# Construction Compliance Report: 28 November 2018 – 28 May 2019

M4-M5 Link Mainline Tunnels





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## **Document Control**

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## Internal review

	Name	Position	Date	Signed/Authorised
Originator(s)		Environmental Compliance Coordinator	16/2/19	
Review		Environment & Sustainability Manager	10/7/19	
Authorised		Project Director	1611/19	

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# Abbreviations/Glossary

Abbreviation	Expanded text
AA	Acoustic Advisor
ACHMP	Aboriginal Cultural Heritage Management Sub-Plan
AQMP	Air Quality Management Sub-Plan
CCR	Construction Compliance Report
СЕМР	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Monitoring Program
CSSI	Critical State Significant Infrastructure
СоА	Conditions of approval
CTEAP	Compliance Tracking and Environmental Audit Program
DDMP	Depositional Dust Monitoring Program
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	NSW Environment Protection Authority
Environmental Representative (ER)	A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
FFMP	Flora and Fauna Management Sub-Plan
GMP	Groundwater Management Sub-Plan
GWMP	Groundwater Monitoring Program
HV	Heavy Vehicle
Incident	An occurrence or set of circumstances that causes, or threatens to cause, material harm to the environment, community or any member of the community, being actual or potential harm to the health or safety of human beings or to threatened species, endangered ecological communities or ecosystems that is not trivial.
ISO	International Organisation for Standards
LSBJV	Lendlease Samsung Bouygues Joint Venture
Minister, the	Minister of the NSW Department of Planning and Environment (or delegate)

Abbreviation	Expanded text
NAHMP	Non-Aboriginal Heritage Management Sub-Plan
NCA	Noise Catchment Area
Non-conformance	Failure to conform to the requirements of Project system documentation including this CEMP or supporting documentation.
NSW	New South Wales
NZS	New Zealand Standard
NVMP	Noise and Vibration Management Sub-Plan
OOHW	Out of hours works
PBR	Pyrmont Bridge Road civil and tunnel site
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
PREW	Parramatta Road East and West civil sites
Project, the	M4-M5 Link Mainline Tunnels
Roads and Maritime	Roads and Maritime Services
SPIR	Submissions and Preferred Infrastructure Report
SSTV	Site Specific Trigger Value
SSWMP	Soil and Surface Water Management Sub-Plan
SWQMP	Surface Water Quality Monitoring Program
TDS	Total Dissolved Solids
TTAMP	Traffic, Transport and Access Management Sub-Plan
VMP	Vehicle Movement Plan
WCX	WestConnex M4-M5 Link
WMP	Waste Management Sub-Plan

## **1** Introduction

#### 1.1 Background

WestConnex is one of the NSW Government's key infrastructure projects which aims to ease congestion, create jobs and connect communities. The 33-kilometre WestConnex motorway will link Sydney's west and south-west with the Sydney Central Business District, Sydney Airport and Port Botany. WestConnex is one component of an integrated solution to meet Sydney's growing transport and infrastructure needs and is consistent with NSW Government transport and planning policies and strategies.

The project was declared by Ministerial Order to be State Significant Infrastructure (SSI) and Critical State Significant Infrastructure (CSSI), under Section 5.12 (4) and Section 5.13 (previously referred to as 115U(4) and 115V prior to amendment of the *Environmental Planning and Assessment Act 1979* (EP&A Act)) as well as under clause 16 of the State Environmental Planning Policy (State and Regional Development) 2011. The project remains subject to assessment under the EP&A Act and requires the approval of the NSW Minister for Planning. The proposal is critical State significant infrastructure by virtue of Schedule 5, clause 4 of State Environmental Planning Policy (State and Regional Development) 2011.

An Environmental Impact Statement (EIS) (AECOM 2017) was prepared and placed on public exhibition from 18 August 2017 to 16 October 2017. Submissions were received from government, agencies, organisations and the public in repose to the project. A Submissions and Preferred Infrastructure Report (SPIR) was prepared by Roads and Maritime in response to submissions received during the exhibition period. The Project was approved by the Minister for Planning on 17 April 2018.

Subsequently, a Project Modification report (AECOM, September 2018) was prepared and placed on public exhibition for 14 days from 12 September 2018. The Project Modification was approved by the Minister for Planning on 25 February 2019 and the Minister's conditions of approval were also modified

#### 1.2 Project Description

The WestConnex M4-M5 Link project is being constructed in two stages:

- Stage 1 (the Project and subject of this document): M4-M5 Link Mainline tunnels
- Stage 2: Rozelle interchange.

WestConnex (WCX) has engaged Lendlease Samsung Bouygues Joint Venture (LSBJV) to design and construct Stage 1 of the project. The key features of the Mainline tunnel project include:

- Twin mainline motorway tunnels between the M4 East at Haberfield and the New M5 at St Peters. Each tunnel would be around 7.5 kilometres long and would generally accommodate up to four lanes of traffic in each direction
- Connections of the mainline tunnels to the M4 East project, comprising:
  - A tunnel-to-tunnel connection to the M4 East mainline stub tunnels east of Parramatta Road near Alt Street at Haberfield
  - Entry and exit ramp connections between the mainline tunnels and the Wattle Street interchange at Haberfield (which is currently being constructed as part of the M4 East project)
  - Minor physical integration works with the surface road network at the Wattle Street interchange including road pavement and line marking

