Construction Compliance Report:

28 May 2022 – 27 November 2022

M4-M5 Link Mainline Tunnels

WestConnex M4-M5 Link Tunnels

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Contents

Tables

Figures

Appendices

Abbreviations/Glossary

Abbreviation	Expanded text
AA	Acoustic Advisor
ASBJV	Acciona Samsung Bouygues Joint Venture
CCR	Construction Compliance Report
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Monitoring Program
CRCP	Continuously Reinforced Concrete Pavement
CSSI	Critical State Significant Infrastructure
CoA	Conditions of Approval
CTEAP	Compliance Tracking and Environmental Audit Program
DDMP	Depositional Dust Monitoring Program
DPE	Department of Planning and Environment
EC	Electrical Conductivity
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
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)
EWMS	Environmental Work Methods Statements
GWMP	Groundwater Monitoring Program
HSS	Hawkesbury Sandstone
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
M&E	Mechanical and electrical

Abbreviation	Expanded text
Minister, the	Minister of the NSW Department of Planning and Environment (or delegate)
NCR	Non-Conformance
NSW	New South Wales
NZS	New Zealand Standard
NTU	Nephelometric Turbidity Units
NVMP	Noise and Vibration Management Sub-Plan
OBS	Observation
OFI	Opportunity for Improvement
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 (now Transport for New South Wales)
SPIR	Submissions and Preferred Infrastructure Report
SSI	State Significant Infrastructure
SSTV	Site Specific Trigger Value
SWL	Standing Water Level
SWQMP	Surface Water Quality Monitoring Program
T&C	Testing and commissioning
TCR	Traffic Control Room
TfNSW	Transport for New South Wales
TTAMP	Traffic, Transport and Access Management Sub-Plan
WCX	WestConnex Transurban
WMCC	WestConnex Motorway Control Centre
WTP	Water Treatment Plant

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 Services (now Transport for NSW (TfNSW)) 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 for MOD 1 (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 (CoAs) were also modified.

A Modification Report for MOD 2 was prepared and placed on public exhibition between 21 August 2019 and 25 September 2019. A Response to Submissions Report was prepared to respond to submissions received during the public exhibition period. This report and a Design Amendment Report were lodged with the Department of Planning and Environment (DPE) in April 2020. The Modification was determined by the NSW Minister for Planning on 30 September 2020, along with modification to CoAs.

A Modification Report for MOD 3 was prepared and placed on public exhibition by between 20 November and 18 December 2019. A Response to Submissions Report was prepared to respond to submissions received during the public exhibition period. This report was lodged with DPE in March 2020. The Modification was determined by the NSW Minister for Planning and Public Space on 28 July 2020, along with modification to CoAs.

A Modification Report for MOD 4 was prepared and lodged with DPE in June 2020. The Modification was determined by DPE on 28 July 2020, along with modification to CoAs.

A modification Report for MOD 5 was prepared and lodged with DPE in October 2020. The Modification was determined by DPE on 17 November 2020, along with modification to CoAs.

A modification Report for MOD 6 relating to Stage 2 of the approved project is still pending determination.

A modification Report for MOD 7 relating to Stage 1 of the approved project was prepared and lodged with DPE in May 2022. The modification was determined by DPE on 14 October 2022, along with a modification to the CoAs.

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 Transurban has engaged Acciona Samsung Bouygues Joint Venture (ASBJV), formerly Lendlease Samsung Bouygues Joint Venture 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 at Haberfield and the M8 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 project, comprising:
    - A tunnel-to-tunnel connection to the M4 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 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 M8 project, comprising:
    - A tunnel-to-tunnel connection to the M8 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 M8 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
- Fit out (mechanical and electrical) of part of the Parramatta Road ventilation facility at Haberfield (which was constructed as part of M4 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
- 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

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 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 May 2022 – 27 November 2022.

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) to report on the compliance status of the Project every six months during the construction phase.

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
	(a) a results summary and analysis of environmental monitoring;	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
	(c) details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;	Section 2.5

CoA no.	Requirement	Reference
	(d) a register of any consistency assessments undertaken and their status;	Section 2.4.1
	(e) results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit;	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, 4.3

In accordance CoA A33(g), the Secretary requested additional information be included in all future CCRs. These additional requirements are specified in Table 1-2.

Table 1-2 Additional CCR information

Requirement	Reference
A Compliance Table consistent with the Compliance Table Template provided at Appendix C of the Compliance Reporting - Post Approval Requirements (Department, 2020).	Appendix A
An Action Summary Table that summarises all actions arising from previous Independent Audits and Construction Compliance Reports that had not been closed out in previous Construction Compliance Reports. See section 3.1.2 and Appendix B of the Compliance Reporting - Post Approval Requirements (Department, 2020).	Appendix B

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 at Haberfield and the M8 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 to be open to traffic in 2023. At the completion of Stage 1, the mainline tunnels would operate generally 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 commenced in mid-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 and Section 1.3 of the CEMP.

ASBJV, TfNSW and WestConnex Transurban together are responsible for compliance with the requirements of the CoA and SPIR. However, ASBJV is 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 Project Update

During the reporting period civil surface, mechanical and electrical (M&E) works and testing and commissioning (T&C) continued across the Project. The Project is on target for construction completion at the end of Q1 2023 with all three parties are working collaboratively towards an earlier tunnel opening.

