

Cross River Rail Project

Monthly Environmental Report

June 2020

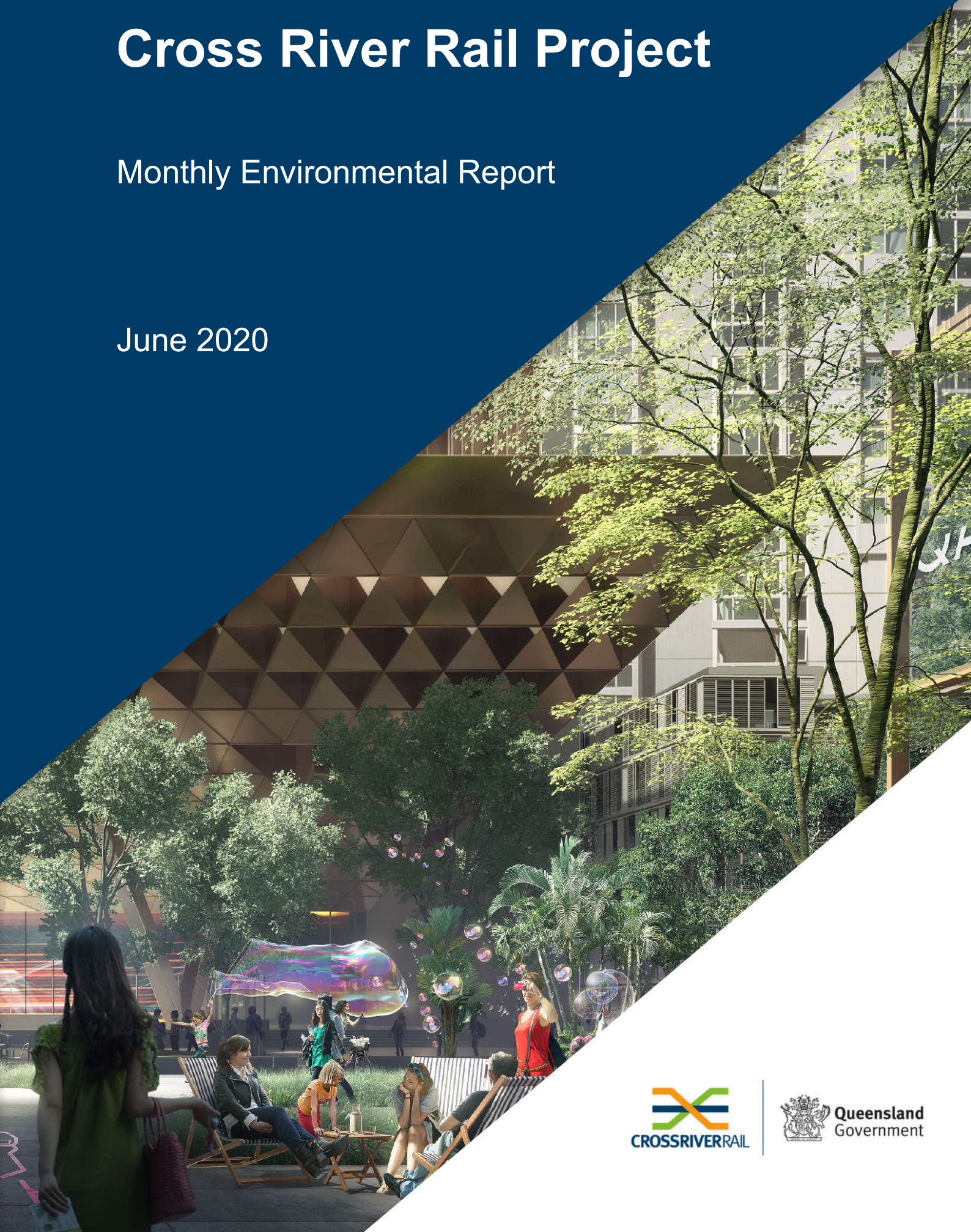


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Appendix A – RIS Monthly Report

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Executive Summary

This Monthly Environmental Report (MER) has been produced for Project Works undertaken on site for June 2020 for the Rail, Integration and Systems (RIS), and Tunnel, Stations and Development (TSD) packages. The report addresses the obligations outlined in the Coordinator-General's change reports – condition change (hours of works) 2019 (CGCR, October 2019) and Temporary change of certain work hours May 2020 (effective 7 May) and the individual contractor's Construction Environmental Management Plans (CEMPs) which have been developed generally in accordance with the Project's Outline Environmental Management Plan. The Delivery Authority, as the Proponent of the Cross River Rail Project, is required to submit a monthly report to the Coordinator-General to demonstrate compliance with the imposed conditions.

Section 1 of this report provides a background to the project and the Coordinator-General's conditions. Section 2 provides a review of the contractor's reports contained in **Appendix A** (Rail, Integration and Systems) and **Appendix B** (Tunnel, Stations and Development). Non-Compliance Event Reports (if any) are attached in **Appendix C**.

The Environmental Monitor has reviewed and endorsed this MER. This endorsement follows ongoing and new document reviews, and surveillance across the construction sites (taken place through surveillance officers designated to single sites in response to the COVID-19 restrictions and other means).

The CEMPs prepared by both Unity Alliance (RIS Contractor) and CBUG JV (TSD Contractor) for their Relevant Project Works were endorsed by the Environmental Monitor (EM) and submitted to the Coordinator-General in accordance with Condition 4 (a) and 4 (b) respectively.

The table below presents a summary of compliance status against each condition with a short comment against each condition:

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
1.	General conditions – compliance with the Project Changes relevant to the Contractor's scope	Yes	The CEMP and site plans are in accordance with the Project Changes.
2.	Outline Environmental Management Plan – timely submission to the Coordinator-General including required sub plans	Yes	This has been submitted to the Coordinator-General and the project is working under the currently approved version. Following any future Requests for Project Change (RfPC), this document will be updated and resubmitted. Note that RfPC 6 did not require changes to the OEMP as this was directly related to delivery hours during the COVID-19 government Public Order (i.e. was a temporary change).
3.	Design - achievement of the Environmental Design Requirements	NA	Documents continue to be reviewed related to compliance with the environmental design standards.
4.	Construction Environmental Management Plan – all relating to Relevant Project Works	Yes	TSD - CEMP Rev 6 for tunnelling and ongoing activities in the Central area was endorsed by the Environment Monitor and submitted to the Coordinator-General on 5

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			<p>June 2020. CEMP Rev 3 was effective through June.</p> <p>RIS — CEMP endorsed for Enabling and Advanced Works on 23 August 2019. CEMP for upcoming Northern Portal (Stage 1), RNA Showgrounds (Stage 1) and Mayne Yard North (Stage 1 and 2) works is being developed for submission to the Coordinator General.</p>
5.	Compliance and Incident management - Non-compliance events, notifications and reporting	Yes	Refer to Section 2.5 of this report.
6.	Reporting – Monthly and Annual reporting	Yes	Ongoing
7.	Environmental Monitor - engaged and functions resumed	Yes	Ongoing
8.	Community Relations Monitor - engaged and functions resumed	Yes	Ongoing
9.	Community Engagement Plan - developed and endorsed by Environmental Monitor	Yes	CEMP's endorsed with Community Engagement Plan
10.	Hours of work – works undertaken during approved hours	Yes	This has been achieved through standard working hours, Extended work hours and Managed Work.
11.	Noise – Work must aim to achieve internal noise goals for human health and well-being	Yes	Refer to Appendix A (Table 3) and Appendix B (Table 2) .
	Vibration - Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	Refer to Appendix B (Table 1) .
12.	Property damage relating to ground movement	Yes	<p>Ongoing vibration modelling has been prepared and, where required, building condition survey reports completed.</p> <p>RIS – Property Damage Sub-plans have been prepared for heritage and residential buildings where predictive modelling identified exceedance of nominated vibration goals. These plans are being reviewed by the EM and the Delivery Authority. These plans have been submitted to the Department of Environment and Science</p>

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			(DES) to address one of the RNA heritage approval recommendations.
13.	Air quality - Works must aim to achieve air quality goals for human health and nuisance.	Yes	Refer to Appendix A (Table 5, Figure 4 and Figure 5) and Appendix B (Table 3) .
14.	Traffic and transport - Works must minimise adverse impacts on road safety and traffic flow.	Yes	Traffic Management Plans covered in the CEMP and sub plans reviewed by the Environment Monitor. Traffic Management sub plans for RNA, Victoria Park and Fairfield Station has been submitted to the Environment Monitor for upcoming works.
15.	Water quality - Works must not discharge surface water and groundwater from the construction site above the relevant environmental values and water quality objectives.	Yes	Three releases undertaken during June. All met the water quality objectives. Post rain monitoring was not triggered.
16.	Water resources – evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown.	Yes	Ongoing
17.	Surface water - Must be designed to avoid inundation from stormwater due to a 2-year (6hr) ARI rainfall event and flood waters due to a 5-year ARI rainfall event and constructed to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.	Yes	Contractors continue to consider this condition in their site planning and design.
18.	Erosion and sediment control - Provisions for erosion and sediment control must be consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS52.	Yes	Site specific ESC plans for all active work sites have been certified and reviewed by the Environmental Monitor and implemented on site on all active worksites.
19.	Acid sulfate soils managed as per the Queensland Acid Sulfate Soil Technical Manual.	Yes	Acid Sulfate Soil Management Plans have been prepared for upcoming works at Mayne Yard North and RNA Showgrounds, and are in place for all Central and Southern worksites.
20.	Landscape and open space – general requirement to minimise impacts on landscapes and open space values and	Yes	Site Environmental Plan prepared and implemented for Victoria Park Access Road works. Clearing for retaining wall is being

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
	specific requirements around Victoria Park		managed through Heritage Exemption Certificate approved by the Department of Environment and Science.
21.	Worksite rehabilitation – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	NA	N/A

Non-Compliance Events

There were no Non-Compliance Events (NCE) raised in June.

Definitions

Acronym	Definition
ARI	Average Recurrence Interval - The average or expected value of the periods between exceedances of a given rainfall total accumulated over a given duration.
CEMP	Construction Environmental Management Plan
CG	Coordinator-General
CGCR	Coordinator-General's Change Report
Community Relations Monitor	The Community Relations Monitor engaged in accordance with Imposed Condition 8
Contractor	The Contractors appointed to design, construct and commission the Project
Coordinator-General	The corporation sole preserved, continued and constituted under section 8 of the SDPWO Act
CRR	Cross River Rail
EIS	Environmental Impact Statement
Environmental Monitor	The Environmental Monitor engaged in accordance with Imposed Condition 7
ESC	Erosion and sediment control
Imposed condition/s	A condition/s imposed by the Coordinator-General under section 54B of the SDPWO Act for the Project
MRTS52	Transport and Main Roads Specifications MRTS52 Erosion and Sediment Control
NCE	Non-Compliance Event
OEMP	Outline Environmental Management Plan
Project	The Cross River Rail Project
Project Works	As defined in the Imposed Conditions
Proponent	The Cross River Rail Delivery Authority
QR	Queensland Rail
RfPC	Request for Project Change
RIS	Rail, Integration and Systems
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i>
Sub-plan	Any sub-plan of the CEMP
The Delivery Authority	The Cross River Rail Delivery Authority
TSD	Tunnel, Stations and Development

1. Introduction

1.1 Background

The Cross River Rail Project (the Project) is a declared coordinated project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act). The CRR Environmental Impact Statement (EIS) was evaluated by the Coordinator-General who recommended the Project proceed, subject to Imposed Conditions and recommendations. Since the evaluation of the EIS, six Requests for Project Change (RfPCs) have been evaluated by the Coordinator-General, at the time of writing this report.