- Connections of the mainline tunnels to the New M5 project, comprising:
  - A tunnel-to-tunnel connection to the New M5 mainline stub tunnels north of the Princes Highway near the intersection of Mary Street and Bakers Lane at St Peters
  - Entry and exit ramp connections between the mainline tunnels and the St Peters interchange at St Peters (which is currently being constructed as part of the New M5 project)
  - Minor physical integration works with the surface road network at the St Peters interchange including road pavement and line marking
- Construction of tunnel stubs to provide for future underground connection of the mainline tunnels to the Rozelle interchange and Iron Cove Link
- A motorway operations complex at St Peters (Campbell Road) (MOC5). The types of facilities that would be contained within the motorway operations complexes would include substations, water treatment plants, ventilation facilities and outlets (the Campbell Road ventilation facility), offices, on-site storage and parking for employees
- Tunnel ventilation systems, including ventilation supply and exhaust facilities, ventilation fans, ventilation outlets and ventilation tunnels
- Fitout (mechanical and electrical) of part of the Parramatta Road ventilation facility at Haberfield (which is currently being constructed as part of M4 East project) for use by the M4-M5 Link project
- Drainage infrastructure to collect surface and groundwater for treatment at dedicated facilities
- Water treatment would occur at the operational water treatment facility at the Campbell Road motorway operations complex (subject to future Modification)
- Ancillary infrastructure and operational facilities for electronic tolling and traffic control and signage (including electronic signage)
- Emergency access and evacuation facilities, including pedestrian and vehicular cross and long passages and fire and life safety systems
- Utility works, including protection and/or adjustment of existing utilities, removal of redundant utilities and installation of new utilities
- Temporary construction ancillary facilities to facilitate construction of the project at the following locations:
  - Northcote Street civil and tunnel site (C3a), Haberfield
  - Haberfield civil site (C2b), Haberfield
  - Parramatta Road East civil site (C3b), Haberfield
  - Parramatta Road West civil site (C1b), Ashfield
  - Wattle Street civil and tunnel site (C1a), Haberfield
  - Pyrmont Bridge Road tunnel site (C9), Camperdown/Annandale
  - Campbell Road civil and tunnel site (C10), St Peters
  - White Bay civil site (C11), Rozelle.

An overview of the project footprint and ancillary facilities is presented in the Construction Environmental Management Plan (CEMP). Further detail of the project description is presented in Section 1.3 of the CEMP.

### 1.3 Purpose of this report

This Construction Compliance Report (CCR) has been prepared to address Minister's Condition of Approval (CoA) A33 of the planning approval.

This CCR documents compliance for the reporting period for all works undertaken on the WestConnex M4-M5 Link Mainline Tunnels from 28 November 2018 to 28 May 2019.

As part of the Compliance Tracking and Environmental Audit Program (CTEAP), this CCR has been prepared in accordance with CoA A33 (refer to Table 1-1) and as a provision to report on the compliance status of the Project for six months following the commencement of construction.

Table 1-1 CoA requirements for this CCR

CoA no.	Requirement	Reference
A33	Construction Compliance Reports must be prepared and submitted to the Secretary for information every six (6) months from the date of the commencement of construction for the duration of construction. The Construction Compliance Reports must include:	This Document
	<ul> <li>(a) a results summary and analysis of environmental monitoring;</li> </ul>	Section 5
	(b) the number of any complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints;	Section 4.5
	<ul> <li>(c) details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;</li> </ul>	Section 2.4
	<ul> <li>(d) a register of any consistency assessments undertaken and their status;</li> </ul>	Section 2.3.1
	<ul> <li>(e) results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit;</li> </ul>	Section 4.4
	(f) a summary of all incidents notified in accordance with Conditions A40 and A42 of this approval; and	Section 4.1
	(g) any other matter relating to compliance with the terms of this approval or as requested by the Secretary.	Sections 3, 4.2 and 4.3

# 2 Project Delivery

### 2.1 Staging

As stated in the EIS Chapter 6 (Construction work) and previously in Section 1.2, the M4-M5 Link Project will be constructed and opened to traffic in two stages.

Stage 1 can be summarised to include:

- Construction of mainline tunnels between the M4 East at Haberfield and the New M5 at St Peters, stub tunnels to the Rozelle interchange (at the Inner West subsurface interchange) and ancillary infrastructure at Campbell Road motorway operations complex (MOC5)
- These works commenced in 2018 with the mainline tunnels open to traffic in 2023. At the completion of Stage 1, the mainline tunnels would operate with two traffic lanes in each direction. This would increase to generally four lanes at the completion of Stage 2, when the full project is operational.

Stage 2 can be summarised to include:

- Construction of the Rozelle interchange including:
  - Connections to the stub tunnels at the Inner West subsurface interchange (built during Stage 1)
  - Ancillary infrastructure at the Rozelle West motorway operations complex (MOC2), Rozelle East motorway operations complex (MOC3) and Iron Cove Link motorway operations complex (MOC4)
  - Connections to the surface road network at Lilyfield and Rozelle
  - Construction of tunnels, ramps and associated infrastructure as part of the Rozelle interchange to provide connections to the proposed future Western Harbour Tunnel and Beaches Link project
- Stage 2 works are expected to commence in 2019 with these components of the project open to traffic in 2023.

The total construction period for the Project is programmed to occur across five years, which includes commissioning that would occur concurrently with the final stages of construction.

A more detailed description of how the Project would be constructed is provided in Chapter 6 (Construction work) of the EIS.

WCX has engaged LSBJV to design and construct Stage 1 of the Project. The key objective of this CTEAP is to track compliance with the requirements of the CoA relevant to Stage 1 of the Project during the construction and early stages of operation.