Some significant activities and milestones achieved throughout the reporting period are provided below:

- M&E installation was completed Parramatta Road Ventilation Facility (PRVF) in June 2022
- 100% of tunnel assets were handed over to T&C in August 2022.
- The ‘operational’ water treatment plant (WTP) was successfully commissioned throughout August and September 2022 and commenced discharge under the operational EPL (21616) in October 2022.
- Pre- operation tunnel emergency response exercises were successfully executed in the tunnel in early November 2022 in attended of NSW Police and FRNSW.
- Commissioning of the in-tunnel tolling gantries commenced mid- November and remains ongoing
- Removal of the M8 blockwork wall in the tunnel was completed in October 2022 in preparation for tunnel opening. This is the integration point for the M8 and M4-M5 Link Tunnels.

- All three sites tunnel adits were 100% backfilled in October 2022 using exempt imported backfill material.
- All sites commenced demobilisation.

Figure 2-1 Adit backfill: flowable grout being poured, St Peters October 2022

2.2.1 Wattle Street Site Cut and Cover and Haberfield Surface Works

Cut and Cover and surface works at the Wattle Street site during the reporting period included:

- Final asphalting and line marking commenced in the Wattle Street ramps with M170 line marking completing end of October.
- All but one surface sign which remains open under an RFI were installed on the Wattle Street ramps.
- Demolition commenced at Northcote Street site with the removal of the electrical workshop.
- Site offices in the compound were demobilised in October.
- The acoustic shed at Northcote Street commenced demolition early November.

Figure 2-2 Wattle Street Cut and Cover works near to completion, March 2022

2.2.2 Campbell Road Site Surface Works

Surface works at Campbell Road during the reporting period included:

- Completion of the ventilation building lighting arms.
- Demolition of the acoustic shed was completed in July 2022.
- Site office removal commenced in August 2022 with a temporary office area set up for onsite workers in September 2022.
- The Op WTP was successfully commissioned and commenced discharge in October 2022.
- Permanent landscaping was completed adjacent to the ventilation building with landscaping across all other areas still ongoing.
- Permanent asphalt and line marking was completed on the cut and cover tunnel ramps.

Figure 2-3 Permanent asphalt and line marking, St Peters October 2022

2.2.3 Pyrmont Bridge Road Surface Works

Surface works at Pyrmont Bridge Road during the reporting period included:

- Removal of the tunnel ventilation and above ground temporary structures
- Removal of the site offices
- Demobilisation and removal of the construction WTP
- Demolition of the acoustic shed commenced early November 2022 and remains ongoing.

Figure 2-4 Pyrmont Bridge Road Office Removal October 2022

2.3 Timing

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

- Site establishment and construction commenced late 2018
- Tunnel construction commenced late Q1 2019
- Mechanical and electrical fit out work commenced Q3 2020
- Testing and commissioning commenced Q2 2021
- Project to open Q1 2023.

2.4 Planning Approvals

2.4.1 Consistency Assessments

No consistency assessments were determined by TfNSW under the CSSI project planning approval during the reporting period.

2.4.2 Project Modifications

During the reporting period, following the exhibition period from 18th May 2022 to 31st May 2022, Modification report (MOD 07) for the M4-M5 Link Northcote Street Closure was determined 14 October 2022.

This will see the continued closure of the Parramatta Road/ Northcote Street intersection to vehicle traffic and the reinstatement of the road alignment as a pedestrianised zone with landscaping. The modification approval included an update to the Conditions of Approval which are captured in Appendix A.

The works approved under the modification will commence in Q1 2023.

2.5 Construction Environmental Management Plan Reviews/Amendments

Throughout the reporting period the CEMP and all sub plans were reviewed. Two minor amendments were made to the CEMP main body Appendix A8: ancillary facility site layouts:

- Revision 26, approved 27 September 2022
- Revision 27, approved 23 November 2022

Refer to Table 2-1 below.

Table 2-1 CEMP Update and Review

Relevant Plan	Revision	Updates	Approval Date
Construction Environmental Management Plan Main body	Revision 26 Revision 27	Appendix A8 – Ancillary Facility site Layouts: • Northcote Tunnelling Site • Pyrmont Bridge Road Tunnelling Site Campbell Road Civil and Tunnel Site Appendix A8 – Ancillary Facility site Layouts: • PREW Site Layout	23 November 2022 27 September 2022
Traffic and Transport Access Management Plan	Revision 39	Minor update following Hawthorne Canal works completion and to include parking at the Burrows Road Ancillary Facility	2 February 2022
Noise and Vibration Management Sub Plan	Revision 21	Review conducted; no changes/ updates necessary	1 September 2020
Flora and Fauna Management Sub Plan	Revision 7	Review conducted; no changes/ updates necessary	29 July 2020
Pollution Incident Response Management Sub Plan	Revision 05	Annual review conducted July 2022	17 July 2022
Air Quality Management Sub Plan	Revision 5	Review conducted; no changes/ updates necessary	1 March 2019
Soil and Surface Water Management Sub Plan	Revision 09	Review conducted; no changes/ updates necessary	28 April 2020
Groundwater Management Sub Plan	Revision 13	Review conducted; no changes/ updates necessary	10 June 2021
Non- Aboriginal Heritage Management Sub Plan	Revision 10	Review conducted; no changes/ updates necessary	1 September 2020
Aboriginal Cultural Heritage	Revision 5	Review conducted; no changes/ updates necessary	4 March 2019

Management Sub Plan			
Waste Management Sub Plan	Revision 8	Review conducted; no changes/ updates necessary	29 June 2020

3 Compliance Management

ASBJV, TfNSW and WestConnex Transurban are together responsible for compliance with the Project's requirements detailed in the CoA and SPIR. Refer to the CTEAP for further information on how ASBJV 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

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

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

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

A summary of the Project's compliance against each CoA during the reporting period is provided in Appendix A.