The Coordinator-General has imposed conditions on the Project that apply throughout the design, construction and commissioning phases. These are referred to as the Imposed Conditions. In addition, the Coordinator-General has approved the Project's Outline Environmental Management Plan (OEMP) which outlines the environmental management framework for the Project. The OEMP includes environmental outcomes and performance criteria which must be achieved for the Project.

Imposed Conditions 5 and 6 nominate the compliance and reporting requirements for the Project. This monthly report addresses these requirements.

1.2 Project Delivery

The Delivery Authority is responsible for planning and delivering the Project. The Project established environmental management plans and secured some of the secondary environmental approvals in addition to enabling works.

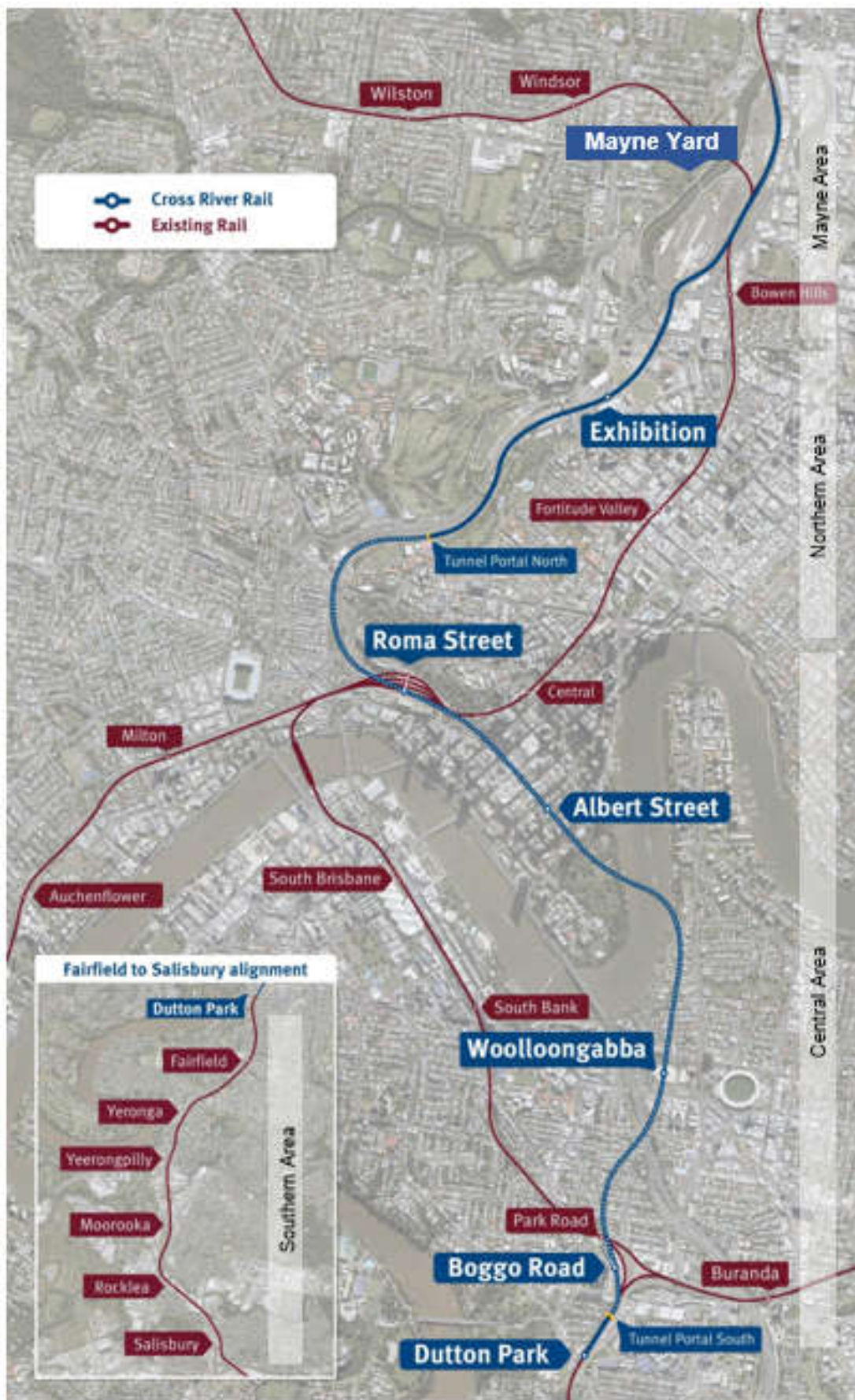
The two main delivery packages which require reporting under the Coordinator-General's imposed conditions are:

- Tunnel, Stations and Development (TSD) being delivered by CBGU JV; and
- Rail, Integration and Systems (RIS) being delivered by Unity Alliance.

The Project is geographically divided into four areas:

- Mayne Area
- Northern Area
- Central Area
- Southern Area

These are shown in the figures below.



1.3 Reporting Framework

This MER has been prepared to comply with Conditions 6 and 7 of the Coordinator-General Change Report (CGCR) and includes:

- Monitoring data and associated interpretation of the results required by the imposed conditions and Construction Environmental Management Plan (CEMP);
- Details of any Non-Compliance Event (NCE), including incidents, corrective actions and preventative actions; and
- Details of any complaints, including description, responses and corrective actions.

Reporting on environmental elements captured in each monthly environmental report, including the annual environmental report, will be reviewed and endorsed by the Environmental Monitor.

1.4 Monthly Environment Report Endorsement

This MER has been endorsed by the Environment Monitor and the endorsement provided to the Coordinator-General.

2.Compliance Review

This Monthly Report has been reviewed and endorsed by Environmental Monitor as per Condition 7 of the Coordinator-General Change Report (CGCR).

2.1 Relevant Project Works

The following Project Works were undertaken in June 2020:

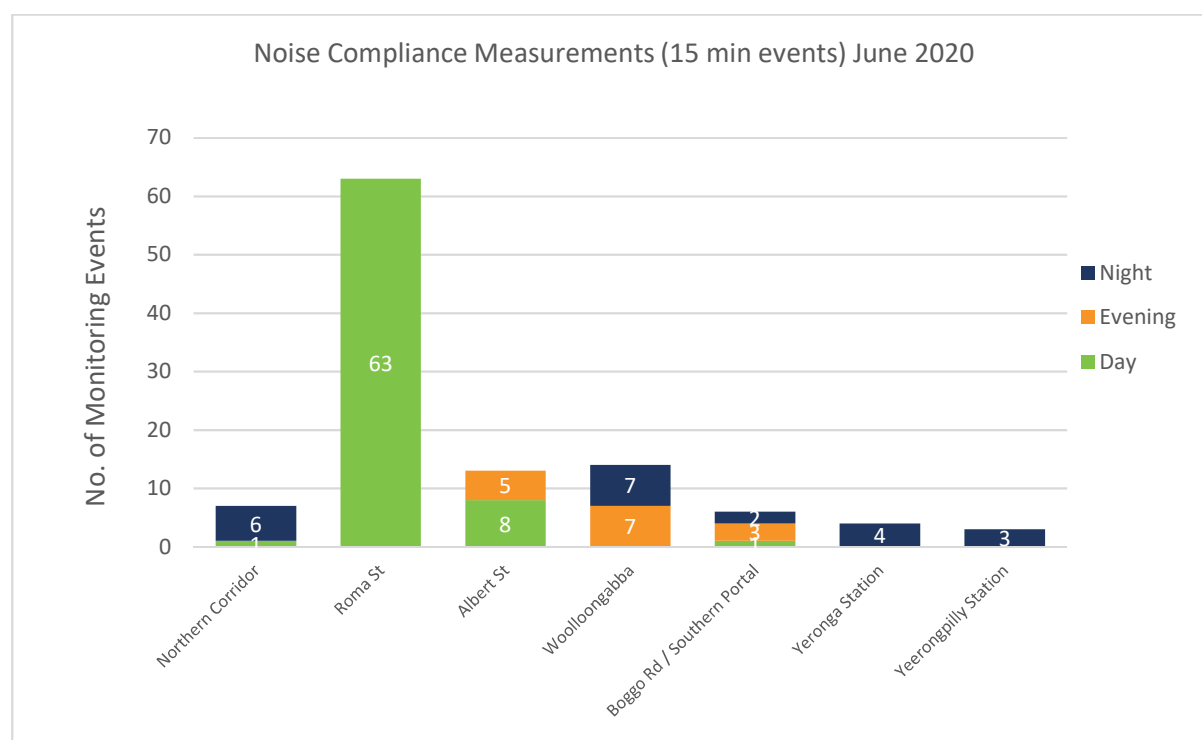
Area	Project Works
Mayne Area	<ul style="list-style-type: none">• Completed settlement monitoring at Mayne Yard North surcharge area.• Removal of unsuitable material off-site.• Lighting tower removal completed.• Site establishment of the ancillary site office.• Installation of erosion and sediment controls.
Northern Area	<ul style="list-style-type: none">• Enabling works ahead of retaining wall works – earthworks for removal and replacement of unsuitable material and drainage south of Land Bridge.• RNA site establishment works have continued with fit out and installation of building services.
Central Area	<ul style="list-style-type: none">• Roma Street - Continued demolition of the Brisbane Transit Centre and Hotel Jen; demolition of former BTC Coach Ramp; shaft and adit excavation; Inner Northern Busway temporary platform preparation works and ongoing site establishment work across the site.
	<ul style="list-style-type: none">• Albert Street - Piling and excavation on Lot 1; shaft excavation on Lot 2 and internal fit out of the acoustic shed, including water treatment plant, and spoil handling area.
	<ul style="list-style-type: none">• Woolloongabba – Drilling and anchoring of piles within station box; site establishment including site offices and worker facilities; decline and shaft excavation and haulage of excavated material.
	<ul style="list-style-type: none">• Boggo Road – Continued site establishment; piling, capping beam installation and excavation works; commencement of busway realignment work.
Southern Area	<ul style="list-style-type: none">• Yeronga station OHLE portals and wire transfers completed.