The LSBJV, Roads and Maritime and WCX together are responsible for compliance with the requirements of the CoA. However, LSBJV will be responsible for maintaining the CTEAP for the Project and for the preparation of six-monthly Construction Compliance Reports throughout construction as required by CoA A33.

## 2.2 Timing

Construction on the Project began in late November 2018 and will continue until Q1 of 2023. Key aspects of the construction program include:

- Site establishment commenced late 2018
- Tunnel construction commenced Q1 2019
- Mechanical and electrical fitout work to commence Q2 2021
- Testing and commissioning to commence Q4 2022.
- Project to open Q1 2023

#### 2.3 Planning Approvals

#### 2.3.1 Consistency Assessments

A total of four consistency assessments were determined by Roads and Maritime under the CSSI project planning approval during the reporting period. An additional five consistency assessments are awaiting determination and one is no longer required by the Project.

A register of consistency assessment during the reporting period is provided in Table 2-1.

#### Table 2-1 Consistency Assessment Register

Title	Status	Date Determined
Site Access changes at the Parramatta Road East & West and Campbell Road Ancillary Facilities (CA01)	Determined Consistent	11/12/2018
Site Access changes at Pyrmont Bridge Road Ancillary Facility (CA02)	Determined Consistent	14/03/2019
Pyrmont Bridge Road and Campbell Road Heavy Vehicle Numbers (CA03)	Awaiting Determination	
Horizontal and Vertical Tunnel Alignment Refinements (CA04)	Determined Consistent	23/05/19
Site boundary changes at the Campbell Road civil and tunnel site (CA05)	Awaiting Determination	
White Bay Satellite Parking Facility (CA06)	Not Required	
Campbell Road Civil and Tunnel Site – Acoustic Mitigation (CA10)	Determined Consistent	1/05/2019
Groundwater pump test (CA11)	Awaiting Determination	
Pyrmont Bridge Road Tunnel Site – Spoil Haulage Vehicle Temporary Access and Egress Locations and Route (CA14)	Awaiting Determination	
Wattle Street Civil and Tunnel Site Additional Land (CA17)	Awaiting Determination	

#### 2.3.2 Project Modification

Since Planning Approval was received on 17 April 2018, a Project Approval Modification (MOD 01) was submitted by Roads and Maritime to the Department of Planning, Industry and Environment (DPIE) and approved 25 February 2019.

The changes to the Project as a result of MOD 01 approval are summarised in Table 2-2. Subsequent CEMP amendments as a result of MOD01 approval are discussed in Section 2.4 below.

Table 2-2 Changes to construction	ancillary facilities
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EIS and SPIR	Proposed modification
Northcote Street civil site (C3a)	Northcote Street civil and tunnel site.
	Includes tunnelling, spoil handling and spoil haulage from this site
Parramatta Road West civil and tunnel site	Parramatta Road West civil site
(C1b)	Includes change of use to civil site.
	Inclusion of a temporary pedestrian walkway above Parramatta Road to link to the Parramatta Road West civil site.
Parramatta Road East civil site (C3b)	Inclusion of a temporary pedestrian walkway above Parramatta Road to link to the Parramatta Road West civil site.
Darley Road civil and tunnel site (C4)	Removal of site
Campbell Road civil and tunnel site (C10)	Relocation of the operational water treatment plant from Darley Road to the Campbell Road motorway operations complex at the St Peters Interchange.

#### 2.4 Construction Environmental Management Plan Reviews / Amendments

Table 2-3 details the CEMP reviews and amendments during the reporting period.

#### Table 2-3 CEMP reviews and amendments

Relevant Plan	Review / Amendment	Revision No.	Approval Date
CEMP Main Body	Minor administrative change to update site establishment activities to include use of the existing M4 East Project offices and amenities at Northcote St. Submitted to Environmental Representative (ER) for approval.	10	25/02/2019
	Review and update following determination of Project MOD 1. Submitted to DPIE for approval.	11	14/03/2019

Relevant Plan	Review / Amendment	Revision No.	Approval Date
Traffic, Transport &	Review and update following determination of Project MOD 1. Changes including tunnelling from Northcote with restrictions on spoil haulage routes leaving site. Submitted to DPIE for approval.	17	14/03/2019
Plan (TTAMP)	Minor change related to temporary access/egress and spoil haulage routes submitted to ER for approval.	18	20/03/2019
Noise & Vibration Sub-	Review and update to allow tunnelling of EIS alignment to commence from Northcote St and Wattle St sites for specific sections of the alignment and following determination of Project MOD 1. Submitted to DPIE for approval.		14/03/2019
Plan (NVMP)	Update to include EIS tunnelling alignment from PBR and SPI, and the inclusion of a new Noise Catchment Area (NCA 56). Submitted to DPIE for approval.	15	8/05/2019
Flora & Fauna Sub-Plan (FFMP)	Minor updates following determination of Project MOD 1. Submitted to ER for approval.	06	4/03/2019
Air Quality Sub- Plan (AQMP)	Review and update following determination of Project MOD 1 including a Dust Depositional Monitoring Program (DDMP). Submitted to DPIE for approval.		14/03/2019
Soil & Surface	Minor updates following determination of Project MOD 1. Submitted to ER for approval.	05	4/03/2019
Water Sub-Plan (SSWMP)	Minor update to surface water monitoring locations in response to safety and access issues. Submitted to ER for approval.	06	3/05/2019
Groundwater Sub-Plan (GMP)	Minor updates following determination of Project MOD 1. Submitted to ER for approval.	08	14/03/2019
Non-Aboriginal Heritage Sub-	Minor change following outcomes of investigations of the former Bank of NSW submitted to ER for approval.	05	20/11/2019
Plan (NAHMP)	Minor updates following determination of Project MOD 1. Submitted to ER for approval.	07	4/03/2019
Aboriginal Cultural Heritage Sub- Plan (ACHMP)	Minor updates following determination of Project MOD 1. Submitted to ER for approval.	05	4/03/2019

