fuelling outside bunded areas. At Arncliffe construction compound, a bunded area would be provided where all refuelling would occur. • Wash down and preparation of construction materials would be undertaken in bunded areas to mitigate risks in relation to spills or leaks of fuels / oils or other hazardous onsite construction material • The application of good practice in the storage and handling of dangerous and hazardous goods would provide appropriate practical responses to manage impacts on occupational health and safety and minimise the risk of a spill occurring • Potential discharges from construction sites would be managed through the installation of basins (primarily designed for sediment capture but with capacity to contain the nominated spill volume) constructed in accordance with The Blue Book • Captured contaminants resulting from spills or leaks would be treated and disposed of at a licensed facility • Any soil which has been contaminated with fuel, oils or other chemicals would be disposed as contaminated soil by a waste subcontractor. 				
SW13	<p>Construction work activities within and / or adjacent to waterways would be minimised as much as feasibly possible to minimise disturbance to</p>				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	those waterways and waterfront land.				
SW14	Alignment of drainage and discharge outlet infrastructure would direct flows downstream to minimise alterations and erosion of the channel beds and banks.				
SW15	Drainage and discharge outlet infrastructure would include energy dissipation and erosion scour protection as appropriate.				
SW16	Disturbed floodplain environments adjacent to watercourses (including waterfront land) and / or along overland drainage lines would be stabilised and vegetation managed in accordance with the <i>Guidelines for Controlled Activities on Waterfront Land</i> (DPI, 2012a).				
OpSW01	Suitable stormwater treatment devices would be identified during detailed design, including an operational water treatment plant, with the aim of meeting the targets of the Botany Bay and Catchment Water Quality Improvement Plan (SMCMA, 2011). Where space is available, water quality basins would be installed. In the case where space is unavailable, treatment would include the use of proprietary stormwater treatment devices. The design of treatment trains would be informed by an assessment of the sensitivity of the receiving environments and supported by MUSIC modelling.				
OpSW02	The treatment capacity lost in decommissioning pond WQP – 2 would be provided by new or upgraded stormwater treatment devices. Replacement water quality devices would be installed and operational prior to decommissioning of the existing water quality pond (WQP-2) in Wolli Creek catchment.				
OpSW03	Operational water quality monitoring would be conducted for 12 months post-construction or as otherwise required by the conditions of approval. This would include upstream (control) and downstream monitoring locations. The details of this monitoring program would be contained in the Soil and Water Management Plan, and would include the following: <ul style="list-style-type: none"> • Sampling locations to include upstream (control) and downstream measurement locations • Samples taken twice a month, once in dry conditions and once in wet conditions where possible • In-situ monitoring of: <ul style="list-style-type: none"> - pH - Reduction Oxidation Potential - Dissolved Oxygen - Temperature 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	<ul style="list-style-type: none"> - Conductivity - Turbidity - Colour - Odour • Analytical sampling of the following potential constituents of concern: <ul style="list-style-type: none"> - Total Recoverable Hydrocarbons - Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene - Nutrients including: Total Nitrogen, Total Kjeldahl Nitrogen, Nitrogen Oxide, Nitrite, Nitrate, Total Phosphorous and Reactive Phosphorous - Heavy metals (Arsenic, Cadmium, Copper, Chromium, Lead, Mercury, Nickel, Zinc) - Manganese - Ferrous Iron and Total Iron. 				
OpSW04	New discharge outlets into Alexandra Canal would be designed with sufficient energy dissipation or scour protection to limit the impact on contaminated sediments and reduce the possibilities of contaminated sediments being subject to scour or resuspension.				
OpSW05	Where existing drainage lines are to be subject to increased inflow, an assessment of their discharge characteristics would be made. If necessary, energy dissipation or scour protection would be added to prevent contaminated sediments from being subject to scour or resuspended. This would be undertaken during detailed design.				
OpSW06	The assessment of risk of spills on the motorway would be undertaken during detailed design. If warranted, spill containment would be provided.				
OpSW07	The operational water treatment plant would be designed to meet the Water Quality Reference Criteria outlined in Appendix A of the Technical working paper: Surface water (Appendix N). Monitoring of the Cooks River would be undertaken during initial operation of the project to ensure discharge meets these criteria.				
OpSW08	Suitably designed scour and erosion control measures would be included in the detailed design.				
OpSW09	Drainage and discharge infrastructure where space is available would incorporate measures, as appropriate, to trap and remove sediments in line with the outcomes of the stormwater pollution reduction targets from the Botany Bay and Catchment Water Quality Improvement Plan (SMCMA, 2011). This would reduce the risk of any impacts to the geomorphic condition of receiving waters.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
Contamination					
CM01	The closure and ongoing management of the Alexandria Landfill would be undertaken in line with the LCMP (see Section 17.3.4 and Section 5.9.1 of the EIS) and remedial action plan. This includes a landfill closure, environmental management and monitoring framework.				
CM02	A site specific management plan would be prepared for the Alexandria Landfill to manage the excavation of parts of the landfill during construction. The management plans, amongst other requirements would detail mitigation measures to: <ul style="list-style-type: none"> • Contain and treat landfill gas emissions from excavations • Treat offensive odours produced by leachate and landfill gas • Contain, extract and treat leachate within excavations • Protect workers and off-site receptors from exposure to potential biological, chemical and physical hazards encountered during the exhumation of landfill waste. • Manage asbestos contaminated wastes 				
CM03	Potentially contaminated areas directly affected by the project would be investigated and managed in accordance with the requirements of guidance endorsed under section 105 of the CLM Act. This includes further investigations in areas of potential contamination identified in the construction footprint.				
CM04	An unexpected finds and hazardous materials procedure would be implemented to manage any potentially contaminated materials that may be encountered during site preparation and / or construction works.				
CM05	<u>Waste management plans</u> , as part of the CEMP, would include procedures for handling and storing potentially contaminated spoil and, should off-site disposal be required, undertaking waste assessment and classification for off-site disposal to appropriately licenced waste facilities. See Chapter 24 (Resource use and waste minimisation) of the EIS for more information.				
CM06	<u>Site specific asbestos management plans</u> would be developed where relevant. Refer to Chapter 24 (Resource use and waste minimisation) of the EIS for further information on asbestos management.				
CM07	A hazardous materials assessment would be carried out prior to and during the demolition of buildings. Demolition works would be undertaken in accordance with the relevant Australian Standards and relevant NSW WorkCover Codes of Practice, including the <i>Work Health and Safety Regulation 2011</i> .				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
CM08	A dangerous goods search of the WorkCover NSW records for licenced dangerous good would be undertaken prior to construction.				
CM09	An explosive ordnance due diligence assessment would be completed at the identified former ammunition site (Project area 3), located between Flatrock Road, Bexley Road and Wolli Creek.				