2.2 Key Environmental Elements

2.2.1 Noise

Noise monitoring was undertaken out of hours to validate predictive modelling during drainage works and track reinstatement in the Northern Corridor, OHLE portal installation at Yeronga, and track removal and reinstatement works at Yeerongpilly. Noise levels did not exceed the project noise goals for out of hours works.

In the Central area noise monitoring was undertaken on 97 occasions during the month as summarised in the graph below and detailed in **Appendix B**. Where internal monitoring was not possible for the contractors, they have undertaken external monitoring at nominated locations. The contractors noise consultants have then nominated suitable façade attenuation corrections, considering receiver property type, to determine compliance against the project's noise goals and to provide further calibration of the completed modelled predictions. The contractors have reported that the project noise goals have been met during this reporting month. A breakdown of the monitoring events by time of day and location is shown below.



2.2.2 Vibration

Vibration monitoring took place on 13 occasions across Roma Street, Albert Street and Boggo Road sites. The contractor reported the results were within the project's nominated goals on each occasion.

2.2.3 Air Quality

2.2.3.1 Dust Deposition

Dust deposition monitoring was conducted at Mayne Yard, Northern Corridor, RNA Showgrounds, Albert Street, Boggo Road, Roma Street and Woolloongabba sites during the month. All monitoring results met the Coordinator-General's air quality goals. A summary of air quality monitoring undertaken is shown in the table below.

Air Quality – Dust Deposition Monitoring			
Area	Active Site*	Monitoring Location	Comments
Mayne Yard	Mayne Yard	Mayne Yard Eastern Air Shed	Results met air quality goal
Northern Area	Northern Corridor	BGGS	Results met air quality goal
		Centenary Pool	Results met air quality goal
	RNA/Exhibition	RNA Showgrounds	Results met air quality goal
Central Area	Albert St	Mary Street	Results met air quality goal
	Boggo Rd / Southern Portal	Quarry Street	Results met air quality goal
		Peter Doherty Street	
	Roma St	Platform 3 Roma Street Station	Results met air quality goal
	Woolloongabba	Russian Orthodox Cathedral	Results met air quality goal
		Woolloongabba Busway	Results met air quality goal

* Fairfield to Salisbury had no active high-risk activities

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2.2.3.2 Particulate Matter (PM10 / TSP)

PM10 and TSP were monitored in the Northern Corridor and at Mayne Yard with all results meeting the Coordinator-General's air quality goals.

Whilst dispersion modelling for the TSD packages does not indicate any exceedances of PM10 or TSP at any active worksite, monitoring of PM10 and TSP was undertaken at the Roma Street, Albert Street and Boggo Road sites throughout the reporting period using mobile air quality units. The contractors noted no exceedances of the air quality goals. The Contractors also reviewed air quality results for PM10 from the DES monitoring stations in Brisbane CBD, South Brisbane, Woolloongabba, and Transurban monitoring stations at Victoria Park (E1) and The Centenary Pool (E2). No exceedances were identified. A summary of particulate matter monitoring is shown below:

Air Quality – PM10/ TSP Monitoring			
Area	Active Site*	Monitoring Location	Comments
Mayne Yard	Mayne Yard	Mayne Yard Eastern Air Shed	Contractor confirmed PM10 and TSP results met air quality goals.
Northern Area	Northern Corridor	Northern Corridor Eastern Air Shed	Contractor confirmed PM10 and TSP results met air quality goals.
Central Area	Albert St	Mary Street QUT Gardens Point	Contractor confirmed results met air quality goal for PM10. 12 days of data reported for TSP and demonstrated compliance with the air quality goal.
	Boggo Rd / Southern Portal	DES Monitoring Station O'Keefe Street, PA Hospital	Contractor confirmed results met air quality goal for PM10. 13 days of data reported for TSP and demonstrated compliance with the air quality goal.
	Roma St	Roma Street Station	Contractor confirmed PM10 and TSP results met air quality goals.
	Woolloongabba	TMR / DES monitoring Station South Brisbane	Contractor confirmed results met air quality goal for PM10. No data available for TSP but deemed compliant based on low PM10

Air Quality – PM10/ TSP Monitoring			
Area	Active Site*	Monitoring Location	Comments
			monitoring results and previous monitoring results.

* RNA and Fairfield to Salisbury had no active high-risk activities

2.2.4 Water Quality

Routine surface water monitoring was undertaken at receiving monitoring locations for all Project worksites this month. The highest rainfall recorded was 16mm on 15 June at the Mayne Yard weather station, indicating a low risk of run-off. Post rainfall monitoring was not triggered.

There were three controlled discharges from the project, two from the Roma Street site and one from the Woolloongabba site. Discharge monitoring results complied with the Environmental Protection (Water) Policy 2009 water quality objectives.

2.2.5 Erosion and Sediment Control

Site specific Erosion and Sediment Control (ESC) Plans have been prepared or updated and implemented for Mayne Yard North, RNA Showgrounds, Northern Area, Fairfield, Yeronga, Roma Street, Albert Street, Woolloongabba and Boggo Road.

2.3 Complaints Management

The Cross River Rail project received four complaints during the month. Three in relation to works at the Roma Street, Boggo Road and Albert Street worksites. One complaint was found to be not project related upon investigation (**Appendix B**). Types of complaints included noise, dust, parking and worker behaviour.

Where attended noise monitoring was in response to a complaint, the contractor confirmed that the works undertaken at the time of the complaint adhered to project requirements. For dust related complaints, the contractor advised stakeholders that air quality monitoring is ongoing and dust mitigation measures are used effectively on site with works adhering to project requirements. All complaints were closed out by the contractor.

For scheduled Out of Hours works, community notification was provided in all instances, as well as regular project updates to the community.

2.4 New Upcoming Project Works

The key new planned Project Works for the coming months include:

Area	New planned works in the coming months
Mayne Area	<ul style="list-style-type: none"> Mayne and Breakfast Creek under track crossings. Demolition of QR buildings. Mayne Yard and Breakfast Creek drainage work.
Northern Area	<ul style="list-style-type: none"> Stormwater installation within northern rail corridor. Demolition work and tree removal works at RNA site. Exhibition-wide relocation of OHLE return conductor. Lanham Street Brisbane City Council yard relocation. Signalisation of Gregory Terrace intersection with Victoria Park access road.
Central Area	<ul style="list-style-type: none"> Roma Street – Enabling works for Services Building to commence in July, building of temporary busway platform to the east of platform 1 and tower crane removal.

Area	New planned works in the coming months
	<ul style="list-style-type: none"> Albert Street – Excavation of station box on Lot 1 to continue to mid-2021, completion of the acoustic shed means 24hr tunnelling will commence within the acoustic enclosure. Lot 3 demolition, early works and site investigations to commence in August. Blasting occurrences on Lot 2 in the tunnel shaft. Woolloongabba – Controlled blasting in station box from late July onwards, cavern excavation and spoil shed construction to occur from late July onwards and 24-hour work to be fully established (on completion of the spoil shed) with shaft excavation and earthworks. Boggo Road – Demolition of busway retaining wall and station box excavation to occur until August.
Southern Area	<ul style="list-style-type: none"> Completion of site establishment works at Fairfield station.

2.5 Non-Compliance Events

No new NCEs have been raised.

The summary of Non-Compliance Events to date is shown in the table below:

Status	Date of event	Category	Area as on the Report	Conditions affected	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Closed									
CRRDA-001-RIS-001	11/09/19	Noise	Yeronga Station	4, 10, 11	11/10/19	14/11/19	26/11/19	18/12/19	01/10/20
CRRDA-002-TSD-001	27/03/20	ESC	Woolloongabba	4, 15, 18	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-003-TSD-002	27/03/20	ESC	Boggo Rd	4, 15, 18	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-004-TSD-003	28/03/20	Traffic	Boggo Rd	4, 10, 14	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-005-TSD-004	27/03/20	Reporting	Albert St, Boggo Rd, Roma St, Woolloongabba	4, 6, 11, 13	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-006-TSD-005	27/03/20	Air Quality	Albert St, Boggo Rd, Roma St, Woolloongabba	13	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
Gate 1 - EM notification to contractor. NCE confirmed Gate 2 - 48 hour NCE notification submitted to CG Gate 3 - 14 day report submitted Gate 4 - 14 day report uploaded to CRR website Gate 5 - Records of mitigation / preventative measures submitted to the CG					Complete				

Throughout the construction activities, events and incidents are routinely investigated to determine and verify compliance with the conditions and management plans in place.

Appendix A – RIS Monthly Report

Monthly CGCR Report – June 2020

**Cross River Rail – Rail, Integration and Systems
Alliance**

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1 Progress Summary

1.1 Summary of Project Works

The following *Project Works* continued in June 2020

- Mayne Yard North
 - Settlement monitoring of localised Mayne Yard North surcharge area, to verify design differential settlement assumptions. This is now complete.
 - Demolition of three Lighting Towers
 - Service location/removal
 - Construction of erosion and sediment controls in accordance with site specific ESC-P
- Northern Corridor
 - Enabling Earthworks south of Land bridge with remove and replace of unsuitable material and subgrade improvement
- RNA
 - RNA site establishment works site with installation of the buildings, services and fit out.
 - Installation of foundations for temporary Return Conductor (RC) Relocation
- F2S
 - Yeronga station OHLE portals and wire transfers. This is now completed.

The following *Project Works* started in June 2020

- Mayne Yard North
 - Queensland Rail (QR) staff relocation and vacating buildings from Mayne Yard North
 - Removal of unsuitable material offsite
- Northern Corridor
 - Enabling works ahead of installation of the retaining wall scope
 - Drainage works south of Land Bridge
- RNA
 - No physical works commenced on site during this period
- F2S
 - No physical works commenced on site for this period

The following *Project Works* are proposed in July 2020

- Mayne Yard North
 - Two Under Track Crossing (UTX) remain to be installed across Up and Down Suburbans
 - Demolition of QR buildings
- Northern Corridor
 - Commence stormwater installation with multiple crews, including possession works on Holding Road 5 and Main Exhibition Lines
- RNA
 - Stage 1 demolition and tree removal works as approved under the State Heritage Approval

- The Exhibition-wide relocation of the down track OHLE Return Conductor is scheduled over an approved rail possession enabling improved access to the area within the corridor.
- Lanham Street Brisbane City Council yard relocation
- F2S
 - Completion of the site establishment at Fairfield Station is Planned for Early July

1.2 Progress Photos



Figure 1: Crane set up for OHLE portal installation was completed without community complaints and exceedances of out of works noise limits

2 Complaints

The below section summarises the complaints relating to the Project Works to be reported in accordance with condition 6(b)(iii) of the CGCR.

Table 1: Summary of Complaints

Date	Location	Issue	CGCR Non-Compliance	Status
None for this reporting period				

3 Environmental Monitoring Results

The below section summarises the monitoring results to be reported in accordance condition 6(b)(i) of the CGCR.