Relevant Plan	Review / Amendment	Revision No.	Approval Date
Waste Management Sub-Plan (WMP)	Minor updates following determination of Project MOD 1. Submitted to ER for approval.	07	4/03/2019

# 3 Compliance Management

LSBJV, Roads and Maritime and WCX are together responsible for compliance with the Project's requirements detailed in the CoA. Refer to the CTEAP for further information on how LSBJV manages and tracks compliance with the planning approval throughout construction.

A variety of activities are undertaken to ensure that compliance is managed effectively on the Project. These compliance management activities are summarised in Table 3-1.

Table 3-1	Compliance	Management	Activities
	•••mpmanee	management	

Activity	Responsibility	Frequency
Ongoing site surveillance	LSBJV	Daily
Site Inspections	LSBJV Environmental Representative (ER)	Weekly Fortnightly
Environmental compliance status update	LSBJV	As required
Environmental risk assessment review	LSBJV	Annual
Environmental auditing	LSBJV Independent Auditor	Six-monthly Annual
	ER	As requested by Secretary
Environmental management reviews	LSBJV	Six-Monthly CEMP Reviews

Following Project planning approval, compliance with the requirements contained in the CoA are regularly monitored by the LSBJV.

Regular meetings are held with the relevant Project CoA delivery owners to review applicable requirements and assess the environmental compliance status. These meetings allow LSBJV to ensure ongoing compliance. Where requirements are deemed to be compliant, evidence is collected and verified by LSBJV.

#### 3.1 Construction Environmental Management System

The environmental management system (EMS) is the primary system to manage and control the environmental aspects of the Project during early works, site establishment 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 LSBJV EMS is based on the Lendlease Engineering ISO14001 Certified EMS (see Appendix A), which was adapted to address Project and joint venture requirements.

The CEMP is the primary system to manage and control the environmental aspects of the Project during construction. It also provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled.

The strategies defined in the CEMP have been developed with consideration of the Project approval requirements, safeguards and mitigation measures presented in the environmental assessment and approval documents. The CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the Project on the environment.

The CTEAP is part of a suite of environmental management documents prepared for the Project. The CTEAP will be administered by the Environment and Sustainability Manager or delegate for the duration of the Project.

# 4 Compliance Performance

#### 4.1 Incidents

In accordance with CoA A40 to A43, incidents which cause or threaten to cause material harm to the environment, community or health and safety will be notified to the Environment Protection Agency (EPA) and Secretary. Actual and potential material harm incidents during the reporting period are detailed in Table 4-1.

All incidents reported to the Secretary and EPA to date have been as a courtesy rather than a statutory trigger.

Table 4-1	Material Harm	Incidents	during the	e reporting	neriod
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Incident Type	Description	Site	Immediate Actions / Control Measures	Corrective Actions
Nil	Nil	Nil	Nil	Nil

A total of 23 incidents were reported across the Project during the reporting period. The three most frequent incident issues were Spills (eight), Traffic (seven) and Procedural (four). Refer to Figure 4-1 for a breakdown of the incidents by issue.



Figure 4-1 Environmental Incidents by Type

#### 4.1.1 Spills

During the reporting period, spills comprised 35% of all incidents (refer to Figure 4-1) and involved minor spills which were immediately contained, cleaned up and disposed of appropriately. Subsequent toolboxes were run at the relevant site on topics including the Project refuelling procedure, importance of drain protection, chemical use, and plant inspection and maintenance.

## 4.1.2 Traffic

Traffic incidents comprised 30% of incidents (refer to Figure 4-1) and predominately involved heavy vehicles using non-approved local roads to access site. These were recorded as non-conformances against the Project TTAMP. In response to these incidents, a Project-wide

management response was rolled out to ensure compliance with TTAMP. Details of this response are presented in Section 4.2.

#### 4.1.3 Procedural

Procedural incidents comprised 17% of incidents (refer to Figure 4-1) and mostly involved human error around completing the required documentation or notifying within prescribe timeframes. Toolbox sessions were delivered to the relevant teams on Project documentation requirements for specific activities such as Tree Clearing.

### 4.2 Non-Conformances

A total of 11 non-conformances (NCRs) were identified during the reporting period. These nonconformances were against the requirements of the CEMP and its sub-plans. Refer to Table 4-2 for a breakdown of non-conformances by the most relevant Project document.

Project Document	No. of NCRs	Description
		Non-conformance against the Clearing and Grubbing Procedure. Seven exotic trees permitted to be cleared under the Project approval were removed without a formal Pre-Clearing Permit.
FFMP	1	These trees were identified as suitable for clearing with no habitat features identified in the initial Ecologist Inspection. This was confirmed again by the Project Ecologist following the clearing.
		The remainder of clearing was undertaken the supervision of an Arborist and under an approved Pre-Clearing Permit.
	2	Failure to notify the ER of an unexpected contamination find. This was a procedural breach only with no environmental impact.
	Z	Failure to report a complaint to the EPA within the required timeframe. This was a procedural breach only with no environmental impact.
TTAMP	7	Project heavy vehicles (HVs) use of local roads instead of the approved routes for accessing site, predominantly around the Haberfield sites
NVMP	1	Early arrival of spoil haulage vehicles to site before the start of approved construction working hours (i.e. 7:00 am). Trucks were brought onto site to minimise potential impact to adjacent receivers. Project works did not commence until after 7:00 am. Incident reported to the EPA.