CM10	In the event of encountering unexpected finds of contamination (i.e. the observation of offensive odours, soil discoloration, buried waste or potential asbestos containing materials) during construction, work in the area would cease until an appropriately qualified environmental consultant can advise on the need for further assessment, remediation or other action, as deemed appropriate. Further assessment and management of contamination, if required, would be undertaken in accordance with section 105 of the CLM Act.				
CM11	Appropriate mitigation measures to minimise sediment mobilisation as a result of construction activities at the location of the new stormwater infrastructure at Alexandra Canal would be detailed in the CEMP in accordance with the requirements of the Remediation Order in consultation with NSW EPA and Sydney Water. Measures would be detailed in a Alexandra Canal Contamination Management Plan.				
CM12	Appropriate mitigation measures including stockpiling and management of potentially contaminated material would be undertaken at construction compounds to prevent movement of material into receiving waters.				
CM13	Plant, equipment and supplies would be managed to prevent spills and leaks. See Chapter 26 (Hazard and risk) of the EIS for more information.				
CM14	Tunnel washing water and waste would be appropriately contained, treated and disposed of. Refer to Chapter 24 (Resource use and waste minimisation) of the EIS for more information.				
CM15	Further <i>in situ</i> testing of soils in areas of known potential contamination to determine waste classification.				
OpCM1	The ongoing management of the Alexandria Landfill will be undertaken in line with the <u>LCMP</u> (see Section 17.3.4 and Section 5.9.1 of the EIS)				
OpCM2	Procedures to address spills, leaks and tunnel washing would be developed and implemented during operation of the project				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
OpCM3	Measures to minimise sediment mobilisation during operation would be incorporated into the design of stormwater outlets at the location of the new stormwater infrastructure at Alexandra Canal. The design of the outlets, including discharge velocities and scour protection measures, would be confirmed during detailed design and supported by appropriate drainage modelling. The detailed design of the outlets would be finalised in consultation with the NSW EPA with consideration of the requirements of the Remediation Order and would be provided to Sydney Water for approval (as the asset owner).				
OpCM4	Ongoing management of sites with contamination managed or emplaced in-situ would be managed in accordance with site specific Site Management Plans. Where required, a Site Management Plan (SMP) would be developed and implemented to manage risks associated with the presence of residual contamination that in situ. The requirement for an SMP would be evaluated based on the nature, concentration and extent of contamination as well as the current and proposed land use.				
Flooding and drainage					
FD01	<p>A Flood Management Strategy would be prepared by a suitable qualified and experienced person in consultation with directly affected landowners, DPI-Water, OEH, Sydney Water and the relevant local councils. It would include but not be limited to:</p> <ul style="list-style-type: none"> • Identification of flood risks to the project and adjoining areas, including consideration of local drainage catchment assessments and climate change implications on rainfall, drainage and tidal characteristics • Design and mitigation measures to protect proposed operations and not worsen existing flooding characteristics during construction and operation, including soil erosion and scouring • Drainage system upgrades • Preparation of a flood / emergency management plan. 				
FD02	The Flood Management Strategy would be peer reviewed and confirmed as meeting the requirements of this management measure by a suitably qualified and experienced independent hydrological engineer. It would be submitted to the Secretary of DP&E and the relevant local councils prior to construction works commencing in the vicinity of flood prone land and overland flow paths for the waterways and catchments in the vicinity of the project area, or as otherwise agreed by the Secretary of DP&E.				

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FD03	The 100 year ARI flood level is to be adopted in the assessment of measures which are required to mitigate any adverse impacts attributable to the project. Changes in flood behaviour under PMF conditions would also be assessed in order to identify impacts on critical infrastructure and significant changes in flood hazards as a result of the project.				
FD04	A detailed hydraulic assessment into the impacts the project would have on flooding behaviour and relevant mitigation measures would be undertaken.				
FD05	Works within the floodplain would be designed to minimise adverse impacts on surrounding developments for flooding up to the 100 year ARI flood. Assessment would also be undertaken of the impacts during flooding in excess of the 100 year ARI flood up to the PMF in the context of impacts to critical infrastructure and flood hazards.				
FD06	A floor level survey would be undertaken in affected areas to determine whether the project would increase floor damages in adjacent developments (ie in properties where there is a potential for increases in peak flood levels for events up to the 100 year ARI flood).				
FD07	<u>Flood management plans</u> would be developed as part of the CEMP prior to construction to guide the detailed design of temporary ancillary facilities, including construction compounds, to minimise the potential impacts of flooding on the project.				
FD08	Around 8,000 cubic metres of the projected 12,000 cubic metres of lost floodplain storage due to the operation of the Arncliffe motorway operations complex (MOC3) would be required to be recaptured. Floor level surveys would be undertaken to determine whether the project would result in the above- floor inundation of the following potentially affected properties. Further design development would be undertaken during detailed design to confirm the extent of works required to mitigate the impact of the project on flooding conditions at these existing residential developments.				
FD09	Detailed design would aim to reduce the impact of the project on flooding conditions for the following two potentially affected properties. This would include consideration of whether the project would result in above-floor inundation of these properties.				
FD10	The potential to reduce impacts of the project on flooding for the properties located on the western overbank of the Alexandra Canal would be considered during detailed design. This would also include consideration of whether the project would				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	result in above-floor inundation of these properties.				
FD11	Further design development would be undertaken to mitigate the impact of the project on flooding conditions in the TransGrid site. This would include further refinement of design of the relief drain, as well as the western approach to the Campbell Road bridge.				
FD12	Existing transverse drainage structures would be left in place during construction where transverse drainage structures are to be upgraded or replaced. If this is not feasible, temporary drainage would be adopted.				
FD13	Detailed flood modelling to understand the effects of likely rainfall events would be undertaken. Construction layouts would be finalised accordingly.				
FD14	Tunnel dive shafts would be protected against flooding either through locating openings outside of flood prone areas or constructing temporary bunding and / or appropriate temporary drainage. Stockpiles would be located outside the 20 year ARI flood extent where possible. Where construction compounds are located in the 20 year ARI flood extent, a contingency plan to manage flooding would be prepared and implemented.				
FD15	<p>Further detailed assessment of flooding impacts for proposed construction compounds and relevant management measures would be undertaken during detailed design. <u>Contingency plans</u> to manage flooding would be prepared and implemented for high risk temporary facilities proposed including fuel storages, water treatment plants and substations, as well as for the following construction compounds (located either wholly or partially within the 20 year ARI flood extent):</p> <ul style="list-style-type: none"> • Kingsgrove South construction compound (C2) • Commercial Road construction compound (C3) • Bexley Road North construction compound (C4) • Bexley Road South construction compound (C5) • Arncliffe construction compound (C7) • Alexandra Canal bridge construction compound (C12) • Gardeners Road bridge construction compound (C13). <p>For these sites, suitable procedures for flood warning, emergency management, site evacuation and planning would be developed.</p>				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
FD16	<p>The following measures would be implemented to manage flooding risks on construction sites:</p> <ul style="list-style-type: none"> • Temporary bunding around parts of the site that would be adversely affected by floodwaters • Temporary drains / detention areas within the site • Use of carpark to provide detention • Elevation of site buildings where necessary to get floor levels above expected flood levels • Use of erosion and sediment fences around noise barriers to provide bunding to some parts of the sites while directing overland flows through less sensitive parts of sites, particularly at Kingsgrove and Arncliffe. 				