3.1 Acoustics

Condition 11(b) of the CGCR requires that during construction, monitoring and reporting on noise and vibration in accordance with the Noise and Vibration Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

3.1.1 Noise Monitoring

Attended Noise Monitoring was undertaken for

- UTX drainage works and track reinstatement works in the Northern Corridor, and
- OHLE portal installation at Yeronga, and
- Track removal and reinstatement works at Yeerongpilly

These works were undertaken outside of standard working hours. The predictive noise assessments identified that if all proposed machinery was to be used concurrently, at the same location, the closest to the most Sensitive Place (residential), the upper noise goals may be exceeded.

Since monitoring undertaken to date has confirmed that the predictive assessments are typically conservative it was however unlikely the upper noise goals would be exceeded.

In accordance with the C-EMP attended outdoors monitoring was undertaken to validate the predictive assessment. The monitoring once again confirmed that the predictive assessments were conservative with the actual measurements lower than the predictive assessment outcomes.

Noise monitoring because of complaints was not triggered. No complaints related to noise occurred during the reporting period.

3.1.2 Noise monitoring Results

The below table summarises the Noise Monitoring results for reporting period.

Table 3: Summary of Noise Monitoring Data

Location and Receiver type	Type of Monitoring ⁽¹⁾	Working Hours	Noise Type	Purpose of Monitoring	Performance Criterion LA10 (dB) – external ⁽²⁾	Predictive model (LA10 external) ⁽²⁾	Measured LA10 (dB) – external ⁽²⁾	Measured LAeq (dB) – external ⁽²⁾	Was performance criterion exceeded?
263 Gregory Terrace - Residential	Attended - External	Out of Standard Hours Saturday 06/6/20 05:31	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	72	65 - 70	58	60	No exceedance
263 Gregory Terrace - Residential	Attended - External	Out of Standard Hours Wednesday 10/6/20 03:24	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	72	65 - 70	58	61	No exceedance
8 Lake Street - Residential	Attended - External	Out of Standard Hours Saturday 20/6/20 04:49	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	72	74	68	68	No exceedance
8 Lake Street - Residential	Attended - External	Out of Standard Hours Saturday 20/6/20 05:14	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	72	74	71	71	No exceedance
8 Lake Street - Residential	Attended - External	Out of Standard Hours Saturday 20/6/20 05:40	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	72	74	68	66	No exceedance
8 Lake Street - Residential	Attended - External	Out of Standard Hours Saturday 20/6/20 06:04	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	72	74	68	70	No exceedance
N/A - Northern corridor	Attended - External	Standard Hours Friday 26/6/20 08:05	Intermittent	Plant Audit	N/A	N/A	72	71	N/A

Location and Receiver type	Type of Monitoring ⁽¹⁾	Working Hours	Noise Type	Purpose of Monitoring	Performance Criterion LA10 (dB) – external ⁽²⁾	Predictive model (LA10 external) ⁽²⁾	Measured LA10 (dB) – external ⁽²⁾	Measured LAeq (dB) – external ⁽²⁾	Was performance criterion exceeded?
50 Wilkie Street - Residential	Attended - External	Out of Standard Hours Sunday 28/6/20 14:04	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	72	80-85	68	70	No exceedance
66-70 Wilkie Street - Residential	Attended - External	Out of Standard Hours Sunday 28/6/20 14:17	Intermittent	Buffer Distance Test - Model Verification	N/A	80-85	72	72	N/A
66 Wilkie Street - Residential	Attended - External	Out of Standard Hours Sunday 28/6/20 14:33	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	72	80-85	72	71	No exceedance
N/A - Northern corridor	Attended - External	Out of Standard Hours Wednesday 10/6/20 01:48	Intermittent	Plant Audit – Tamper – 21m from source	N/A	N/A	75	75	N/A
N/A - Northern corridor	Attended - External	Out of Standard Hours Wednesday 10/6/20 02:30	Intermittent	Plant Audit – Tamper and Regulator – 8m from source	N/A	N/A	82	84	N/A
N/A - Northern corridor	Attended - External	Out of Standard Hours Wednesday 10/6/20 02:04	Intermittent	Plant Audit – Regulator – 21m from source	N/A	N/A	79	77	N/A
N/A - Northern corridor	Attended - External	Out of Standard Hours Wednesday 10/6/20 02:29	Intermittent	Plant Audit – Tamper – 8m from source	N/A	N/A	83	81	N/A

- Note (1) - Monitoring Method
 - Note 2 of Imposed Condition 11 Table 2 states *Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2017 (PFNC) apply.*
 - Internal noise measurements could not be reasonably undertaken at the locations due the disturbance this would cause the residents as well as the fact these receivers are multi-unit complexes
 - The monitoring was undertaken to validate the model therefore external noise measurements are appropriate to determine the impact of construction noise.
- Note (2) – Façade Attenuation
 - Note 2 of Imposed Condition 11 Table 2 states *Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2017 (PFNC) apply.*
 - The PFNC guideline can no longer be accessed. The Department of Environment and Science (DES) website still states this guideline is under review and is yet to release an alternative guideline
 - Former revisions of the PFNC, in particular Table 7 stated the following regarding typical noise reductions through the building façade:
 - 5 dB – Window wide open
 - 10 dB – Partially closed
 - 20 dB – single glazed, closed
 - 25 dB – Thermal double glazing, closed
 - The RfPC-4 Technical Report considered that all receptors had closed external single glazing for the assessment of construction noise impacts.
 - The Queensland Ombudsman assessed this assumption for the Airport Link Project and recommended that 10dB be adopted for major infrastructure projects in Queensland¹.
 - Additionally, a number of acoustic studies have shown that 10 dB is a suitable assumption for open windows. Most importantly this requirement only applies to temporary rail works within the project footprint and does not apply to long term operational rail noise exposure.
 - Accordingly, it is considered appropriate to consider a 10 dB reduction on this basis. This assumption can be used for predictive modelling and for noise measurements, where indoor noise measurements are not practicable.

¹ https://www.ombudsman.qld.gov.au/ArticleDocuments/218/Airport_Link_Ombudsman_Statement.pdf.aspx, pages 208-210, Section 9.8.6

3.1.3 Vibration Monitoring

There were no vibration intensive activities during the reporting period that triggered the need to undertake vibration monitoring.

Vibration monitoring because of complaints was not triggered. No complaints related to vibration occurred during the reporting period.

3.1.4 Vibration Monitoring Results

Nil for the reporting period.

3.1.5 Interpretation

3.1.5.1 Noise Monitoring

Monitoring of UTX crossing works and rail reinstatement works on the Northern Corridor was undertaken as close as possible to the nearest DAP (263 Gregory Terrace, multistorey brick apartment building), approximately 10m from façade of the building. The measured LA₁₀ and Laeq readings were compliant with the imposed conditions for works outside of standard working hours.

Monitoring of crane set up works associated with the OHLE portal installation at Yeronga Station was undertaken as close as possible to the nearest DAP (8 Lake Street, multistorey modern build townhouses complex), approximately 5m from façade of the closest townhouse to the works. The measured LA₁₀ and Laeq readings were compliant with the imposed conditions for works outside of standard working hours.

Monitoring of track reinstatement and removal works at Yeerongpilly Station was undertaken as close as possible to the two closest DAPs (50 Wilkie Street, multistorey brick apartments complex and 66 Wilkie Street, multistorey modern build apartment complex), approximately 10m and 5m from the façades respectively. The measured LA₁₀ and Laeq readings were compliant with the imposed conditions for works outside of standard working hours.

The RIS scope of works is achieving the outcomes set out by the CGCR and OEMP.

3.1.5.2 Vibration Monitoring

The RIS scope of works is achieving the outcomes set out by the CGCR and OEMP.

3.2 Air Quality

Condition 13(b) of the CGCR requires that during construction, monitoring and reporting on air quality in accordance with the Air Quality Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

Visual Monitoring was undertaken during routine environmental inspections. A total of twelve (16) inspections were undertaken by the environment team.

No issues related to air quality were identified that required corrective actions to be raised.

There were no high risk activities with regards to Air Quality during the reporting period that triggered particulate monitoring.

It is however noted that UNITY has installed the following Air Quality Monitoring devices, therefore data collected from these devices, when active, is reported on in the monthly report regardless of the Project Works occurring.

Table 4: Summary of Air Quality devices

Monitoring Device Installed by UNITY	Area	Name	Date Installed	Status for the Month of June
Dust Deposition Gauge	RNA Showgrounds	AQ-01	13 December 2019	Active
Dust Deposition Gauge	Northern Corridor (near BGGs)	AQ-02	13 December 2019	Active
Dust Deposition Gauge	Northern Corridor (near Centenary Pool)	AQ-03	13 January 2020	Active
Dust Deposition Gauge	Mayne Yard (Eastern Air Shed)	AQ-04	13 February 2020	Active
TSP / PM ₁₀ Monitor	Mayne Yard (Eastern Air Shed)	UNI324	23 April 2020	Active
TSP / PM ₁₀ Monitor	Northern Corridor (Eastern Air Shed)	UNI327	23 April 2020	Active

3.2.1 Dust results

Since passive dust deposition gauges are analysed on a monthly basis, results span from 13 May 2020 to 12 June 2020.

The dust deposition gauges result for the reporting period are detailed below and complied with Condition 13(b) of the CGCR.

Table 5: Dust deposition gauge results for period 13 May 2020 to 12 June 2020.