Table 4-2 Non-Conformances against the Project Documents

#### 4.2.1 TTAMP

Non-conformances against the TTAMP were the most frequently recorded (seven) with Project HVs failing to conform with the approved site access and egress routes. To address these non-conformances and reduces the risk of Project vehicles on local roads, LSBJV have implemented a range of measures to ensure compliance with the Project site access route requirements. These measures are discussed below and included:

- Development of training materials
- Update of Vehicle Movement Plans (VMPs)
- A signage strategy

#### 4.2.1.1 Supplier Training

An assessment was run by the LSBJV Procurement and Finance teams to identify the suppliers which represent the most deliveries on the Project. While these suppliers are provided with Project VMPs as part of our contracts and purchase orders, targeted face to face training was delivered on LSBJV's expectations in relation to site deliveries. The key Project suppliers trained on the requirements of the TTAMP and complying with the VMPs are detailed in Table 4-3.

#### Table 4-3 Suppliers Trained in response to TTAMP Non-Conformances

Supplier / Contractor	Product / Service Provided	Date of Training
Jaybro	Safety Equipment	17/04/2019
Komatsu	Excavators, Dump Trucks, Wheel Loaders and spare parts	7/05/2019
Toyota Mistui	Roadheaders	8/05/2019
Sandvik	Roadheaders	20/05/2019
DSI Underground	Rock Bolts	22/05/2019
HMI	Roadhead Consumables	22/05/2019
Blackwoods	Industrial Supplies and Safety	22/05/2019
Outback Workwear	Personal Protective Equipment (PPE)	29/05/2019
Bingo	Waste Management	Awaiting Confirmation

#### 4.2.1.2 VMP Review and Update

LSBJV held an internal workshop to review and update the Project VMPs to ensure they are as effective as possible. As a result, the VMPs for each site were updated to assist in the elimination of Project HVs on non-approved local roads. Ongoing compliance with the TTAMP would minimise potential community impacts.

The following statement has also been added to all VMPs: 'Adherence to this VMP is mandatory. Deviation from this plan may find you personally liable for regulatory action from the Department of Planning and Environment'.

These VMP updates were also well-received by the Environmental Representative (ER), Roads and Maritime and WCX. Feedback from these parties were incorporated into the VMPs.

The most current VMP for the reporting period is included in Appendix B.

#### 4.2.1.3 Concrete Specific VMP

Two of the traffic incidents which occurred in the reporting period involved the concrete supplier Hanson. In response to this, a specific VMP from the Hanson batch plant to the Project sites was developed to ensure correct use of the approved road network and compliance with the TTAMP. This Hanson -specific VMP is included in Appendix B.

A contractual letter was also issued Hanson advising them of the breach of the VMP and requested that Hanson compete the following:

- Reiterate to Hanson's drivers the haul routes noted in the Vehicle Management Plan;
- Ensure their drivers aware that there are significant consequences for non-conformance to the haulage Plan; and
- Advise how and when Hanson would roll out required communication above.

A supplier audit on Hanson by the LSBJV Quality team is also scheduled for June 2019 to confirm the measures committed to by Hanson are being fulfilled.

#### 4.2.1.4 Signage Strategy

An initiative that was used successfully on the NorthConnex and the Hornsby Quarry Project was the use of wayfinding signage for HV drivers.

Similarly, LSBJV has developed a wayfinding signage strategy to minimise the risk of Project vehicles using non-approved roads. The strategy and placement of signage considers both positive and negative signage reinforcement. This includes positive signage arrow signs to confirm the correct route for drivers to follow, and then a negative do not enter sign will be placed at the entrance of a local road.

This signage will help assist drivers to adhere to the approved VMPs, not use local roads to access Project sites and comply with the TTAMP.

#### 4.2.1.5 Spoil Haulage Vehicles

While no incidents have involved spoil haulage vehicles during the reporting period, LSBJV updated the VMPs for spoil haulage consistent with the workshop findings. Spoil Haulage VMPs are included in Appendix B.

#### 4.3 Environmental Representative Inspections

The Project Environmental Representative (ER) conducted 12 environmental inspections and raised 47 issues and 37 positive findings during the reporting period. Figure 4-2 provides a breakdown of issue type raised during the fortnightly ER inspections.

ER inspections are assigned a Road and Maritime 'traffic light' status as an indicator of the overall environmental performance and effectiveness of site management measures.

Table 4-4 provides definitions of the different Roads and Maritime inspection statuses. During the reporting period, the Project received 11 'Green' inspection results and one 'Amber' (refer to

Table 4-5).