FD17	<p>A <u>drainage strategy</u> would be determined during detailed design to manage the increased runoff within the catchment draining into Camdenville Park. This drainage strategy would be based on not increasing flows into the Eastern Channel for all events up to and including the 100 year ARI flood.</p> <p>The strategy would be prepared in consultation with Marrickville Council.</p>				
FD18	<p>A more detailed assessment would be undertaken during detailed design to determine the climate change related flood risks to the project and to scope requirements for any management measures. The assessment would be undertaken in accordance with the <i>Practical Considerations of Climate Change – Floodplain Risk Management Guideline</i> (DECC, 2007)</p>				
OpFD01	<p>Bridge crossings over the Alexandra canal would incorporate a suitable freeboard between the underside of the bridge structure and the peak 100 year ARI flood level.</p>				
OpFD02	<p>The project and associated arrangements would be designed to limit increases in peak discharges into the downstream drainage systems in accordance with local council requirements.</p>				
OpFD03	<p>The control and mitigation of potential localised flooding and drainage impacts during operation would include:</p> <ul style="list-style-type: none"> • Drainage systems that are of insufficient capacity would be modified or upgraded to cater for increased flows • Where new drains connect with existing drainage networks a survey and condition assessment would be undertaken to inform detailed design • The efficiency of transverse drainage upgrades would be taken into account during detailed design 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	<ul style="list-style-type: none"> The effects a partial blockage of major hydraulic structures on flooding behaviour would be considered when determining finished road level and flood wall heights. 				
OpFD04	Tunnel entries and associated flood protection barriers would be located above the PMF level or the 100 year ARI flood level plus 0.5 metres (whichever is greater). The same hydrological standard would be applied to tunnel ancillary facilities such as tunnel ventilation and water treatment plants where the ingress of floodwaters would also have the potential to flood the tunnels.				
OpFD05	A suitable freeboard would be incorporated into the design of openings into the new road tunnels (eg at the location of the tunnel portals and ventilation shafts). These designs would take into account the impacts of a partial blockage of major hydraulic structures as well as climate change induced sea level rise on PMF event levels.				
OpFD06	Emergency response facilities, including the motorway control centre, tunnel fire water tank and pump buildings and associated electrical substations would be locate above the PMF level or the 100 year ARI flood level plus 0.5 metres (whichever is greater).				
Groundwater					
GW01	An <u>Acid Sulfate Soil Management Plan</u> (ASSMP) would be prepared including the measures and monitoring to be undertaken where potential acid sulfate soils are expected. The plan would outline the type of treatment required for acid sulfate soils, bunding and requirement for treatment ponds.				
GW02	A groundwater and soil salinity report would be prepared prior to the commencement of earthworks to assess the potential impacts to the local hydrogeological regime.				
GW03	Contingency measures to address leachate management at the Alexandria Landfill during construction and prior to the commissioning of the new leachate treatment plant would be explored during detailed design. Identified measures would be detailed in the CEMP and implemented during construction.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
GW04	The tunnel construction program would be constructed in accordance with an overarching CEMP for the project which would include measures to manage contaminated groundwater issues. This may include removal of the source of the contamination by excavation and remediation of shallow impacted soils or engineering a solution to prevent the migration of contaminated groundwater into the tunnels.				
GW05	Intersected shallow contaminated groundwater would be directed to the construction water treatment plant prior to discharge. Elsewhere, collection and treatment options would be considered and releases made under relevant discharge criteria.				
GW06	The intersection of shallow groundwater at the Arncliffe construction compound (C7) would be managed under CEMP(s) for the project. In the event that contaminated groundwater is intersected the approach would be to either remove the source of the contamination by excavation and remediation of shallow impacted soils or engineering a solution to prevent the migration of contaminated groundwater into the project tunnels.				
GW07	Treated waste water would be stored and re-used for project purposes wherever possible. Groundwater reuse would be in accordance with the policies of sustainable water use of the NSW Office of Water, such as dust suppression and earthworks				
GW08	Where saturated faults and fractures are intersected additional rock support would be installed in order to ensure tunnel stability. Appropriate waterproofing measure to reduce the inflow to an acceptable quantity will be applied as required. Measures can range from a spray-on membrane to grouting or installation of a sheet membrane				
GW09	Where higher than expected inflows are experienced as beneath the Cooks River and under other major surface water features, appropriate waterproofing measure to permanently reduce the inflow to an acceptable quantity will be applied as required. Measures can range from a spray- on membrane to grouting or installation of a sheet membrane depending on the inflow volume				
GW10	Building materials that are resistant to aggressive groundwater conditions would be selected.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
GW11	<p>The project works would be undertaken in accordance with a CEMP(s) for the project which would include the following management measures:</p> <ul style="list-style-type: none"> • Stockpiles of fuels, hazardous liquids and chemicals would be stored in an impervious bunded area in accordance with Australian Standards and EPA guidelines • The storage of fuels and chemicals would be limited to locations more than 40 metres from any water course • With the exception of Arncliffe construction compound, re-fuelling would occur in bunded areas or in areas beyond 40 metres from waterways. Where refuelling occurs outside bunded areas, specific refuelling procedures would be in place and operators would be trained in these procedures. Spill kits would be readily available to manage re-fuelling outside bunded areas. At Arncliffe construction compound, a bunded area would be provided where all refuelling would occur. • Vehicles would be properly maintained to minimise the risk of fuel/oil leaks and routine inspections of construction equipment would be undertaken to identify any fuel/oil leaks • Emergency spill kits would be kept on-site and project personnel would be aware of the location of spill kits and trained in their use • Hazardous materials handling procedures would be documented and implemented • In the event of an incident resulting in impacts to human health or the environment, works would cease immediately and the EPA would be notified (if required) • Erosion and sediment control measures would be regularly inspected, and particularly following rainfall events. The controls would remain in place until construction works are completed and areas are stabilised. 				
GW12	<p>A tunnelling procedure that details a methodology to determine when and what type of waterproofing is required to be installed during construction would be implemented during construction. Pre- excavation pressure grouting may also be used in locations identified that could produce substantial inflows to reduce groundwater inflows to an acceptable level. Post grouting (ie grouting undertaken post excavation) may also be required to further reduce groundwater inflows. Post grouting would occur within one month post excavation.</p>				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
GW13	A groundwater monitoring program would be prepared and implemented to monitor groundwater impacts during construction. This would include the monitoring of groundwater inflow into the tunnels. The program would be developed in consultation with the EPA, DPI (Fisheries), NSW DPI Water and relevant councils.				