CGCR Criterion (mg/m ² /day)	AQ-01 Results - RNA Showgrounds (mg/m ² /day)	AQ-02 Results - BGGs (mg/m ² /day)	AQ-03 Centenary Pool (mg/m ² /day)	AQ-04 Abbotsford Rd (E Mayne) (mg/m ² /day)
120	23	17	50	30
Total Rainfall during Period	4.4mm	4.4mm	4.4mm	10.0mm

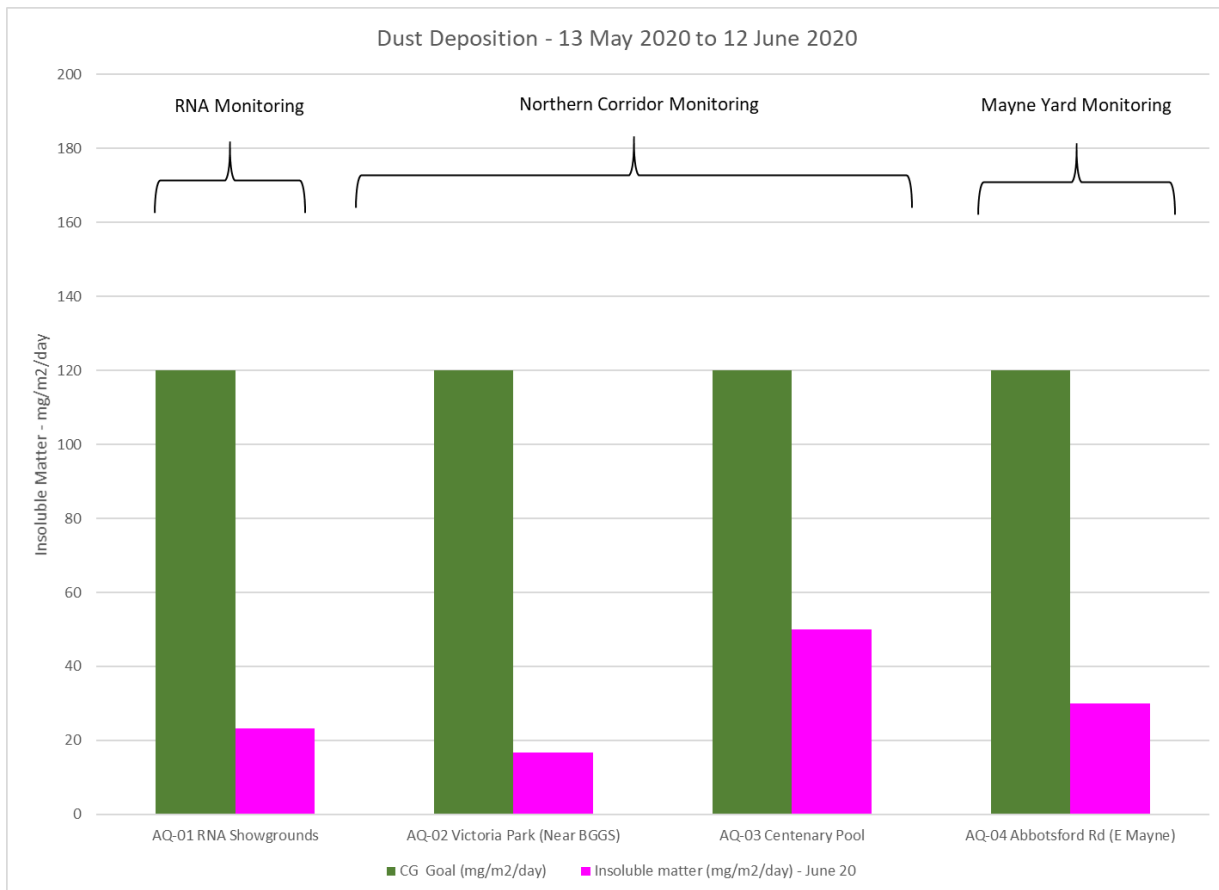


Figure 2: Air Quality Monitoring (Deposited Dust) – 13 May to 12 June 2020 Results

3.2.2 Interpretation

Dust Deposition Results did not exceed the deposited Dust Nuisance Goal.

Visual monitoring during routine inspections during the reporting period did not identify any issues. It is therefore intimated that standard dust mitigation measures were effective at managing dust during the inspections.

3.2.3 Particulates results

3.2.3.1 UNITY Air Quality Monitoring Stations

Unity had two operational Air Quality monitoring stations set up for the reporting period.

External Ambient Air Quality data was collected for total suspended particles (TSP), and particulate matter less than 10 µm (PM₁₀).

PM₁₀ is one of the indicators for which the Coordinator General has imposed a goal of 50 µg/m³ (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

TSP is one of the indicators for which the Coordinator General has imposed a goal of 80 µg/m³ (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

These stations have been set up on site as per AS/NZS 3850 1.1 following consultation with UNITY Air Quality Professionals.

The results are represented in the below figures.

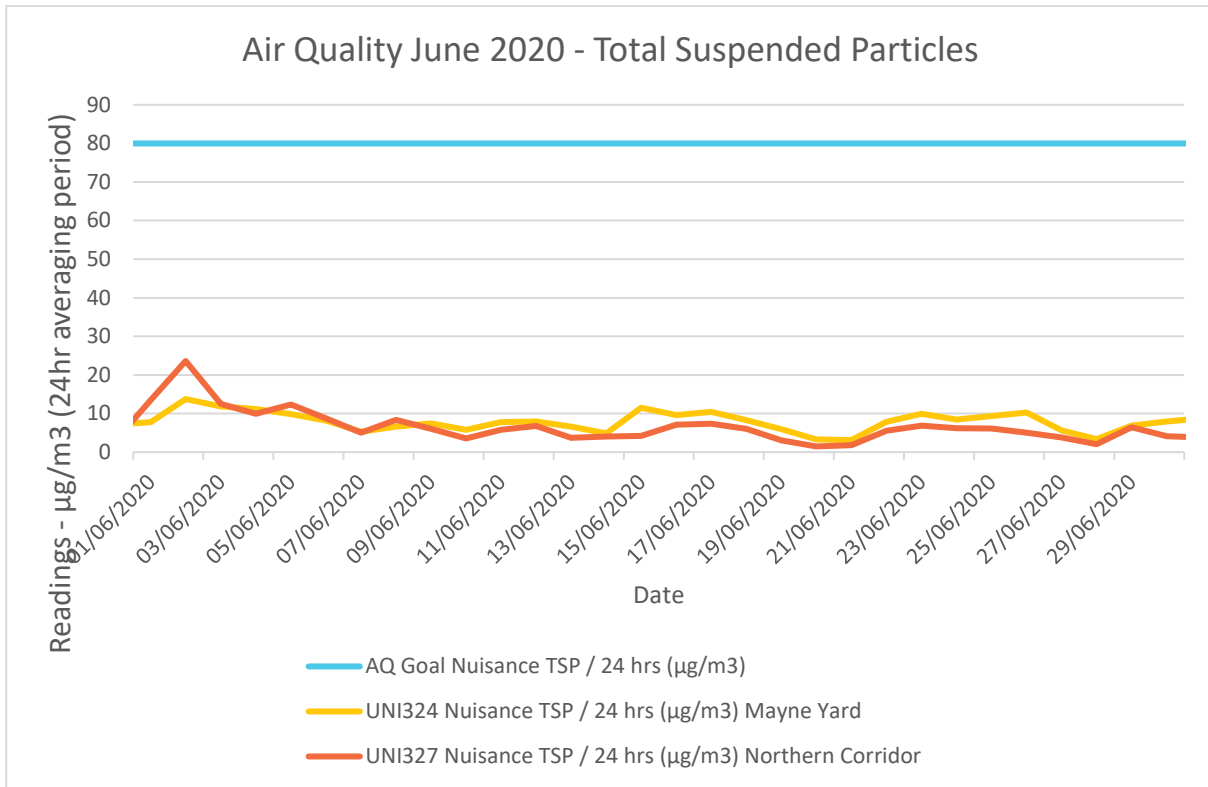


Figure 4: Air Quality Monitoring (TSP) - June 2020 Results

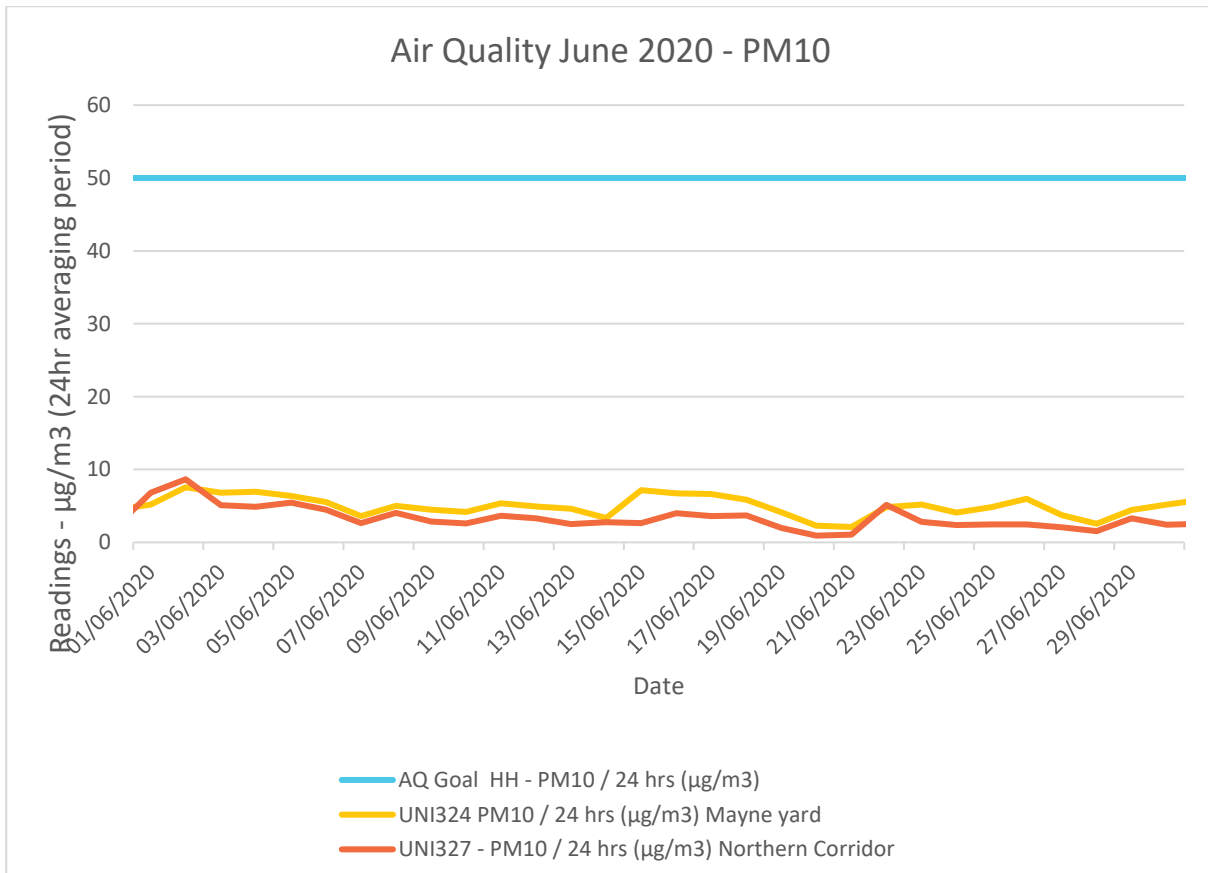


Figure 5: Air Quality Monitoring (PM10) - June 2020 Results

3.2.4 Interpretation

All particulate monitoring results were less than the relevant air quality goals the Project must aim to achieve.

The C-EMP and the AQMP recognise that particulate matter monitoring can be a lag indicator. Therefore, the monitoring regime detailed in the C-EMP consists of a combination of surveillance regimes via inspections at the time the works are occurring and particulate matter monitoring to validate the surveillance regime findings and potential complaints.

There were limited high risk works for Air Quality during the month of June.

There were no complaints relating to dust and all site inspections confirmed that

- There was no visible dust leaving the site boundaries,
- Waters carts were on site and used for dust suppression / fill conditioning
- Stabilised egress was in place and in functioning order at each access points

The RIS scope of works therefore achieved the outcomes set out by the CGCR and OEMP.