Figure 4-2 ER Inspection Issues by Type

<b>Table 4-4 Roads and Maritime Environment Inspectio</b>	n Status
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Status	Definition
Red	<ul> <li>Actions required to address urgent risk issues.</li> <li>Satisfactory actions not taken for high risk issues identified on the previous inspection.</li> <li>A Category 1 incident has been identified during the inspection.</li> </ul>
Amber	<ul> <li>Actions required to address high and/or medium risk issues.</li> <li>Satisfactory actions not taken for previous medium or low risk issues on the previous inspection.</li> </ul>
Green	<ul> <li>Actions required to address low risk issues that will not directly cause environmental harm.</li> <li>Site demonstrates good environmental management with no action required to avoid environmental harm.</li> </ul>

#### Table 4-5 ER Inspection Status during the Reporting Period

ER Inspection Results												
Roads and Maritime Traffic Light Indicator	Х	Х	Х	Х	Х	X	Х	Х	Х	Х	Х	Х
ER Inspection Date	6-Dec-18	19-Dec-18	10-Jan-19	24-Jan-19	7-Feb-19	21-Feb-19	7-Mar-19	21-Mar-19	4-Apr-19	18-Apr-19	2-May-19	16-May-19

#### 4.4 Environmental Audits

An independent environmental audit was undertaken on the Project on the 29 and 31 May 2019. The audit examined the Project's compliance to date against the CEMP, NAHMP and FFMP. A site inspection at the Campbell Road civil and tunnel site was also undertaken.

This audit resulted in three preliminary findings which are summarised in Table 4-6. Findings include any items raised during an audit that are categorised in accordance with the NSW Department of Planning Audit Guidelines. Refer to Table 4-7 for definitions of finding categories.

Two audit findings remain open and will be closed within the next reporting period. Close out responses will be documented in subsequent CCR.

Compliance Document Ref.	Finding	Category	Status
CEMP Section 3.7.2	Section 3.7.2 of the CEMP requires that "In accordance with the Roads and Maritime Specification G36, a report will be prepared on each occasion a Project site is visited by EPA, and the Roads and Maritime will be immediately notified. The report will be provided to Roads and Maritime within one working day of the visit"	Non- Conformance	Closed
	Evidence could not be provided to demonstrate that Roads and Maritime were notified immediately or that a report was prepared for the two EPA site visits to date that occurred on 14 and 16 May 2019.		
NAHMP Section 7.3.3 CoA E163, E164	Whilst items from the former Bank of NSW Building at 164 Parramatta Road Annandale have been salvaged in accordance with CoA E163 and E164 and are stored securely, the items have not been recorded in a register or similar document.	Observation	Open
	As an improvement opportunity, LSBJV should consider developing a register which identifies each item salvaged against the exact location held/numbering/labelling to ensure traceability.		
Site Inspection	At the time of the audit, the rumble grid was damaged and undergoing repairs. This should be reinstated as soon as possible.	Observation	Open

#### Table 4-7 Audit finding categories

Finding Category	Definition
Non-compliance	The intent or one or more specific requirements of the Condition of Approval have not been met. Non-compliances will require verification of adequate corrective action by the independent auditor within 6 weeks of the audit.
Non-conformance	Failure to implement and/or maintain conformance to the requirements of the Management Plans or other project management system documents relevant to the scope of the audit. Non-conformances will require verification of adequate corrective action by the independent auditor within 6 weeks of the audit.
Administrative non- compliance	A technical non-conformance with a condition of the consent that would not impact on the environmental performance and that is considered minor in nature (e.g. – report submitted but not on the due date). This would not apply to performance related aspects (e.g. – exceedance of a noise limit) or where a condition had not been met at all (e.g. noise management plan not prepared and submitted for approval at all).
Observation	An observation made or opportunity for improvement identified during the audit that could assist in the improvement of environmental performance on the project.

## 4.5 Complaints

The Project received a total of 95 complaints during the reporting period. Of these, 12 were identified as not related to the Project but were still investigated and logged.

Refer to Figure 4-3 for a breakdown of the complaints by month and issue. The number of complaints received has increased in line with the extent of the Project works.

Of the 83 Project-attributed complaints received, the three most frequent complaint issues were noise (16%), trucks on local roads (15%) and communication (14%). Responses to these complaint issues are discussed in Section 4.5.1.



Figure 4-3 Project-attributed Complaints Received by Month and Issue

#### 4.5.1 Complaint Management

#### 4.5.1.1 Noise

Noise related complaints were received about the following works:

- Geotechnical investigation work sites
- Demolition at the Pyrmont Bridge Road site and the Parramatta Road East and West sites
- Tunnelling work at the Northcote Street tunnelling site
- Tunnelling work at the Campbell Road civil and tunnel site

Actions taken to address the issues raised included:

- Implementing respite periods for high impact work and on-site mitigation measures such as noise blankets
- Toolboxing work crews on noise mitigation measures and project expectations
- Clarifying extents, durations and approval of work activities to residents
- Agreeing to provide additional regular updates on work progress
- Offering and carrying out noise monitoring to validate predicted and actual impacts
- Agreeing to provide residents with specific circumstances additional notice of high impact work (e.g. advise a parent that has a 4-month-old baby before hammering work)

#### 4.5.1.2 Heavy Vehicles on Local Roads

Complaints about HVs using local roads were received mostly in the Haberfield and Ashfield area, around the Parramatta Road East and West sites and Northcote St site.

One incident involved a truck causing damage to a large tree. Multiple complaints were also received where residents were unaware that spoil trucks could use Ramsay Road until the G-loop was operational or as an alternative when the G-loop is closed.