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 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 ASBJV EMS is based on the Lendlease Engineering ISO 14001 Certified EMS which was adapted to address Project and joint venture requirements.

The CTEAP is part of a suite of environmental management documents prepared for the Project. The CTEAP is 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 EPA and Secretary. Actual and potential material harm incidents during the reporting period are detailed in Table 4-1.

Table 4-1 Material Harm Incidents during the reporting period

Incident Type	Description	Site	Immediate Actions / Control Measures	Corrective Actions
Nil	Nil	Nil	Nil	Nil

A total of 22 incidents were reported across the Project during the reporting period. The most frequent incident issue was Spills (19) with Other (2) and Traffic (1) totalling 22 overall.

20 incidents were classified as a Category 2 incident with 1 incident classified as a reportable event and 1 incident classified as a Category 1 which did not result in actual off-site environmental harm.

Where Category 1 or Regulatory Action incidents have been triggered, appropriate notification to the regulator and/or Secretary has been submitted and where required, captured in the Project's EPL annual return.

Refer to Figure 4-1 for a breakdown of the incidents by issue.

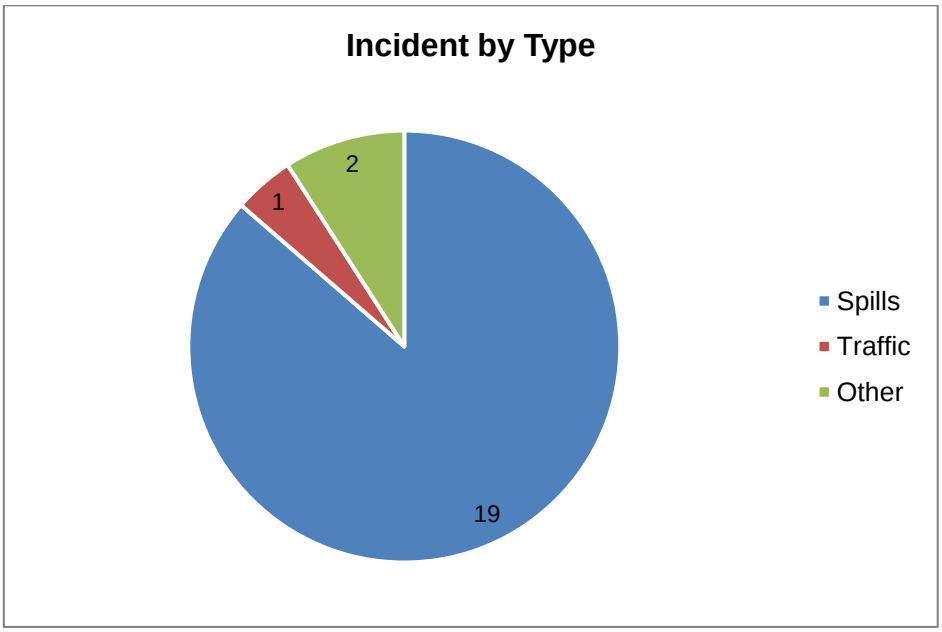

Figure 4-1 Environmental Incidents by Type

4.1.1 Spills

During the reporting period, spills comprised 86% of all incidents by type and involved minor to small spills which were immediately contained on site, cleaned up and disposed of appropriately. No actual environmental impact occurred as result of the spills.

The number of spills occurring across the Project has increased in comparison to the previous reporting period. This is likely to be attributed to the increased reporting culture of spills on site as the Project moves into the completion stage.

Routine toolboxes and training have been delivered Project-wide on topics including appropriate material storage and bunding, spill prevention, spill response, management and reporting.

4.1.2 Other

“Other” comprised 9% of all incidents.

The incident captured as ‘other’ are the same incident which occurred 5th September 2022 where following 25mm of rain, the site street sweeper tracked some sediment from within the PBR site onto the public road.

The site team noticed the tracking and commenced clean up immediately. The tracking was also observed by an EPA officer during an unrelated visit and on 27th September 222, the EPA contacted the project requesting information. The EPA advised the project that the tracking was required to be reported in the EPL Annual Return against condition O5.9.

ASBJV reported this incident as a ‘reportable event’.

ASBJV, whilst initially capturing the incident as the reportable event, acknowledged this should have been recorded as a Category 2 incident on the day it occurred due to the tracking and clean up being implemented immediately. As such, this incident was recorded twice.

4.1.3 Traffic

The traffic incident comprised 5% of all incidents.

The incident was regarding a heavy vehicle accessing a local road within 1km of the Project and not adhering to the Projects Traffic and Transport Access Management Plan (TTAMP).

This incident was classified as a Category 1 incident due to non-compliance with the Conditions of Approval.

As detailed in Appendix A CoA E49 and E52 has been listed as non-compliant.

4.2 Non-Conformances

The 1 traffic incident detailed in Section 4.1 was a non-conformance (NCR). The NCR was against the Conditions of Approval (E49) and (E52) as summarised in **Error! Reference source not found.**.

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Table 4-2 – Project Non- Conformances

Project Document	No. of NCRs	Description	Corrective Action
Conditions of Approval E49 and E52	1	On 28 October 2022, a heavy vehicle belonging to a subcontractor working on the Project accessed a local road within 1km of the CSSI and not adhering to the haulage routes identified in the Projects TTAMP.	DPE were notified of the incident 28 October 2022 via email. An investigation was undertaken to confirm with the vehicle was associated with the Project. A toolbox talk was delivered on the important of adhering to the vehicle management plan and prohibiting of driving on local roads

4.3 Environmental Representative Inspections

The Project Environmental Representative (ER) conducted ten environmental inspections and raised five issues and twenty-nine positive findings during the reporting period.