3.3 Water Quality – Surface Water

Condition 15(a) requires that discharges of surface water and groundwater from Project Works must comply with the Brisbane River Estuary environmental values and water quality objectives (Basin no.143 – mid-estuary) in the Environment Protection (Water) Policy 2009.

Water Quality monitoring to demonstrate compliance with Condition 15(a) was not triggered.

There were no surface water discharges either active (e.g. dewatering through pumping, sediment basin release) or visibly passive (through temporary or permanent stormwater drainage) from site.

There were no groundwater discharges.

Condition 15(b) of the CGCR requires that during construction, monitoring and reporting on water quality in accordance with the Water Quality Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

A maximum monthly rain record of 16mm over a 24 hour period recorded at the Mayne Yard weather station, which is less than the default trigger for post rainfall monitoring.

Site inspections at the active sites (Mayne Yard North, RNA and Northern Corridor) confirmed that while it was likely some run-off had left site, it had occurred through a series of Erosion and Sediment Control devices installed in accordance with the Site Specific ESC-P.

Subsequent inspections of the relevant receiving water bodies (Breakfast Creek and Barrambin) did not identify any visual evidence of construction related run -off (e.g. no obvious of discoloured discharges from discrete drainage outlets entering the water bodies).

On this basis, in-situ monitoring of physico-chemical parameters was not triggered.

During the reporting period, UNITY undertook one (1) surface water monthly monitoring event. This monitoring is being undertaken as it may inform the Dis-1 Credit for the ISCA Excellent Rating the Project is pursuing.

3.3.1 Rainfall Records

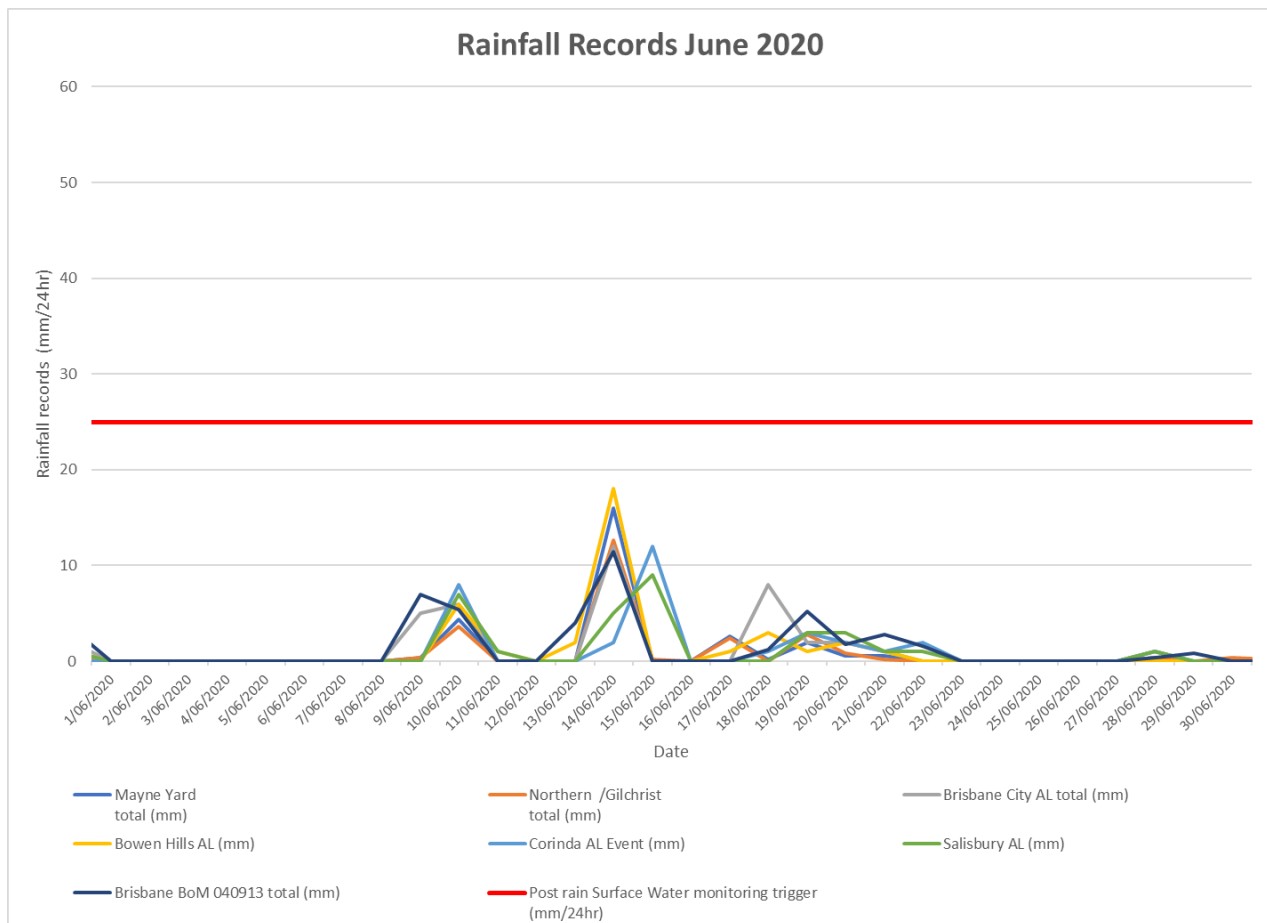


Figure 3: Rainfall - June 2020 Results

3.3.2 Discharge Monitoring

Nil for this reporting period.

3.3.3 C-EMP Monitoring

The Baseline monitoring program was completed in February 2020.

Post rainfall in situ monitoring was not required following a visual inspection of Breakfast Creek and Barrambin (York's Hollow).

The monthly monitoring program for the purpose if the ISCA rating recommenced in June following the hiatus in May 2020. The results are presented in the following sections.

3.3.3.1 Breakfast Creek

The below table summarises the in-situ records collected during one (1) round of routine surface water monitoring at Breakfast Creek, the relevant surface water receiver for Mayne Yard.

Results highlighted in yellow exceed / do not meet the WQOs referenced in imposed Condition 15a.

Table 2: Breakfast Creek

Date	Location	Tide	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (Imposed Condition 15a)				8	20	85-105% saturation	7.0-8.4
15/06/2020	SW 1 – Upstream of Mayne Yard	Falling Brackish to Marine conditions	Monthly Dis-1 Monitoring	7	9	73	7.1
15/06/2020	SW 2 – Adjacent to Mayne Yard	Falling Brackish to Marine conditions	Monthly Dis-1 Monitoring	5	<5	69	7.1
15/06/2020	SW 3 – Downstream of Mayne Yard	Falling Brackish to Marine conditions	Monthly Dis-1 Monitoring	35	28	73	7.1

3.3.3.2 Barrambin (York's Hollow)

The below table summarises the in-situ records collected during one (1) round of surface water monitoring at Barrambin (York's Hollow), the potential surface water receiver for the Northern Corridor.

Results highlighted in yellow exceed / do not meet the WQOs referenced in imposed Condition 15a.

It is however noted that Barrambin (York's Hollow) is not classified as a mid-estuary receiver under the Environmental Protection Policy (Water and Wetland Biodiversity) 2019. The recognised values under this policy are those of a lowland stream with a level of protection for moderately disturbed aquatic ecosystem. These WQOs are also presented in Table 3.

Table 3: Barrambin (York's Hollow)

Date	Location	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (Imposed Condition 15a)			8	20	85-105% saturation	7.0-8.4
Alternative WQOs (relevant EPP)			50	6	85-105% saturation	6.5-8.0
15/06/2020	SW 4 – Downstream of Northern Corridor	Monthly Dis-1 Monitoring	20	8	63	7.1

3.3.3.3 Moolabin Creek, Rocky Water Holes Creek and Stable Swamp Creek

The below table summarises the in-situ records collected during one (1) round of routine surface water monitoring at Moolabin Creek, Rocky Water Holes Creek and Stable Swamp Creek, the relevant surface water receivers for the Southern Corridor (F2S).

Results highlighted in yellow exceed / do not meet the WQOs referenced in imposed Condition 15a.

It is however noted that none of these three (3) creeks are classified as a mid-estuary receiver under the Environmental Protection Policy (Water and Wetland Biodiversity) 2019. The recognised values under this policy are those of a lowland stream with a level of protection for moderately disturbed aquatic ecosystem under the Oxley Creek catchment. These WQOs are also presented in the tables.

Table 4: Moolabin Creek

Date	Location	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (Imposed Condition 15a)			8	20	85-105% saturation	7.0-8.4
Alternative WQOs (relevant EPP)			50	6	85-110% saturation	6.5-8.0
15/06/2020	SW 5 – Upstream rail corridor	Monthly Dis-1 Monitoring	0.22	<5	71	6.7
15/06/2020	SW 6 – Downstream rail corridor	Monthly Dis-1 Monitoring	0.38	<5	75	6.7

Table 5: Rocky Water Holes Creek

Date	Location	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (Imposed Condition 15a)			8	20	85-105% saturation	7.0-8.4
Alternative WQOs (relevant EPP)			50	6	85-110% saturation	6.5-8.0
15/06/2020	SW 7 – Upstream Rail corridor	Monthly Dis-1 Monitoring	11	<5	86	6.4
15/06/2020	SW 8 – Downstream Rail corridor	Monthly Dis-1 Monitoring	14	<5	78	7.2

Table 6: Stable Swamp Creek

Date	Location	Sampling Purpose	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
WQO (Imposed Condition 15a)			8	20	85-105% saturation	7.0-8.4
Alternative WQOs (relevant EPP)			50	6	85-110% saturation	6.5-8.0
15/06/2020	SW 9 – Downstream Rail corridor	Monthly Dis-1 Monitoring	4	<5	90	6.7

3.3.4 Interpretation

Nil for this reporting period. The water quality data collected to inform the credit summary form for Dis-1 will be reviewed holistically once a statistically significant number of samples has been collected for all water systems (recommended 18 to 24 months of data). Interim reviews of the data collected may be provided as part of this report as necessary to provide context to monitoring that is undertaken to demonstrate compliance with the Imposed Conditions.

3.3.5 Interpretation

The RIS scope of works is achieving the outcomes set out by the CGCR and OEMP.

4 Compliance Review

4.1 Non-Compliance Events

The below section summarises the events to be reported in accordance with condition 5 and condition 6(b)(ii) of the CGCR.

A Non-Compliance Event is defined as Project Works that do not comply with the Imposed Conditions.

4.1.1 Non - Compliance Events Summary

Table 7: Summary of Non-Compliance Events

Event Title	Location, Date and time of event	Date the Event was Formally Notified to CG/IEM	Conditions Affected	Date the Event Report Formally Sent to CG/IEM	Status of Event
None for this reporting period					

4.2 C-EMP Compliance

The below table summarise compliance status with the C-EMP and relevant Subplans monitoring requirements for the reporting period.