Actions taken to address issued raised included:

- Clarifying approved spoil haul routes with the community
- Reviewing and updating VMPs for suppliers (as discussed in Section 4.2.1.2)
- Issuing warning letters to repeat offenders and other disciplinary actions, for example Hanson (as discussed in Section 4.2.1.3)
- Toolboxing subcontractors and suppliers on Project requirements and expectations (as discussed in Section 4.2.1.1)
- Providing toolbox materials to subcontractors and suppliers for internal distribution and driver toolboxing (as discussed in Section 4.2.1.1)
- Temporarily standing down a supplier for not following delivery instructions
- Investigating options with the Local Council to install temporary directional signage at some intersections ensure vehicle route compliance and redirect heavy vehicles off local roads (as discussed in Section 4.2.1.4)

#### 4.5.1.3 Communication

Communication-related complaints covered the following items:

- Residents claiming, they have not been advised the tunnel is under their property
- Residents advising, they were not aware of specific work activities occurring such as demolition work at Parramatta Road East and West sites or geotechnical worksites
- Quality of specific notification issued
- Extent of specific notification distribution

Actions taken to address issued raised included:

- Confirming that notifications were issued
- Reviewing distribution areas and where appropriate amending
- Adding people to email distribution lists
- Launching a community engagement and communication survey to better understand community preferences in communication channels/frequency and areas of interest
- Reviewing performance of distribution contractors.

#### 4.5.1.4 Other Complaints

Actions taken to address other issues raised including dust, vibration, air quality, worker behaviour include:

- Deploying additional dust mitigation measures including a sprinkler system
- Temporarily stopping work during windy conditions and ensuring stockpiles are covered
- Using machinery that generates less dust, for example the surface miner at Pyrmont Bridge Road site.

- Proactively contacting nearby receivers to advise of unexpected asbestos finds and explaining asbestos management techniques
- Cleaning up debris blown off site onto adjacent private property
- Reviewing and where appropriate adjusting traffic control set up to address concerns about sight distances and parking impacts
- Advertising local businesses to the large project workforce and encouraging them to use their services
- Offering and carrying out vibration monitoring to validate predicted and actual impacts
- Meeting with residents to further explain work activities, timelines, approvals and mitigation measures
- Installing additional warning signage on approach to worksites
- Advising nearby projects and utility providers of complaints that are related to their work and not the M4-M5 Link Tunnels Project.

# 5 Environmental Monitoring

In accordance with CoA C9, environmental construction monitoring programs have been prepared and implemented on the Project to monitor the following impacts:

- Surface water quality CoA C9(a)
- Groundwater CoA C9(b)
- Noise and Vibration CoA C9(c)
- Dust Deposition CoA C9(e)

#### 5.1 Surface Water Quality

In accordance with the Surface Water Quality Monitoring Program (SWQMP), surface water monitoring was undertaken monthly and quarterly following a wet weather event during the reporting period.

Potential changes in water quality were assessed and a management response initiated if the following occurred:

- A parameter exceeds the site-specific trigger value (SSTV) for two consecutive monthly monitoring events
- A parameter exceeds the SSTV for any single monitoring event by more than 30%
- A parameter downstream exceeds the corresponding parameter upstream for any single monitoring event by more than 20%

On average, downstream monitoring results were within the SWQMP site-specific trigger value (SSTV) limits.

Downstream conductivity (EC) and total dissolved solids (TDS) results often exceeded upstream values by more than 20% in both Dobroyd Canal and Alexandra Canal. This is consistent with historic baseline monitoring results which revealed these waterways are tidally influenced by brackish water and therefore highly variable.

Following a wet weather event (>25 mm in 24 hours) in March 2019, upstream and downstream turbidity (NTU) results from all three waterways exceeded the SSTVs. This increase in NTU is typically observed following large rainfall events. The upstream exceedances suggest impact is occurring upstream and not a result of the Project.

Downstream NTU results from Alexandra canal often exceeded upstream values by more than 20% in Alexandra Canal. This has been attributed to the differing water properties between upstream and downstream points. Upstream samples are taken from the concrete lined stormwater channel. Whereas downstream samples are taken from a natural waterway with a sediment bottom. These locations are also separated by a weir which prevents water moving from the natural canal up into the stormwater channel. No other safe and publicly accessible monitoring locations along the canal are available.

Two upstream SSTV exceedances in pH were observed in Dobroyd Canal, with lower downstream results within criteria limits. This suggests water quality impacts are occurring upstream and not a result of the Project.

While investigations into water quality monitoring results were triggered during the reporting period, no changes in water quality have been attributed to Project works.

#### 5.2 Groundwater

In accordance with the Groundwater Monitoring Program (GWMP), continuous groundwater level and quality (conductivity) monitoring was undertaken on 17 bores following the installation of dataloggers. Prior to logger installation, monthly manual measurements were taken.

Loggers were downloaded, and manual level measurements collected every two months, pending access to each bore.

During the reporting period, the drilling and development of bores for the GWMP was ongoing. As a result, monitoring was only undertaken on completed and operating bores, resulting in different datalogger start dates. Three bores were also yet to be drilled during the reporting period.

Two bores were not available during the reporting period due to safety and access constraints. Two bores also became unavailable due to de-commissioning by the local council. These four bores will be replaced, and data will be reported in subsequent CCRs.

Three vibrating wire piezometers (VWPs) to monitor pore pressure and assess operational groundwater impacts are yet to be installed. It is envisaged that VWP installation will be completed by August 2019 prior to tunnelling in that area.

Tunnelling has the greatest potential to impact on groundwater flows or levels. As tunnelling works were limited during the reporting period, groundwater monitoring results collected are considered a continuation of baseline monitoring.