No issues were considered high-risk and were all subsequently closed out to the satisfaction of the ER. Figure 4-2 provides a breakdown of issue type raised during the 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 4-3 provides definitions of the different TfNSW inspection statuses. During the reporting period, the Project received 100% 'Green' inspection results. Refer to Figure 4-3.

The Environment Protection Authority (EPA) conducted no Project site inspections during the reporting period.

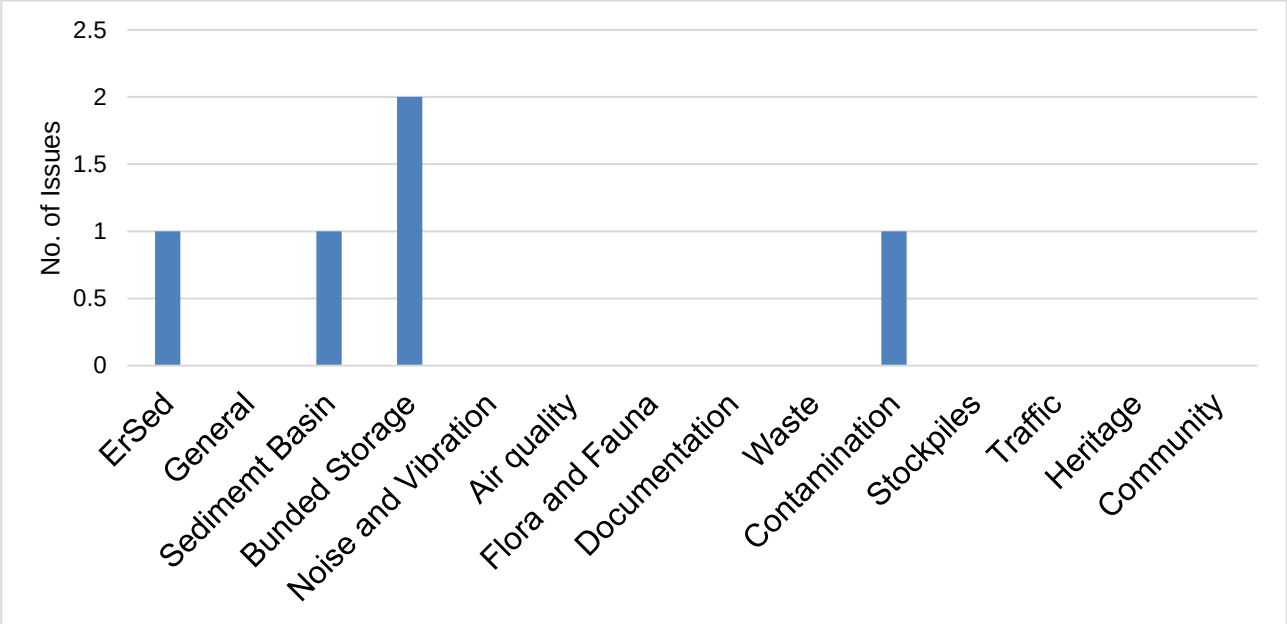

Figure 4-2 ER Inspection Issues by Type

Table 4-3 TfNSW Environment Inspection Status

Status	Definition
Red	• Actions required to address urgent risk issues. • Satisfactory actions not taken for high risk issues identified on the previous inspection. • A Category 1 incident has been identified during the inspection.
Amber	• Actions required to address high and/or medium risk issues. • Satisfactory actions not taken for previous medium or low risk issues on the previous inspection.
Green	• Actions required to address low risk issues that will not directly cause environmental harm. • Site demonstrates good environmental management with no action required to avoid environmental harm.

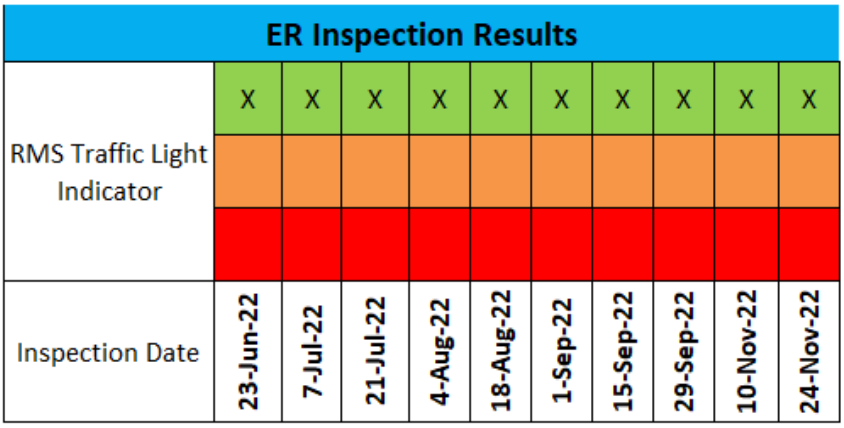

Figure 4-3 ER Inspection Results

4.4 Environmental Audits

4.4.1 Independent Environmental Audit

No independent audits were undertaken during the reporting period.

The actions from the fourth independent environmental audit for the Project examining compliance against the CEMP and Noise and Vibration Management Sub-Plan (NVMP) and the Soil and

Surface Water Management Sub- Plan (SSWMP), as detailed in the previous Construction Compliance Report 7 (CCR 7), were closed out during this reporting period.