Table 8: C-EMP and relevant Subplans monitoring requirements – Compliance Status for the reporting period

Aspect	Monitoring requirement	Activities Risk profile	Monitoring undertaken	Compliance status with C-EMP / CEMP Subplan	Effect of the non-compliance
Air Quality	Visual monitoring program + Additional particulate monitoring as required based on the outcomes of the predictive assessment / risk profile	Low - medium	Yes – visual monitoring undertaken as part of routine inspections Additional monitoring for TSP, PM10 and Deposited Dust also undertaken	Compliant	Not Applicable
Noise	Buffer Distance Tests based on the outcomes of the predictive assessment based / risk profile of activities	Medium	Yes	Compliant	Not Applicable
Noise	Plant Noise Audits for Noisy Plant to validate models input as required	-	Yes – undertaken for QR tamping machine and regulator	Compliant	Not Applicable
Noise	Complaints response	-	Not triggered – no complaints	Compliant	Not Applicable
Vibration	Buffer Distance Tests based on the outcomes of the predictive assessment based / risk profile of activities	Low	Not required	Compliant	Not Applicable
Vibration	Complaints response	-	Not triggered – no complaints	Compliant	Not Applicable
Water Quality	Monthly monitoring	-	Yes	Compliant	Not Applicable
Water Quality	Post Rainfall	-	Not triggered	Not Applicable	Not Applicable
Water Quality	Dewatering	-	Not triggered – no dewatering to receiving water systems	Compliant	Not Applicable

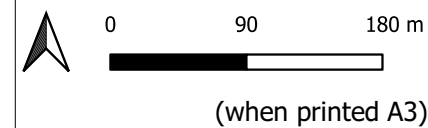
5 Good News Stories

- No Non-Compliance events occurred during the reporting period.
- There were no complaints received associated with the Project Works. This is the seventh month in a row.

Attachment 1 CGCR Non-Compliance Event Report (if required)

None for this reporting period.

Attachment 2 Monitoring Locations – Noise



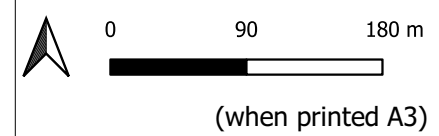
- LEGEND**
- CRR RIS Landmarks
 - Noise Monitoring**
 - Construction Monitoring at Sensitive Places Model Verification
 - Plant Audit
 - DCBD_10May20
 - Rail**
 - +— Rail Network Rail_network

Data Sources
DES
Qld Government
UNITY Alliance
Google Satellite Imagery

**CROSS RIVER RAIL
Noise
Monitoring Locations**

Figure 01	June 2020
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Project ID:	Q01080
Created By:	KG
Last Modified:	14-July-20
Version:	00



- LEGEND**
- Noise Monitoring**
- Buffer Distance Test Model Verification
 - Construction Monitoring at Sensitive Places Model Verification
 - DCBD_10May20
- Rail**
- Stations Railway_stations_and_sid
 - Rail Network Rail_network

Data Sources
DES
Qld Government
UNITY Alliance
Google Satellite Imagery

**CROSS RIVER RAIL
Noise
Monitoring Locations**

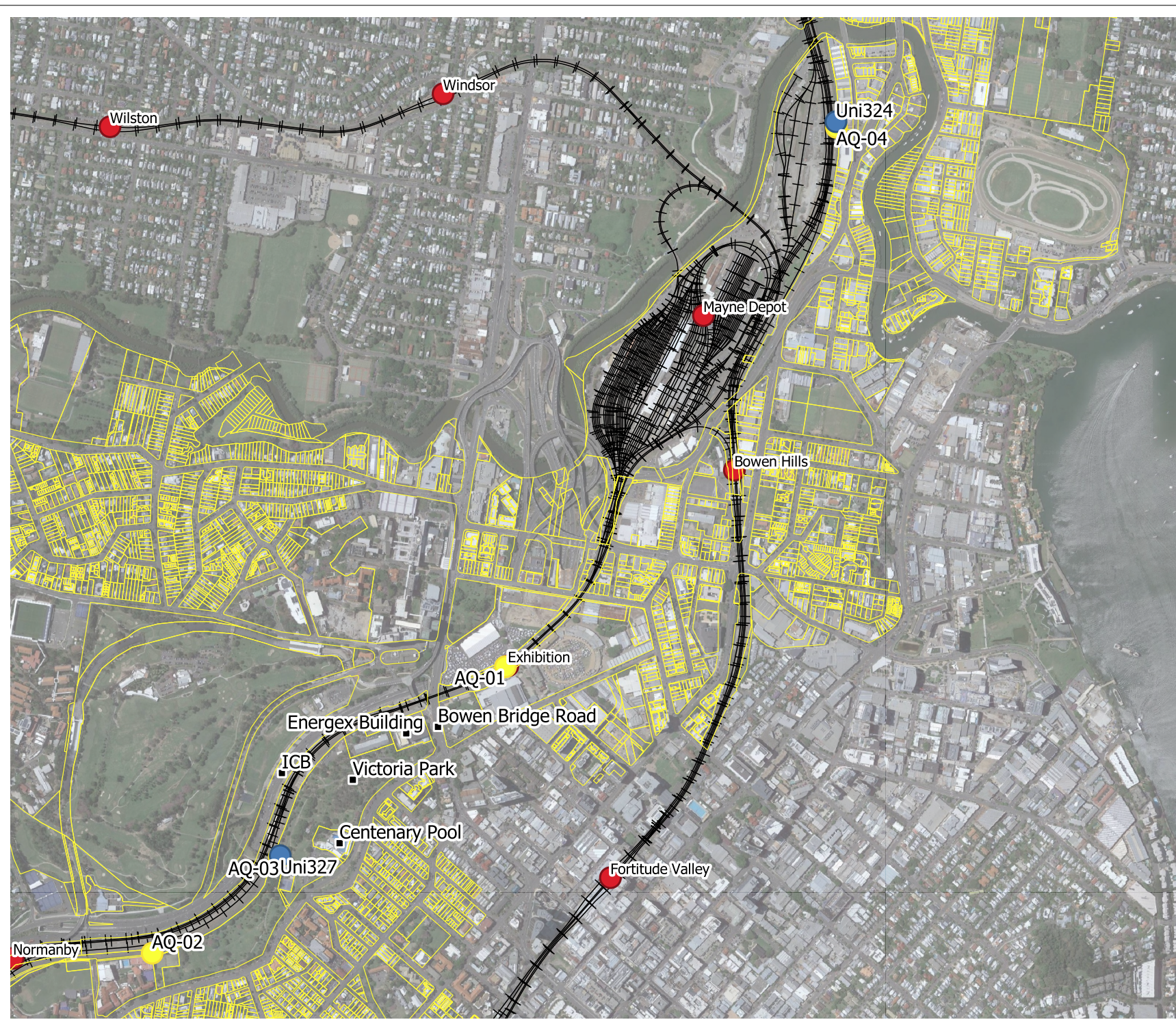
Figure 02	June 2020
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Project ID:	Q01080
Created By:	KG
Last Modified:	14-July-20
Version:	00

Attachment 3 Monitoring Locations – Vibration

Not applicable for the reporting period

Attachment 4 Monitoring Locations – Air Quality



0 200 400 m

(when printed A3)

LEGEND

- CRR RIS Landmarks

Air Quality Monitoring

- DDG
- TSP & PM10
- DCBD_10May20

Rail

- Stations Railway_stations_and_sid
- Rail Network Rail_network

Data Sources

DES
Qld Government
UNITY Alliance
Google Satellite Imagery

CROSS RIVER RAIL Air Quality Monitoring Locations

**Figure
01**

June 2020

Project ID: Q01080
Created By: KG
Last Modified: 14-July-20
Version: 00

Attachment 5 Monitoring Locations – Surface Water

Appendix B – TSD Monthly Report

COORDINATOR GENERAL MONTHLY REPORT: JUNE 2020

Prepared in accordance with Coordinator-General Imposed Condition 6 - Reporting.

1. Monthly Monitoring Summary

It is the project's intent to aim for the Goals and Objectives relevant to vibration, noise, air quality and water monitoring within the practical extent of delivering the project.

Vibration monitoring was conducted on thirteen (13) occasions, and noise monitoring was conducted on ninety-seven (97) occasions during June 2020. Each vibration and noise monitoring event confirmed works adhered to project requirements.

Ambient air quality monitoring was conducted at the Roma Street, Albert St, Woolloongabba and Boggo Rd precinct sites during June 2020. Air quality monitoring confirmed works adhered to project requirements.

Water quality monitoring was conducted before the release of water from the site on three (3) occasions. Each monitoring event confirmed project requirements were adhered to. One (1) round of surface water quality monitoring was also conducted that confirmed no impacts were generated by the project.

2. CG Monthly Report – Compliance Assessment Against Imposed Conditions

Whilst not a requirement of Imposed Condition 6, CBGU offers the below Compliance Status Table as a good-will gesture to demonstrate the project's ongoing environmental performance.

Table 1: Compliance Status – CG Imposed Conditions

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
1.	General conditions – compliance with the Project Changes relevant to the Contractor's scope.	Yes	Project works have been conducted compliant with the Imposed Conditions.
2.	Outline Environmental Management Plan – timely submission to the Coordinator-General, including required sub plans.	N/A	The OEMP is not an obligation of the CBGU Joint Venture.
3.	Design – the achievement of the Environmental Design Requirements.	Yes	Design and implementation proceeded in accordance with the Environmental Design Requirements.
4.	Construction Environmental Management Plan – all relating to Relevant Project Works.	Yes	Construction Environmental Plan (CEMP) (Rev 6) was endorsed by the Environmental Monitor in June 2020 and continues to manage Relevant Project Work.
5.	Compliance and Incident management – Non-compliance events, notifications and reporting.	Yes	Nil non-compliances occurred during the monitoring period (refer to Section 4).
6.	Reporting – Monthly and Annual reporting.	Yes	All reporting requirements are completed in accordance with Imposed Condition 6.
7.	Environmental Monitor – engaged and functions resumed.	Yes	An Environmental Monitor (EM) is appointed to the Project and CBGU is committed to working collaboratively to aid the EM's functions under Imposed Condition 7.
8.	Community Relations Monitor – engaged and functions resumed.	Yes	A Community Relations Monitor (CRM) is appointed to the project, and CBGU is committed to working collaboratively to aid the CRM's functions under Imposed Condition 8.
9.	Community engagement plan – developed and endorsed by Environmental Monitor.	Yes	A Community Engagement Plan (CEP) has been developed and implemented in accordance with Imposed Condition 9. The CEMP has been endorsed with the CEP.
10.	Hours of work – works undertaken during approved hours.	Yes	Project works have been conducted in accordance with the approved hours of work.