GW14	Where the project alignment passes close to watercourses and inflows are elevated, appropriate waterproofing measures to permanently reduce the inflow to an acceptable quantity would be applied as required				
GW15	In the event that the drawdown in a licensed water supply bore or irrigation bore exceeds two metres (in accordance with the Aquifer Interference Policy) or that impacts to groundwater quality alter the beneficial use of the water, measures would be taken to 'make good' the impact by restoring the water supply to pre-development levels. The measures taken would be dependent upon the location of the impacted bore and would be determined in consultation with the affected licence holder but could include, deepening the bore, providing a new bore or providing an alternative water supply.				
GW16	A <u>Settlement Monitoring Plan</u> would be prepared that would provide details on: <ul style="list-style-type: none"> • Location of monitoring points • Duration of monitoring • Data collection and review • Roles and responsibilities for review of data • Triggers and actions for corrective actions. 				
GW17	Building conditions surveys would be undertaken in the zone of influence of the tunnel settlement where the settlement is expected to have a potential impact. In the unlikely event that any damage occurs to a property, appropriate rectifications would be carried out.				
GW18	Services in locations where differential/ angular settlement is anticipated would be identified. A monitoring plan, triggers and actions would be agreed with the relevant utility owner prior to potential impacts occurring.				
GW19	A monitoring program, undertaken as part of the Settlement Management Plan, would be carried out prior to excavation until all relevant settlement has stabilised. Monitoring would be for a period of not less than six months after settlement has stabilised.				
OpGW01	An OEMP would be prepared and implemented to outline management measures for groundwater inflows, treatment and discharge and protocols for spillages or incidents. Monitoring parameters may include				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	groundwater levels, groundwater quality including field parameters, laboratory analytes and sample frequency.				
OpGW02	The drainage system would be regularly maintained in accordance with the Operational Environmental Management Plan.				
OpGW03	<p>A groundwater monitoring program would be prepared and implemented to monitor groundwater impacts during tunnel operations. This would include the monitoring of groundwater inflow into the tunnels. The program would be developed in consultation with the EPA, DPI (Fisheries), NSW DPI Water and relevant councils. The groundwater monitoring program would continue (where appropriate) the construction groundwater monitoring program (GW13) and would continue for three years, after which, the requirement for further monitoring would be assessed. The following analytes would be added to the groundwater baseline monitoring program for the project in order to inform the discharge water quality criteria</p> <ul style="list-style-type: none"> • Ammonium • Phenols • Organophosphorus pesticides • Polychlorinated biphenyls (PCBs). <p>Discharge water quality criteria would be developed in consultation with the EPA.</p>				
OpGW04	Contingency measures to address leachate management in the event of pump failure would be explored during detailed design and implemented in the Landfill Closure Plan.				
OpGW05	The final design capacity of the new leachate treatment plant would have a maximum 200 kilolitres per day and would be confirmed in consultation with Environment Protection Authority and Department of Primary Industries (Water) during detailed design.				
Non-Aboriginal heritage					
NAH01	Protocols would be developed for anticipated categories of unexpected non-Aboriginal heritage finds, such as tram infrastructure, late 19th to early 20th refuse, and brick works. In the event of an unexpected cultural heritage find outside of these specific protocols, the <i>Standard Management Procedure – Unexpected Archaeological Finds</i> (Roads and Maritime, 2015a) would be followed. This would include notification to the NSW Heritage Division of OEH (highly effective).				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
NAH02	Construction personnel would be made aware of non-Aboriginal heritage sites as part of the site induction. These sites would be identified on sensitive area plans and in the CEMP (highly effective).				
NAH03	As part of the construction heritage management plan, an <u>overarching historical archaeological research design</u> would be prepared prior to commencement of construction in consultation with the NSW Heritage Division of OEH. It would describe clear significance thresholds to possible archaeological items that may be uncovered during works and designate when monitoring, testing and / or salvage and excavation should occur in relation to the project works and timing. Post-excavation reporting, including artefact analysis and additional historical research (where necessary), would be required for any historical archaeological investigations undertaken (moderately effective).				
NAH04	<p>A <u>construction heritage management plan</u> would be prepared prior to construction in consultation with the NSW Heritage Division of OEH, local councils and Sydney Water. The plan would detail how construction impacts on heritage would be minimised and managed including training and induction processes for construction personnel. Inductions are to cover built heritage, landscape and historical archaeological sites and their management, and provide heritage guidance on how to avoid / manage impacts. The induction would be prepared in consultation with a suitably qualified heritage specialist and historical archaeologist. As a minimum, the plan would include the following:</p> <ul style="list-style-type: none"> • Induction protocols for staff and project personnel to undertake a cultural heritage induction, to assist them in understanding and complying with their legal obligations under the <i>Heritage Act 1977</i> • A list, plan and GIS layer showing the location of identified heritage items • A significance assessment and statement of significance for each item • Detail the mitigation measures identified and when the measures are to be implemented • Provide protocols and procedures to be enacted during construction to ensure the protection of items of heritage significance, or elements that contribute to the values of the heritage conservation area • An unexpected finds procedure in the event that further sites are identified during works. The separate procedure for the discovery of skeletal remains (highly effective). 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
NAH05	Impacts to built heritage, heritage landscapes and historical archaeological sites, will to the greatest extent practicable, be avoided and minimised. Where impacts are unavoidable, works shall be undertaken in accordance with the strategy outlined in the construction heritage management plan (moderately effective).				
NAH06	In relation to the house at 82 Campbell Street and terrace group at 28-44 Campbell Street the following would be undertaken: <ul style="list-style-type: none"> The buildings would be subject to a full archival recording following the <i>NSW Heritage Division guidelines How to Prepare an Archival Recording</i> (NSW Heritage Office, 2003) and <i>Photographic recording of heritage items using film or digital capture</i> (NSW Heritage Office, 2006) Consideration should be given as to whether elements of the houses could be salvaged and used to maintain or restore other properties managed by Roads and Maritime (somewhat effective). 				
NAH07	In relation to Rudders Bond Store, the following would be undertaken: <ul style="list-style-type: none"> The bond store would be subject to a full archival recording following the <i>NSW Heritage Division guidelines How to Prepare an Archival Recording</i> (NSW Heritage Office, 2003) and <i>Photographic recording of heritage items using film or digital capture</i> (NSW Heritage Office, 2006). This would include a comparative analysis of the Rudders Bond Stores should be prepared against other laminated truss Symonds buildings in NSW and Australia Consideration would be given as to whether the selected laminated timber columns could be salvaged and re-erected and clad elsewhere within the St Peters interchange or the local area. The cladding and brick walls are not considered to be of heritage significance and are not included within the reuse proposal. The level of fabric salvage required, the appropriate methodology for salvage and identification of appropriate adaptive reuse and locations for reuse of these elements would be determined in consultation with Heritage Council, the NSW Heritage Division of OEH and the New M5 Design Panel, with advice from a suitably qualified specialist informed by the full archival recording prior to the demolition of the item Investigate options for documenting the history of the Ralph Symonds company and presenting it to a national audience, in partnership with stakeholders such as the City of Sydney and Powerhouse Museum. The focus would be on their development of innovative timber construction methods during and after 				

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	World War II (somewhat effective).				