The audit resulted in two opportunities for improvement (OFI) and three observations (Obs).

ASBJV response to these actions was issued to DPE on 6 July 2022.

The closed out actions of the audit are summarised in the Action Summary Table in Appendix B.

4.4.2 ISO 14001:2015 EMS Audit

There has been no annual audit on the Project's EMS against the ISO14001 during this reporting period. The project's EMS is ISO 140001 certified until 30 November 2023.

4.5 Complaints

The Project received a total of 16 complaints during the reporting period.

Of these, one was identified as not related to the Project but was still investigated and logged.

Refer to Figure 4-4 for a breakdown of the complaints by month and issue. As stated in the previous CCR report, it was expected that the number of complaints received would decrease throughout this reporting period. This is likely attributed to the completion of tunnelling work and the transition to civil fit out and tunnel commissioning works. This decreasing trend is expected to continue.

12 out of the 16 Project-attributed complaints received were attributed to noise (3 of which were identified as not related to the project), 2 were attributed to dust (1 of which was identified as unrelated to the project) with the remaining 2 complaints regarding debris and vibration felt during standard construction hours.

Noise still remains the most frequent complaint issue. An increase in noise complaints from the previous reporting period is likely to be attributed to the sites commencing demobilisation and demolition after a significant period of surface respite due to the focus previously being within the tunnel.

Responses to these complaint issues are discussed in Section 4.5.1.

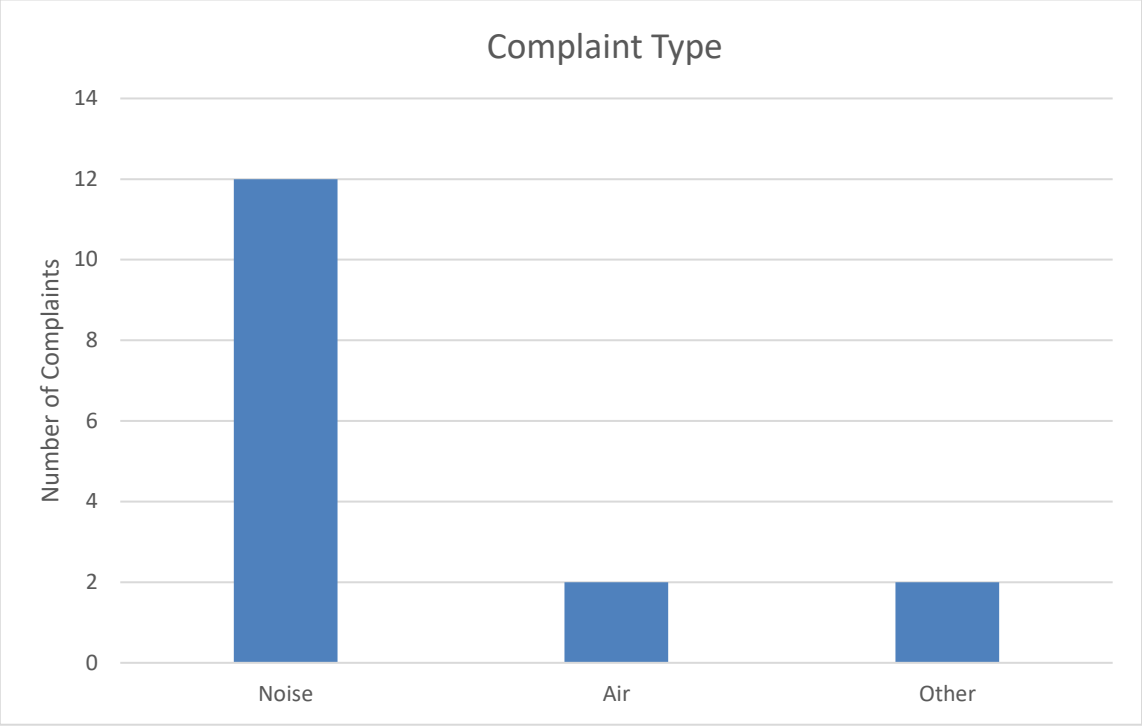

Figure 4-4 Project Complaints Received

4.5.1 Complaint Management

Noise-related complaints were predominately received about air borne noise impacts from surface works at Camperdown (2), St Peters (3), Haberfield (6), Newtown (1).

Of these complaints, (1) Newtown, (1) Camperdown and (1) St Peters complaint were not attributed to the project.

Of the (6) noise complaints received at Haberfield, (4) were in response to noise coming from an on-site generator.

Actions taken to address the issues raised included:

- Provide specific notification to impacted residents including details about duration and approval of work activities
- Providing additional regular weekly updates on work progress
- Toolboxing workers on noise and dust mitigation measures and project expectations
- Implementing additional dust mitigation measures such as increased frequency of water cart use and asking operators to turn off vehicles/plant when not in use
- Implementing additional noise mitigation measures such noise blankets
- Advising nearby projects of complaints related to their work.

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. Monitoring was undertaken at six locations during the period.

Potential changes in water quality were assessed and a management response initiated following any exceedance of a site-specific trigger values (SSTV).

Overall, downstream monitoring results generally compliant with the SSTV limits except on a few occasions. Where exceedances were noted at downstream sites, poorer water quality was also evident at the control sites suggesting the exceedances were unlikely to be Project related.

At Dobroyd Canal (Northcote St), two downstream exceedances of the pH criterion and three turbidity exceedances were recorded during the reporting period.