#### 5.3 Noise and Vibration

In accordance with the Construction Noise and Vibration Monitoring Program (CNVMP), the following noise and vibration monitoring were undertaken during the reporting period:

- Attended and unattended airborne noise monitoring
- Attended and unattended ground-borne noise monitoring
- Real-time unattended noise and vibration monitoring
- Attended and unattended vibration monitoring
- Heritage item vibration monitoring

Table 5-1 provides a summary of the Project-wise noise and vibration monitoring results during the reporting period.

Table 5-1 Noise and Vibration	n Monitoring	<b>Events Summary</b>
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Monitoring Type	Prediction Exceedances	Comments
Attended airborne noise monitoring	2	Based on 80 monitoring events. Two exceedances were attributed to the Project and occurred during out of hours works (OOHW). In both instances, monitoring results were observed above the predicted noise levels. In these instances, works were ceased.
Unattended airborne noise monitoring	0	No activities undertaken with the potential to result in ground-borne noise during the reporting period. Therefore, no monitoring was undertaken.

Monitoring Type	Prediction Exceedances	Comments
Attended vibration monitoring	0	Based on 16 monitoring events.
Unattended vibration monitoring	0	Based on one monitoring event in response to a community complaint.
Heritage item vibration monitoring	0	No vibration generating activities were undertaken with the potential to impact on heritage items during the reporting period. Therefore, no monitoring was undertaken.

Real-time unattended airborne noise and vibration monitoring was undertaken at each of the three tunnelling sites (Campbell Road, PBR and Northcote Street). The locations of the monitors were determined in consultation with the Project's Acoustic Advisor (AA) and access to the monitoring results are available to ER and AA.

#### 5.4 Dust Deposition

In accordance with the Dust Deposition Monitoring Program (DDMP), depositional dust monitoring was undertaken monthly at the following ancillary facilities:

- Northcote Street civil and tunnel site<sup>1</sup>
- Parramatta Road East and West civil sites (PREW)
- Wattle Street civil and tunnel site<sup>1</sup>
- Pyrmont Bridge Road tunnel site (PBR)
- Campbell Road civil and tunnel site

Depositional dust exceedances are assessed against the annual maximum level of 4 g/m<sup>2</sup>/month. Therefore, performance criteria exceedances will be assessed and reported in subsequent CCRs following 12 months of data.

<sup>&</sup>lt;sup>1</sup> Ancillary facility was not available to the Project until March 2019.

# Appendix A Lendlease Engineering ISO 14001 EMS Certificate



# Certificate of Conformity

# Lendlease

Lendlease Engineering ABN: 40 000 201 516

Australian Precast Solutions Pty Ltd ABN: 37 113 220 894

To certify that their

# Environmental Management System

has been assessed and registered as complying with the requirements of ISO 14001:2015 – *Environmental management systems* – *Requirements with guidance for use*.

Scope of works covered by certification and locations Refer to the Certification Schedule for further details.

Certification Number 00061 Issue Date 08/03/2017 Issue Number 12 Period of Registration 06/03/2016 to 06/03/2019

John Edwards, Operations Director dlcs international

Certification is subject to ongoing surveillance assessments The validity of this certificate can be verified at www.jas-anz.org/register

This certificate and certification mark remains the property of dlcs international • www.dlcsi.com.au St Kilda Rd Towers, 1 Queens Road, Level 2, Suite 220-222 Melbourne, VIC 3004



Accredited by the Joint Accreditation System of Australia and New Zealand. Acc. No. M5250513AM



# **Certification Schedule**

# Lendlease

Certification Number 00061

#### Scope of works covered by certification

Construction contracting, construction management, project management and traffic management including as required, the design, construction, operation and maintenance of roads, bridges, civil, building, rail, mining, water supply, water and waste-water treatment plants and property development projects, construction services to the telecommunications and energy industries and the operation of precast concrete manufacturing facilities.

#### At the following locations

Level 14, Tower Three, International Towers Sydney Exchange Place, 300 Barangaroo Avenue, Barangaroo, NSW, 2000 Mt Kuring-gai Plant Facility, 26-32 Beaumont Road, Mt Kuring-gai, NSW, 2080 Australian Precast Solutions, 2 Centra Park Street, Macksville, NSW, 2447 195 Great Eastern Highway, Belmont, WA, 6104 Kings Gate, 2 King Street, Bowen Hills, QLD, 4006 476 St Kilda Road, St Kilda, VIC, 3004 Level 14, 431 King William Street, Adelaide, SA, 5000

 Issue Date
 08/03/2017

 Issue Number
 12

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# **Appendix B Project Vehicle Movement Plans**



Updated: 29 May 2019 by John Yap

Adherence to this VMP is mandatory. Deviation from this plan may find you personally liable for regulatory action from the Department of Planning and Environment

Saved: G:\WCX3a\500 Prjt Admin\526 Site Wide\100 Traffic Management\170 Vehicle Movement Plan



Updated: 29 May 2019 by John Yap

Adherence to this VMP is mandatory. Deviation from this plan may find you personally liable for regulatory action from the Department of Planning and Environment

Saved: G:\WCX3a\500 Prjt Admin\526 Site Wide\100 Traffic Management\170 Vehicle Movement Plan









VEHICLE MOVEMENT PLAN - PRE&W (MUIRS)

PERIOD FROM: 13 May 2019

Updated: 08 May 2019 by John Yap

Saved: G:\WCX3a\500 Prjt Admin\526 Site Wide\100 Traffic Management\170 Vehicle Movement Plan











Updated: 08 May 2019 by John Yap

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