NAH08	<p>In relation to the Service Garage at 316 Princes Highway, the following would be undertaken:</p> <ul style="list-style-type: none"> • An existing condition survey report and program of monitoring would be undertaken to identify early potential risks to the heritage item • A photographic archival recording is undertaken prior to the current use ceasing. The archival recording should conform to the guidelines provided in <i>How to prepare archival records</i> (NSW Heritage Office, 2003) and <i>Photographic recording of heritage items using film or digital capture</i> (NSW Heritage Office, 2006). The archival recording should be lodged with the relevant local libraries and the State Library of NSW. • The oral history should be prepared, which seeks to contact past and present employees as well as others with memories of the service station. The oral history should be lodged with the relevant local libraries and the State Library of NSW (somewhat effective). 				
NAH09	Detailed mitigation and management measures would be developed for each heritage item directly impacted by the project with regard to vibration (surface and tunnelling) and settlement once final disturbance areas have been identified through detailed design. These mitigation and management measures would be included in the CEMP(s) for the project (highly effective).				
NAH10	<p>Surface works would adhere to safe working distances, and an existing condition survey report and program of monitoring would be undertaken to identify early potential risks at the following non- Aboriginal heritage items:</p> <ul style="list-style-type: none"> • Wolli Creek Culvert • St Peters Public School, including interiors • Terrace housing, including interiors (I273) • Waugh and Josephson industrial buildings, former, showroom, offices and workshops, including interiors • Town and Country Hotel, including interiors • Group of Victorian Filigree and Victorian Italianate terrace houses – Narara, including interiors • Terrace group I12 • Water Board pump house, including Interior and substructure • Industrial Building, 'Frank G Spurway' • Former Alexandria Spinning Mills (highly effective). 				

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NAH11	An existing condition survey report and program of monitoring would be undertaken to identify early potential risks at the Macdonaldtown Stormwater Channel #3 (highly effective).				
NAH12	<p>The following non-Aboriginal heritage properties would be considered for at property acoustic treatment:</p> <ul style="list-style-type: none"> • St Peters Public School, including interiors • Terrace group I12 (highly effective). <p>Acoustic treatments would be confirmed during detailed design, and would consider the principles of <i>The Burra Charter (the Australia ICOMOS charter for places of Cultural Significance)</i> (ICOMOS (Australia), 2013).</p>				
NAH13	<p>Management measures for the Goodsell Estate Heritage Conservation Area would include:</p> <ul style="list-style-type: none"> • Landscaping, to mitigate the impacts of realigning and widening roads, as well as alterations to the existing stormwater detention basin • Surface works would adhere to safe working distances • An existing condition survey report and program of monitoring would be undertaken to identify early potential risks to relevant structures within the conversation area and within 50 metres of the main alignment tunnels (highly effective). 				
NAH14	<p>Management measures for the Clemton Park Urban Conservation Area would include:</p> <ul style="list-style-type: none"> • Surface works would adhere to safe working distances • An existing condition survey report and program of monitoring would be undertaken to identify early potential risks to relevant structures within the conservation area • Landscaping would provide screening of the Bexley Road South motorway operations complex from the Clemton Park Urban Conservation Area, once established (highly effective). 				
NAH15	<p>Management measures for the Pallamanna Parade Urban Conservation Area would include:</p> <ul style="list-style-type: none"> • Surface works would adhere to safe working distances • An existing condition survey report and program of monitoring would be undertaken to identify early potential risks to relevant structures within the conservation area • Landscaping would provide screening of the project from the Pallamanna Parade Urban Conservation Area, once established 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	(highly effective).				
NAH16	<p>The following management measures would be implemented with respect to Alexandra Canal:</p> <ul style="list-style-type: none"> • Monitoring during works to ensure vibration is not impacting the Alexandra Canal walls • Preparation of an archival recording of the Canal, involving both scale drawings and photography, prior to the removal of sandstone blocks • Numbering of sandstone blocks so that those displaced by the discharge points can be replaced in their previous locations • Stockpiling displaced sandstone blocks for use in repairs of other sections of the Alexandra Canal • Installation of heritage interpretation regarding the Canal in accordance with an interpretation plan (moderately effective) • Any rehabilitation or conservation works in the vicinity of these areas would be determined in consultation with Sydney Water, as the asset owner • Skilled trades people would be used for the proposed works along Alexandra Canal that involve direct interaction with the heritage item. 				
NAH17	<p>An interpretation plan would be prepared and implemented for:</p> <ul style="list-style-type: none"> • Alexandra Canal and the industrial heritage of the area. This shall include installation of a heritage interpretation regarding the Canal in accordance with an interpretation plan • The St Peters Brickpit geological site, including: <ul style="list-style-type: none"> - Integrate the geological interpretation into the Sydney Park brickworks in consultation with City of Sydney, as the industrial counterpart to the geological history to tell a more complete story of historical land use in the area - Integrate the geological / palaeontological discovery of the <i>Paraclytosaurus davdi</i> 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	<ul style="list-style-type: none"> - Retain an exposed section of the fresh shales and siltstones, including features associated with deposition of the sedimentary rocks, and later formed fractures such as joints and faults, if feasible and safe to do so for both landform stability and ongoing access for interpretation (moderately effective). 				
NAH18	An archival recording of the St Peters brickpit geological site would be undertaken prior to and during the construction (highly effective).				
NAH19	An assessment and / or consultation with a palaeontologist to determine whether the project impact area has potential to contain further specimens of scientific interest (highly effective).				
NAH20	Approaches to appropriately manage impacts of the project to the individual contribution of views into and out from heritage properties and the long-term impact of construction would be detailed in a CEMP (highly effective). Individually tailored landscape treatments would be developed during detailed design to mitigate visual impacts at 2-34 Campbell Road, St Peters.				
NAH21	The construction heritage management plan would include detailed procedures / strategies for the conservation and curation of any historical artefacts recovered during works (moderately effective).				
NAH22	Urban design and landscaping would be undertaken to manage visual impacts to the following additional non-Aboriginal heritage items: <ul style="list-style-type: none"> • Terrace housing (I273) • Southern Cross Hotel (I277) • Water Board pump house (I18) (highly effective). 				
Biodiversity					
B01	A Flora and Fauna Management Plan will be developed before construction and in accordance with Roads and Maritime's <i>Biodiversity Guidelines</i> (RTA, 2011). The Plan will identify potential impacts to biodiversity and describe mitigation measures and environmental controls to be implemented during construction, including measures to				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	protect biodiversity features which will be retained.				
B02	The removal of established vegetation will be minimised, where possible.				