On 7 July 2022, the pH exceeded the lower bound criterion and turbidity exceeded the SSTV. Poorer water quality for both analytes was however noted at the upstream/control site suggesting the exceedance was not related to the project.

The second pH exceedance of the lower bound criterion was recorded during monitoring on 2 August 2022 with turbidity exceeding SSTV during routine monitoring on 14 September 2022 and wet weather monitoring on 6 October 2022.

Records from the Northcote WTP indicated that no discharge occurred during this reporting period therefore was not the source of the exceedance.

The salinity concentrations at the downstream sites were greater than the upstream site during all monitoring rounds, except for 7 July 2022, which can suggest there could be an alternative water source to the upstream site.

Additionally, rainfall contributed to high flows from non-project areas which may have influenced the poor downstream water quality noted on 6 October 2022 likely affecting pH levels.

Baseline data for Dobroyd Canal/ Iron Cove Creek shows maximum recorded downstream turbidity was 271 NTU again suggesting the elevated turbidity results seen on 14 September and 6 October is unrelated to the Project.

Monitoring undertaken on 1Nove 222 confirmed water quality had returned to within the SSTV limits.

At Johnstons Creek (PBR), one downstream exceedance of the turbidity SSTV was noted during wet weather monitoring on 6 October with poorer water quality observed at the upstream site suggesting the exceedance is not project related.

At Sheas Creek/Alexandra Canal (Campbell Road), one downstream exceedance of the lower bound pH criterion was noted during monitoring on 7 July 2022 and two exceedances of the NTU SSTV were recorded during monitoring on 2 August and 6 October 2022.

Follow up monitoring was undertaken on 21 July as an investigative response to the pH exceedance on 7 July 2022 where it was noted that all water quality had returned to within the SSTV limits.

SPI WTP discharge results were analysed and confirmed discharge was within criteria for the week preceding 2 August 2022 suggesting discharge was not the cause for the exceedance recorded on 2 August 2022.

Wet weather conditions contributed to high flows observed in Sheas Creek/Alexandria canal during wet weather monitoring on 6 October 2022 as well as the sampling at the downstream site being taken from the channel bank resulting in greater sediment captured

Baseline data from this area was reviewed and it was noted that a minimum pH of 5.65 was observed at the downstream site suggesting that low pH is known to occur by non-project related means.

5.2 Groundwater

In accordance with the Groundwater Monitoring Program (GWMP), continuous groundwater level and quality (conductivity) monitoring was undertaken on 24 bores. Loggers were downloaded and manual level measurements collected every two months.

Borehole MT_BH14 remained dry during the reporting period and has been removed. As mentioned in the previous CCR, borehole LSB-MT-BH1010b was dry in August 2021 and access is no longer available.

The data logger for borehole LSB-MT-BH1013a was removed by a third party and had restricted access between August 2021 and March 2022. The well has been filled with bentonite since May 2022 and is now considered compromised.

As detailed in the previous CMR, LSB-MT-BH1003 was asphalted over by the local council in March 2021 and is no longer accessible. It was replaced by monitoring bore LSB-SPI-OM-BH04, located approximately 50 meters northeast of LSB-MT-BH1003, in November 2021.

Data from 9 September to 1 November 2022 is unavailable for borehole LSB-SP-BH11 due to logger failure. A replacement logger was installed during the November monitoring round to ensure data logging continues through tunnel opening and operations at this location.

5.2.1 Groundwater Level

The predicted drawdown levels for each monitoring borehole are estimated based on EIS baseline monitoring results and pre-tunnelling water levels measured following the commencement of construction in late 2018. Predicted drawdown levels are also influenced by the monitoring bores proximity to the tunnel and depth of the tunnel invert.

Consistent with the previous reporting period, groundwater levels in five monitoring bores were observed below indicative drawdown predictions during the entire reporting period. Two are in St Peters, two are in Haberfield and one is located on Pyrmont Bridge Road.

Groundwater level at monitoring bore LSB-MT-BH1015 increased above the indicative drawdown prediction during the period 3 August to 13 September 2022 and has showed a decreasing trend to just below the SSTV thereafter. The groundwater level at monitoring bore HB_BH14 increased above the indicative drawdown prediction in August 2022 and has continued to increase thereafter.

5.2.2 Groundwater Quality

Potential changes in groundwater quality were assessed using electrical conductivity (EC) dataloggers, with a management response initiated if the following occurred:

- EC data continuously exceeds the SSTV over the period of three months and depicts a rising trend
- EC data exceeds the SSTV at any time by more than 100%.

During the reporting period, no management responses were triggered for the six bores located in the Hawkesbury Sandstone (HSS) lithology.

As reported in the previous CMR, LSB-MT-BH1015 has continued to exceed the SSTV throughout the reporting period and has displayed a continuously increasing trend since May 2022.

EC levels in LSB-GW-HB-BH12 were also observed above the SSTV between 13 June to July 2022 and 23 August to 20 October 2022.

It should be noted that groundwater was predicted to become more saline during construction in the EIS. The numerical groundwater model (Golder 2022) noted that saline water migration is occurring over a greater lateral extent than what was predicted in the final design model due to increased groundwater inflow. Therefore, the increases in EC observed at monitoring bores LSB-MT-BH1015 and LSB-GW-HB-BH12 were not unexpected as such, no action was required however both monitoring bores will continue to be closely monitored throughout operations.