B03	Pre-clearance activities will be carried out in accordance with <i>Guide 1 Pre-clearing process</i> of Roads and Maritime's <i>Biodiversity Guidelines</i> (RTA, 2011). Pre-clearing surveys will be undertaken by a suitably qualified ecologist to identify the presence of: <ul style="list-style-type: none"> Hollow-bearing trees Threatened flora and fauna. 				
B04	Trees will be removed in accordance with <i>Guide 4 – Clearing of Vegetation and Removal of Bushrock</i> of Roads and Maritime's <i>Biodiversity Guidelines</i> (RTA, 2011).				
B05	Where vegetation clearance is required, exclusion zones will be established in accordance with <i>Guide 2 Exclusion Zones</i> of Roads and Maritime's <i>Biodiversity Guidelines</i> (RTA, 2011).				
B06	Where reasonable and feasible, mature and hollow-bearing trees will be retained. Where this is not reasonable and feasible, nest boxes will be installed to mitigate the impacts of removing hollow bearing trees in accordance with Table 8.1 of <i>Guide 8 – Nest boxes</i> of Roads and Maritime's <i>Biodiversity Guidelines</i> (RTA, 2011) at least one month prior to the commencement of construction				
B07	Locally indigenous species will be included as part of landscaping and rehabilitation works to promote native fauna habitat.				
B08	Should unexpected threatened flora or fauna be located at any time during construction, relevant works will cease in the area to prevent further harm to the individual. Should this occur, a suitably qualified ecologist will be engaged to advise on appropriate mitigation and management measures.				
B09	Any fauna handling would be undertaken by an appropriately licenced ecologist in accordance with <i>Guide 9 – Fauna handling</i> of Roads and Maritime's <i>Biodiversity Guidelines</i> (RTA, 2011).				
B10	The <u>Green and Golden Bell Frog Plan of Management Plan</u> will be finalised and implemented to minimise and manage impacts to the Arncliffe key population. The Green and Golden Bell Frog Plan of Management Plan would be approved by the Commonwealth Department of the Environment and OEH, and would include: <ul style="list-style-type: none"> Management measures to be implemented at the Arncliffe 				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	<p>construction compound (C7) and RTA Ponds to minimise and manage impacts to the Green and Golden Bell Frog habitat and key population during construction.</p> <ul style="list-style-type: none"> • Management measures relating to the enhancement of existing habitat at the Marsh Street Wetland • Supplementary management measures for consideration to mitigate and minimise impacts to the Green and Golden Bell Frog. 				
B11	Measures to mitigate potential water quality impacts during construction are outlined in Section 16.4 and Section 18.4 of the EIS.				
B12	Works within or near aquatic habitats and riparian areas will be managed in accordance with <i>Roads and Maritime's Guide 10 – Aquatic habitats and riparian zones</i> and <i>Guidelines for Controlled Activities on Waterfront Land</i> (DPI, 2012a).				
B13	Works within aquatic habitats or riparian zones would be undertaken to limit impacts on aquatic flora and fauna, and their habitats, and impacts on riparian areas. This would be undertaken in accordance with Guide 10 of the <i>Biodiversity Guidelines</i> and <i>Guidelines for Controlled Activities on Waterfront Land</i> (DPI, 2012a).				
B14	Where possible, construction activities would minimise disturbance to waterways and riparian land.				
B15	Stockpiles would be located outside riparian corridors.				
B16	Weeds within the construction footprint will be actively managed prior to the clearance of vegetation. All weed material cleared from within the construction footprint of the project will be disposed of at a facility licensed to receive green waste.				
B17	Vegetation within the road reserve adjacent to areas to be cleared will be managed in accordance with <i>Guide 6 – Weed Management</i> and <i>Guide 10 – Aquatic Habitats and Riparian Zones</i> of <i>Roads and Maritime's Biodiversity Guidelines</i> (RTA, 2011) to reduce the introduction and spread of noxious weed species.				
B18	Landscaping and revegetation works will be undertaken using weed-free topsoil in accordance with the project's urban design concept plan.				
B19	A hygiene protocol will be implemented as part of the CEMP(s) for the project to prevent the spread and exacerbation of the Chytrid Fungus in accordance with <i>Guide 7 – Pathogen Management</i> of <i>Roads and Maritime's Biodiversity Guidelines</i> (RTA, 2011).				
B20	A risk assessment process will be used for each construction compound to determine the need to clean machinery prior to entering				

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B21	Machinery will be cleaned prior to entering the construction compound sites.				
B22	Pathogens will be identified as part of pre-clearing inspections. In the event that pathogens are identified within the construction footprint, appropriate mitigation measures will be identified by an ecologist and implemented as part of the CEMP(s) in accordance with <i>Guide 7 – Pathogen Management of Roads and Maritime’s Biodiversity Guidelines</i> (RTA, 2011).				
OpB01	A management plan will be developed and implemented to identify and mitigate potential ongoing impacts to biodiversity, including procedures for: <ul style="list-style-type: none"> • Management of weeds • Management, maintenance and rehabilitation of riparian land disturbed by the project and riparian areas associated with the discharge of treated water • Maintenance of nest boxes 				
Greenhouse gas					
GHG1	Prepare a <u>Greenhouse Gas Emissions Strategy and Management Plan</u> for the project.				
GHG2	Undertake an updated greenhouse gas assessment based on detailed design.				
GHG3	The emissions intensity of significant construction materials specified in the design of the project would be assessed and, where feasible and in compliance with technical specifications, low emission construction materials would be used.				
GHG4	Where feasible, recycled content road construction materials such as recycled aggregates in road pavement and surfacing, or similar, would be used.				
GHG5	The fuel efficiency of construction plant and equipment would be assessed before selection and, where feasible and reasonable, equipment with the highest fuel efficiency or equipment that uses lower greenhouse gas intensive fuel such as biofuels (eg biodiesel, ethanol) would be used.				
GHG6	Project planning would be undertaken to ensure that the site vehicle movements and construction activities are efficient, to avoid double handling of materials and unnecessary fuel use where possible.				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
GHG7	Locally produced goods and services would be procured where feasible and cost effective to reduce transport fuel emissions.				
GHG8	At least six per cent of construction energy required for the project would be sourced where possible from an accredited GreenPower energy supplier				
GHG9	Where possible, and fit for purpose, spoil would be beneficially re-used within the project before off- site re-use or disposal options are investigated. A <u>spoil management strategy</u> would be developed for the project prior to the commencement of construction and would identify spoil disposal sites and the management of excess spoil.				
GHG10	Waste would be diverted from landfill, including diversion of spoil, construction and demolition waste, and commercial and industrial waste, where reasonable and feasible. The management of waste would be considered as part of the preparation of the CEMP for the project, detailing the appropriate procedures for waste management.				
OpGHG 1	The main alignment tunnels would be designed to minimise fuel consumed by vehicles using the road, for example through the provision of a vertical alignment that allows consistent vehicle speeds to be maintained.				
OpGHG 2	A life cycle assessment would be undertaken as part of the detailed design in order to select mechanical and electrical systems with increased energy efficiencies, where reasonable and feasible, such as the tunnel ventilation system, tunnel lighting, water treatment systems and electronic toll and surveillance systems.				