During the reporting period LSB-HC-PT-OW5a continued fluctuated below the SSTV and the two bores located in Ashfield Shale (LSB-SP-BH03 and LSB-SP-BH11) remained below the SSTV despite some fluctuations attributed to rainfall.

5.2.3 Water Treatment Plant (WTP) Discharges

During the reporting period, the Campbell Road WTP was operational and treating all mainline tunnel water for discharge up until October 2022 where the plant was demobilised.

The WTPs are designed to treat a combination of surface water, groundwater and water from site operations to a suitable quality for discharge in accordance the Project's Environment Protection Licence (EPL) (Licence No. 21149). Monthly WTP samples are taken to confirm compliance against the EPL criteria. A summary of the volumes discharged from Campbell Road and water quality results during the reporting period are summarised in Table 5-1.

Following demobilisation of the Construction WTP, the Campbell Road operational WTP began treating and discharging water in October 2022 where the plant commenced its Pollution Reduction Program (PRP) under EPL 21616.

Two monthly WTP samples taken from the operational WTP returned results exceeding the EPL criteria. Samples taken on 18/10/22 returned results on 25/10/22 with elevated Ammonia and Hexavalent Chromium and samples taken on 17/11/22 returned results on 25/11/22 with elevated Hexavalent Chromium results.

An investigation into these results is being conducted with the lab due to some anomalies observed between parameters.

The EPA were notified of these exceedances and will be captured in the relevant annual return.

Table 5-1 Site WTP Discharges

Water Treatment Plant	EPL Discharge Point Ref.	Total Volume Discharged (m3)	No of Exceedances of EPL Criteria
Campbell Road-Construction	4	145,668	0
Campbell Road-Operational	1	62,611	2

5.2.4 Tunnel Inflows

Tunnel inflows are estimated by the ASBJV Geotechnical Team using the following water balance equation:

Tunnel inflow = WTP Discharge – Project water inputs + Spoil Water Content

During the reporting period, monitoring and quantifying of the tunnel groundwater inflow was undertaken at the Campbell Road WTP. Due to the difficulty of accurately quantifying groundwater inflows during the construction phase of the project, an uncertainty analysis has been undertaken on each component of the tunnel inflow equation. This uncertainty has been accounted for in the inflow estimations. The estimated total groundwater inflow rate during the reporting period was 13.21 L/s.

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 airborne noise monitoring
- Real-time unattended noise and vibration monitoring
- Attended vibration monitoring

Table 5-2 provides a summary of the Project-wide noise and vibration monitoring results during the reporting period.

Table 5-2 Noise and Vibration Monitoring Events Summary

Monitoring Type	Prediction Exceedances	Comments
Airborne noise monitoring	0	Based on 15 monitoring events. All airborne noise monitoring results were compliant with the applicable criteria and no additional mitigation measures were required to be implemented
Vibration monitoring to verify safe working distance	0	Based on 4 monitoring event. All results were compliant with the relevant criteria for cosmetic damage

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.

During this monitoring period, a noise logger with cloud capabilities was sourced and deployed at the Campbell Road site. This logger utilises the Noise Cloud software. All other noise loggers are still in use at the other sites.

The real- unattended data has provided little value to the community or Project team and has not been needed to respond to complaints or in relation to compliance investigations since Project commencement.

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
- Parramatta Road East and West civil sites (PREW)
- Wattle Street civil and tunnel site
- 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^2/month. During the reporting period, 6 monthly dust results greater than 4 g/m^2 were recorded across the Project as shown in Figure 5-1.

The monitoring results obtained at Wattle Street are not considered representative as this location appears to be greatly affected by external factors and the passing traffic because dust generating construction activities at this location have been minimal during the reporting period.

Whilst there were 6 monthly exceedances recorded during the reporting period dust levels individually are not considered to be an exceedance of the annual performance criteria , with the exception of Wattle St, and are driven by wider environmental conditions such as drier periods or above average rainfall. Refer Table 5-3.