OpGHG 3	Low carbon energy generation options would be investigated as part of the detailed design process in order to reduce the demand on mains electricity and generate renewable energy onsite, where feasible. At least six per cent of energy required for the project would be sourced from an accredited GreenPower energy supplier, where possible.				
Aboriginal heritage					
AH 1	Vibration generating activities, including blasting would be conducted in a manner to ensure vibration levels do not exceed three millimetres per second at potential Aboriginal heritage site SR-OVRH-1.				
AH 2	Vibration monitoring would be carried out during vibration intensive works within 50 metres of SR- OVRH-1. The need for vibration monitoring would be informed by a preliminary screening of activities at this location to identify what activities have the potential for vibration at this location. The preliminary screening and works requiring monitoring				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
	would be contained within the CEMP.				
AH 3	A baseline condition assessment would be completed by a qualified structural engineer for Aboriginal site SR-OVR-1 before construction commences, followed by a condition assessment immediately following significant vibration and with recommendations for remediation measures if required.				
AH 4	<p>If an Aboriginal object(s) is discovered during construction it would be managed in accordance with the <i>Standard Management Procedure: Unexpected Heritage Items</i> (Roads and Maritime Services,2015), including:</p> <ul style="list-style-type: none"> • Ceasing works in the vicinity of the object(s), where there is the potential to directly or indirectly impact on the object(s) • Notifying the construction Environmental Representative and OEH of the discovery • Engaging a qualified archaeologist to determine the nature, extent and scientific significance of the object(s) • Developing management recommendations in consultation with the qualified archaeologist, OEH and RAPs. 				
AH 5	<p>In order to manage the potential discovery of an Aboriginal object(s) during pile installation adjacent to Alexandra Canal the following strategy would be implemented:</p> <ul style="list-style-type: none"> • Geotechnical coring at each pile location by a geotechnical engineer to obtain intact sediment samples to a depth of around seven metres • Inspection of obtained sediment samples by a qualified archaeologist in consultation with the geotechnical engineer in order to characterise the soil profile and identify any Aboriginal archaeological materials Should Aboriginal archaeological material be present within one or more core samples, management would occur in accordance with the <i>Standard Management Procedure: Unexpected Heritage Items</i> (Roads and Maritime, 2015). 				

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AH 6	<p>If human remains are discovered during construction would be managed in accordance with the <i>Standard Management Procedure: Unexpected Heritage Items</i> (Roads and Maritime Services, 2015), including:</p> <ul style="list-style-type: none"> • Ceasing works in the vicinity of the remains, with the potential to directly or indirectly impact on the remains • Notifying the construction Environmental Representative, OEH and NSW Police of the discovery • Following directions from the NSW Police and / or OEH, as relevant, depending on the nature of the remains and the outcomes of forensic investigations. 				
Resource use and waste minimisation					
WM01	<p>Construction energy consumption would be reduced through initiatives such as:</p> <ul style="list-style-type: none"> • Use of roadheaders, which can excavate a more efficient shape for the road tunnel than tunnel boring machines, resulting in less spoil generation and less energy consumption for handling, management and transport of spoil • Local materials procurement where feasible and cost effective to reduce fuel consumption for transport • Selection of efficient construction plant and equipment where possible • Use of recycled materials where feasible • Efficient practices on site (for example, switching off engines when not in use) • Use of energy efficient or solar powered lighting for temporary construction facilities • Investigating the use of biofuel for construction vehicles. 				
WM02	Where feasible and reasonable, construction material would be sourced from within the Sydney region.				
WM03	Unnecessary resource consumption would be avoided by making realistic predictions of the required quantities of resources such as construction materials				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
WM04	<p>Resource recovery would be applied to the management of construction waste and would include:</p> <ul style="list-style-type: none"> • Recovery of resources for reuse-reusable materials generated by the project would be segregated for reuse either on-site or off-site where possible, including the reuse of the major waste streams (VENM and ENM) • Recovery of resources for recycling - recyclable resources (such as metals, plastics and other recyclable materials) generated during construction and demolition • Resources would be segregated for recycling • These materials would then be sent to an appropriate recycling facility for processing. • Recovery of resources for reprocessing -cleared vegetation would be mulched or chipped on-site and used for landscaping, in the absence of a higher beneficial use being identified. 				
WM05	Where reasonable and feasible, Packaging Take Back arrangements would be implemented with suppliers.				
WM06	Wastes would be managed (classified, handled and stored) and reused / recycled / disposed of in accordance with relevant State legislation and government policies including the POEO Act, <i>Waste Avoidance and Resource Recovery Act 2001</i> , <i>Waste Avoidance and Resource Recovery Strategy 2014-2021</i> (EPA, 2014b), and the sustainable procurement objective of the <i>WestConnex sustainability strategy</i> (WestConnex Delivery Authority, 2015).				
WM07	A Construction Waste Reuse Recycling and Energy plan (CWRREMP) would be prepared as part of the CEMP detailing appropriate procedures for waste management. The Construction Waste Recycling Reuse Environment Management Plan would ensure waste disposal and energy use is minimised by tracking and reporting performance and applying corrective action as required.				
WM08	<p>Wastes would be managed using the waste hierarchy principles of:</p> <ul style="list-style-type: none"> • Avoidance of unnecessary resource consumption to reduce the quantity of waste being generated. • Recover resources for reuse on-site or off-site for the same or similar use, without reprocessing. • Recover resources through recycling and reprocessing so that waste can be processed into a similar non-waste product and reused. • Disposal of residual waste. 				

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WM09	Residual waste would be disposed of to a suitably licensed landfill or waste management facility where there are no other feasible and reasonable options for waste avoidance, reuse or recycling. Waste materials requiring removal from the site would be classified, handled and stored in accordance with the <i>Waste Classification Guidelines: Part 1 Classifying Waste</i> (EPA, 2014a) until collection by a contractor for disposal.				
WM10	Off-site reuse of waste would comply with relevant NSW Environment Protection Authority resource recovery exemptions and requirements.				
WM11	Asbestos handling and management would be undertaken in accordance with the project's Asbestos Management Plan and relevant legislation, policies and standards: <ul style="list-style-type: none"> • <i>Work Health and Safety Act 2011</i> • <i>Code of Practice for the Safe Removal of Asbestos 2nd Edition (NOHSC, 2005a)</i>. • <i>Code of Practice for the Management and Control of Asbestos in Workplaces (NOHSC, 2005b)</i>. • <i>Protection of the Environment Operations (Waste) Regulation 2014 – Part 7 Transportation and management of asbestos waste.</i> • Australian Standard AS2601:1991 Demolition of Structures. 				
WM12	Measures would be implemented to manage stockpiles such as potentially locating stockpiles outside of overland flowpaths, riparian corridors and finished and contoured so as to minimise loss of material in flood or rainfall events. Stockpiles left exposed and undisturbed for longer than 28 days would be stabilised by compaction then either sprayed with suitable tackifier, covered with anchored fabrics, or seeded with sterile grass.				
WM13	A <u>Spoil Management Strategy</u> would be developed prior to the commencement of construction and implemented during construction. The strategy would identify spoil disposal sites and describe the management of spoil on-site and during off-site transport.				
WM14	Where possible and fit for purpose, spoil would be beneficially reused within the project before off-site reuse or disposal options are pursued.				
WM15	Before being transported from construction sites, excavated spoil would be classified in accordance with the <i>Waste Classification Guidelines: Part 1 Classifying Waste</i> (EPA, 2014a) to ensure appropriate reuse or disposal.				
WM16	Feasible and reasonable opportunities for wastewater reuse on-site or for construction purposes would be pursued (such as dust suppression				

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	both in the tunnels and for surface works).				
WM17	Wastewater not used on-site would be discharged into the local stormwater system in accordance with the requirements of an environment protection licence issued for the project.				
WM18	An Unexpected Finds Protocol would be implemented in the event of encountering previously unidentified area(s) or types of contaminated material. Where this happens, all relevant work would cease in the vicinity of the discovery in accordance with a unsuitable spoil management contingency procedure which would be included as part of the Spoil Management Strategy for the project. Relevant works would not recommence until the need for and scope of remedial action(s), if required, is identified in accordance with the requirements of the <i>Contaminated Land Management Act 1997</i> .				
OPWM01	Wastes would be managed and disposed of in accordance with relevant State legislation and government policies including the POEO Act, <i>Waste Avoidance and Resource Recovery Act 2001</i> , <i>Waste Avoidance and Resource Recovery Strategy 2014-2021</i> (EPA, 2014b), and the sustainable procurement objective of the <i>WestConnex sustainability strategy</i> (WestConnex Delivery Authority, 2015).				
OPWM02	Opportunities for reuse of wastewater would be considered in preference to discharge to the local stormwater system.				
OPWM03	In order to reduce demand on local water supplies, options would be investigated for providing water required for operation of the deluge system from wastewater produced through the tunnel drainage system where it meets appropriate quality parameters.				
Climate change and risk adaptation					
CC01	The risk associated with future climate change on the project would be further considered during detailed design.				
CC02	Implement adaptation measures to address high and extreme rated risks identified in the subsequent detailed climate change risk assessment.				
CC03	Where extreme, high or medium risks have been identified in this assessment or subsequent climate change risk assessments, a review of the existing design policies, specifications or practices would be undertaken to consider the impacts of climate change.				

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Hazard and risks					
HR01	Site-specific hazard and risk management measures would be included within the CEMP, which may include items such as: <ul style="list-style-type: none"> • Details of the hazards and risk associated with construction activities for both surface and subsurface works • Procedures to comply with legislative and industry standard requirements • Contingency plans, as required. 				
HR02	Storage of dangerous goods and hazardous materials would occur in accordance with suppliers' instructions and relevant Australian Standards and may include bulk storage tanks, chemical storage cabinets / containers or impervious bunds.				
HR03	Storage, handling and use of dangerous goods and hazardous substances would be in accordance with the <i>Work Health and Safety Act 2011</i> and the <i>Storage and Handling of Dangerous Goods Code of Practice</i> (WorkCover NSW, 2005).				
HR04	Secure, bunded areas would be provided around storage areas for oils, fuels and other hazardous liquids.				
HR05	Bunds would be provided around activities such as vehicle refuelling, servicing, maintenance or wash- down, where there is a potential for spills and contamination.				
HR06	Material Safety Data Sheets would be obtained for dangerous goods and hazardous substances stored onsite prior to their arrival.				
HR07	Transport of dangerous goods and hazardous substances would be conducted in accordance with relevant legislation and codes, including the <i>Dangerous Goods (Road and Rail Transport) Regulation 2014</i> and the Australian Code for the <i>Transport of Dangerous Goods by Road and Rail</i> (National Transport Commission, 2008).				
HR08	The project would be constructed in line with Civil Aviation Safety Authority requirements, to the satisfaction of the Secretary of the Commonwealth Department of Infrastructure and Regional Development.				
HR09	The project would be constructed in in accordance with the requirements of the Civil Aviation Safety Authority and the <i>Sydney Airport Master Plan 2033</i> , with respect to lighting used during construction.				
OpHR01	The fire and safety systems and measures adopted for the project would be equivalent to or exceed the fire safety measures recommended by				

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	NFPA502 (American), PIARC (European), AS4825 (Australian) and Roads and Maritime standards.				
OpHR02	Storage of dangerous goods and hazardous materials would occur in accordance with supplier's instructions and relevant Australian standards and may include bulk storage tanks, chemical storage cabinets / containers or impervious bunds.				
OpHR03	Storage, handling and use of dangerous goods and hazardous substances would be in accordance with the <i>Work Health and Safety Act 2011</i> and the <i>Storage and Handling of Dangerous Goods Code of Practice</i> (WorkCover NSW, 2005).				
OpHR04	Secure, bunded areas would be provided around storage areas for oils, fuels and other hazardous liquids. Impervious bunds would be of sufficient capacity to contain at least 110 per cent of the volume of the largest stored container.				
OpHR05	Bunds would be provided around activities such as vehicle refuelling, servicing, maintenance or wash- down, where there is a potential for spills and contamination.				
OpHR06	Material Safety Data Sheets would be obtained for dangerous goods and hazardous substances stored onsite prior to their arrival.				
OpHR07	The transport of dangerous goods and hazardous substances would be prohibited through the main alignment tunnels and on and off-ramp tunnels.				
OpHR08	An Incident Response Plan would be developed and implemented in the event of an accident or incident.				
OpHR09	The response to incidents within the motorway would be managed in accordance with the memorandum of understanding between Roads and Maritime and the NSW Police Service, NSW Rural Fire Service, NSW Fire Brigade and other emergency services.				
OpHR10	The detailed design of the project substations would ensure that the exposure limits for the general public suggested by the Draft Radiation Standard (<i>Australian Radiation Protection and Nuclear Safety Agency, 2006</i>) would not be exceeded at the boundary of the substation sites.				
OpHR11	The project would be operated in line with Civil Aviation Safety Authority requirements, to the satisfaction of the Secretary of the Commonwealth Department of Infrastructure and Regional Development.				
OpHR12	Aviation hazard lighting, building lighting and surface road lighting would be designed and operated in accordance with the requirements of the Civil Aviation Safety Authority and the <i>Sydney Airport Master Plan 2033</i> .				

Ref	Requirement	Timing	Responsibility	Compliance status	Comment / evidence
Cumulative impacts					
CI01	Consultation would be undertaken with local communities potentially affected by the impacts of multiple projects in addition to the project.				
CI02	Where relevant, consultation would be undertaken with proponents of other nearby developments to increase the overall awareness of project timeframes and impacts.				