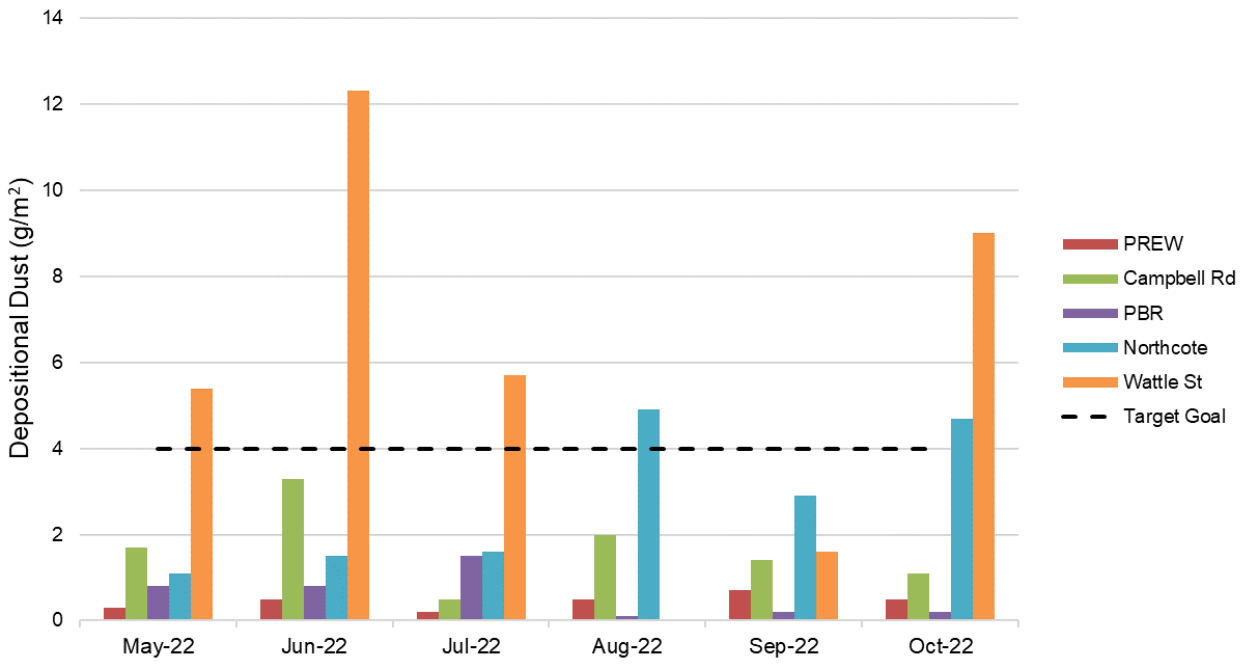

Figure 5-1 Monthly Depositional Dust Results by Site

Construction Site	PREW	Campbell Rd	PBR	Northcote	Wattle St
Six Months Average	0.45	1.66	0.60	2.78	5.98
Annualised Average	0.45	1.62	1.10	2.08	6.35

Table 5-3 Six Months and Annualised Average Dust Values (g/m2)

As reported in previous CCRs, dust monitoring results are highly correlated with air quality trends in the Greater Sydney Region and influenced by seasonal patterns, rainfall, and other factors such as hazard reduction burns.

In the second half of 2022, lower dust values generally occurred during the wetter months of July and October. It should also be of note that the levels at each site – except for Wattle St – are relatively close to each other in any given month further indicating wider environmental factors rather than site conditions are the main driver of results.

The NSW Office of Environment and Heritage (OEH) released numerous poor air quality forecast alerts throughout the last bushfire season which had an impact on dust levels. In comparison, there were fewer poor air quality alerts during the much wetter 2022.

On-site dust management is regularly monitored by ASBJV Environmental Coordinators, as well as the Project ER during fortnightly formal inspections.

Dust management measures implemented on site during the reporting period included:

- Spoil is handled outside an acoustic shed, for example at the Campbell Road site, additional controls were investigated and implemented including the use of water misters and increasing the frequency of water carts in that area
- Covered loads for all vehicles transporting spoil and other materials

- On-site dust suppression including water carts, hoses, drizzle bars and street sweepers
- Maintenance of hardstand areas to prevent material building up and potentially becoming airborne
- Dust minimisation toolbox talks delivered to site personnel
- Use of wheel washes, wheel baths, drizzle bars and street sweepers to minimise sediment tracking and build up on public roads

Appendix A Conditions of Approval - Compliance Table

Table redacted for online version

Appendix B Action Status Table

Source	Finding Type	Finding Description	Relevant CoA	Action Proposed	Proposed Completion Date	Status	Action Completed
Independent Audit 2022	**OFI**	Whilst a PIRMP is in place, it was last updated on 07 October 2021 and has not yet been updated to include the new locations of hazardous substances or updated list of chemicals since the commencement of demobilisation. ASBJV.	N/A	The PIRMP should be updated to reflect the changes due to demobilisation	N/A	Closed	The PIRMP underwent its annual review and was on 14 July 2022. This update included the new locations of hazardous substances as captured in Appendix B and an updated inventory list as captured in Appendix D of the PIRMP
	OFI	A telehandler was observed moving some metal work during the site inspection at Pyrmont bridge Road, resulting in some metal-on-metal impact noises. Observation from outside the acoustic shed confirmed this was unlikely to be excessively noisy to the community.	N/A	Continue to ensure workers are aware of noise requirements at this late stage of the project	N/A	Closed	A project wide toolbox talk was issued on 1 September 2022 reminding the workforce on minimising noise and vibration impacts.
	OBS	There was a hiatus in real time noise monitoring data following periodic calibration in early 2022, for two reasons: 1.The supplier required the equipment to be shipped to Sweden for calibration, so the equipment was offline for several weeks. 2.The noise monitor at St Peters Interchange was found to be faulty and repairs could not be arranged quickly.	C11	Inform DPE of the hiatus – this could be through the monthly AA reports.	N/A	Closed	DPE were informed of the noise hiatus via the Noise and Vibration Construction Monitoring Report (CMR) (7) under section 5.3. The AA endorsed the CMR on 28 June 2022. This finding was also raised in the monthly DPE meeting.
	OBS	It was observed that some minor quantities of incompatible hazardous substances were stored in one of the bunded storage containers (Northcote). Class 2 flammable gas spray cans were stored with oils and other class 3 flammable liquids. and class 3 substances	N/A	Separate Class 2 (flammable gas) and Class 3 (flammable liquids) into separate storage containers.	N/A	Closed	Class 2 hazardous substances were separated from the Class 3 storage container as documented via photo 16 June 2022.
	OBS	At the time of the audit, most chemicals had been moved out of the tunnel as part of demobilisation and moved off site, however a mould oil IBC was observed stored on an undersized bunded pallet (filled with water following rainfall). Refer to photos	N/A	Relocate the IBC to a bunded area immediately and move the IBC off site as soon as possible	N/A	Closed	The IBC was placed on a bund prior to its removal as documented via photo taken 16 June 2022. The IBC has since been removed from site

Notes: Audit Finding Types: NCR = Non-Conformance, OBS = Observation, OFI = Opportunity for Improvement