11.	Noise – Work must aim to achieve internal noise goals for human health and well-being.	Yes	Project work has aimed to achieve internal noise goals for human health and well-being. Where internal noise levels have been unable to be measured, suitable noise reductions have been applied in accordance with Imposed Condition 11. Noise monitoring data is provided within Section 3.2.
	Vibration – Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	Project work has aimed to achieve vibration goals for cosmetic damage, human comfort and sensitive buildings. Vibration monitoring data is provided within Section 3.1.
12.	Property damage relating to ground movement	Yes	The management of potential impacts relating to property damage has been completed in accordance with Imposed Condition 12.
13.	Air quality – Works must aim to achieve air quality goals for human health and nuisance.	Yes	Project works have aimed to achieve air quality goals. Air quality monitoring data is provided within Section 3.3.
14.	Traffic and transport – Works must minimise adverse impacts on road safety and traffic flow.	Yes	Project works have been conducted in a manner that has minimised adverse impacts on road safety and traffic flow.
15.	Water quality – Works must not discharge surface water and groundwater from the construction site above the relevant environmental values and water quality objectives.	Yes	The project possesses processes that ensure water quality is managed in accordance with Imposed Condition 15.
16.	Water resources – evaluate potential impact, plan works, implement controls and monitor the inflow of groundwater associated with drawdown.	Yes	Project works are managed in accordance with Imposed Condition 16.
17.	Surface water – Must be designed to avoid inundation from stormwater due to a 2-year (6hr) ARI rainfall event and flood waters due to a 5-year ARI rainfall event and constructed to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.	Yes	Design of the Project considers the requirements of Imposed Condition 17.
18.	Erosion and sediment control – Provisions for erosion and sediment control must be consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS52.	Yes	The project possesses processes that ensure erosion & sediment control is managed in accordance with Imposed Condition 18.
19.	Acid Sulfate Soils managed as per the <i>Queensland Acid Sulfate Soil Technical Manual</i> .	Yes	The project possesses processes that ensure erosion & sediment control is managed in accordance with Imposed Condition 19.

20.	Landscape and open space – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria park	Yes	Project works are designed and implemented in accordance with Condition 20.
21.	Worksite rehabilitation – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	Yes	Project works are designed and implemented in accordance with Condition 21.

1. Environmental Monitoring Results

Monitoring data is provided below in accordance with Imposed Condition 6(b)(i).

3.1 Vibration

Vibration requirements (levels) are defined as goals within Imposed Condition 11. The goals are to be aimed for.

The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.

Thirteen (13) vibration monitoring sessions were conducted during 2020.

All vibration monitoring adhered to project requirements and is detailed in the table below.

Table 2: Vibration Monitoring Data

Start Date	Time (AM/PM)	Finish Date	Location (Street Name) (Construction Precinct)	Average Vibration level (mm/s)	Max Vibration Level (mm/s)	Vibration Goal (mm/s)	Receiver Type	Adhered to Project Requirements (Yes / No)
1/06/2020	8:24 AM	5/06/2020	Roma Street Heritage Station (Roma Street Precinct)	0.1	0.25	2	Heritage Structure	Yes
1/06/2020	3:42 PM	2/06/2020	Mary Street (Albert Street Precinct)	0.1	1.17	50	Residential	Yes
2/06/2020	1:09 PM	4/06/2020	Mary Street (Albert Street Precinct)	0.08	0.15	50	Residential	Yes
5/06/2020	9:56 AM	9/06/2020	Roma Street Heritage Station (Roma Street Precinct)	0.07	0.32	2	Heritage Structure	Yes
5/06/2020	2:12 PM	8/06/2020	Mary Street (Albert Street Precinct)	0.15	7.29	50	Residential	Yes
8/06/2020	9:03 AM	10/06/2020	Mary Street (Albert Street Precinct)	0.18	2.18	50	Residential	Yes

9/06/2020	10:13 AM	12/06/2020	Roma Street Heritage Station (Roma Street Precinct)	0.09	0.17	2	Heritage Structure	Yes
9/06/2020	8:55 AM	15/06/2020	Joe Backer Street (Boggo Road Precinct)	0.08	0.09	0.5	Commercial / Laboratories	Yes
12/06/2020	12:44 AM	16/06/2020	Roma Street Heritage Station (Roma Street Precinct)	0.09	0.21	2	Heritage Structure	Yes
16/06/2020	11:35 AM	19/06/2020	Roma Street Heritage Station (Roma Street Precinct)	0.12	0.36	2	Heritage Structure	Yes
19/06/2020	10:37 AM	19/06/2020	Roma Street (Roma Street Precinct)	0.5	1.37	50	Commercial	Yes
19/06/2020	11:42 AM	23/06/2020	Roma Street Heritage Station (Roma Street Precinct)	0.10	0.4	2	Heritage Structure	Yes
23/06/2020	2:07 PM	30/06/2020	Roma Street Heritage Station (Roma Street Precinct)	0.1	0.53	2	Heritage Structure	Yes

3.2 Noise

Noise requirements (levels) are defined as goals within Imposed Condition 11. The goals are to be aimed for.

The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.

Noise monitoring was conducted on ninety-seven (97) occasions during June 2020.

All noise monitoring data adhered to project requirements and is provided in the table below.

Table 3: Noise Monitoring Data

Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External ^[3] Monitoring	Activity	Noise Goal LA10 ^[1]	Noise level LA10 ^[1]	Noise Goal LAeq ^[2]	Noise level LAeq ^[2]	Adhered to Project Requirements (Yes / No)
1/06/2020	2:41:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	63.2	50	60.6	Yes
1/06/2020	3:01:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	67	72.4	57	70	Yes
1/06/2020	2:24:00 PM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	79.4	62	75.8	Yes
2/06/2020	7:19:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	74.9	62	72.5	Yes
2/06/2020	7:40:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	73.7	62	71.5	Yes
2/06/2020	6:50:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	70.8	62	68.8	Yes
2/06/2020	11:26:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	73.5	62	71.8	Yes

2/06/2020	11:54:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	73.8	62	71.4	Yes
2/06/2020	12:29:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	76.6	50	71.3	Yes
2/06/2020	1:18:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	83.9	62	80.7	Yes
2/06/2020	2:18:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	78.5	62	74.3	Yes
2/06/2020	2:38:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	87.4	62	82.5	Yes
2/06/2020	8:20:00 PM	Annerley Road (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	49	62.2	42	59.7	Yes
3/06/2020	8:13:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	78.1	62	73	Yes
3/06/2020	8:30:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	75.8	62	70.8	Yes
3/06/2020	8:47:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	78.6	62	72.8	Yes
3/06/2020	9:08:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	69.2	50	66.7	Yes
3/06/2020	3:18:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	72.7	62	71.2	Yes
3/06/2020	8:50:00 PM	Annerley Road (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	49	64.3	42	61.2	Yes
3/06/2020	9:25:00 PM	Annerley Road (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	49	63.1	42	60.7	Yes
3/06/2020	10:00:00 PM	Annerley Road (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	49	62.7	42	60.7	Yes

3/06/2020	6:37:00 PM	Stanley Street (Woolloongabba Precinct)	Background Data	External	Earthworks & Soil Anchoring	62	68.7	52	65.4	Yes
4/06/2020	1:39:00 PM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	62	70.7	52	67.6	Yes
4/06/2020	1:07:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	75.4	62	71.2	Yes
4/06/2020	9:21:00 PM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	62	70.5	52	68.1	Yes
5/06/2020	9:03:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	77.9	62	75.3	Yes
5/06/2020	9:27:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	67.8	62	64.6	Yes
5/06/2020	10:20:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	85.3	62	81.1	Yes
5/06/2020	3:28:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	73.5	62	71.5	Yes
8/06/2020	1:36:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	74.9	62	72.1	Yes
8/06/2020	1:52:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	78.3	62	72.8	Yes
8/06/2020	2:10:00 PM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	79.2	62	73.4	Yes
9/06/2020	9:17:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	69.4	62	66	Yes
9/06/2020	9:45:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	68.5	50	65	Yes
9/06/2020	10:16:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	67.5	62	66.9	Yes

9/06/2020	10:34:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	70.7	50	68	Yes
9/06/2020	10:56:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	63.1	50	60.4	Yes
9/06/2020	11:15:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	67	76	57	72.8	Yes
9/06/2020	10:04:00 PM	Stanley Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	54	64.8	47	64.4	Yes
9/06/2020	9:34:00 PM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	62	70.4	52	66	Yes
9/06/2020	6:39:00 PM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	62	73.8	52	70	Yes
10/06/2020	10:44:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	64.4	50	61.5	Yes
10/06/2020	11:20:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	64.7	50	61.7	Yes
10/06/2020	11:42:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	79.6	62	76.5	Yes
10/06/2020	10:30:00 AM	Joe Baker Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Site Establishment	77	83.3	67	77.3	Yes
10/06/2020	11:02:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	70.8	62	67.7	Yes
10/06/2020	11:55:00 PM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	54	65.6	47	60.9	Yes
10/06/2020	12:04:00 AM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	54	69.1	47	65.5	Yes
11/06/2020	8:08:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	74.4	62	70.4	Yes

11/06/2020	8:48:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	85	62	79.3	Yes
11/06/2020	12:43:00 AM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	54	57.9	47	54.3	Yes
12/06/2020	7:52:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	67.4	50	62.9	Yes
12/06/2020	12:48:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	67.3	62	64.3	Yes
12/06/2020	8:13:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	67	75.6	57	73	Yes
12/06/2020	1:03:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	68.4	62	65.2	Yes
12/06/2020	7:32:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	71.4	62	70	Yes
15/06/2020	8:47:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	67.2	62	64.5	Yes
15/06/2020	2:35:00 PM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	72.2	62	69.6	Yes
15/06/2020	2:52:00 PM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	76.6	62	73.5	Yes
15/06/2020	3:12:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	67	72.7	57	70.2	Yes
15/06/2020	9:05:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	75.3	62	71.2	Yes
15/06/2020	11:20:00 PM	Peter Doherty Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Station box Excavation	49	44.7	42	40.7	Yes
16/06/2020	1:53:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	63.7	62	61.2	Yes

16/06/2020	11:09:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	66.2	62	63.9	Yes
16/06/2020	10:52:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	71	62	67.1	Yes
16/06/2020	2:10:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	77.9	62	73.5	Yes
16/06/2020	2:27:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	80.7	62	75.9	Yes
16/06/2020	2:58:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	81.3	62	76.4	Yes
16/06/2020	12:25:00 AM	Elliot Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Station box Excavation	59	50.9	52	49.1	Yes
16/06/2020	9:33:00 PM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	62	69.4	52	65.1	Yes
16/06/2020	9:57:00 PM	Ellis Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	54	59	47	57.2	Yes
17/06/2020	8:15:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	80.8	62	76.3	Yes
17/06/2020	8:49:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	60	66.3	50	63	Yes
17/06/2020	9:22:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	81.9	62	76.6	Yes
17/06/2020	9:50:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	67	71.2	57	68.3	Yes
17/06/2020	2:47:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	81.5	62	77.3	Yes
17/06/2020	3:09:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	60	63.4	50	60	Yes

18/06/2020	10:03:00 PM	Reid Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	49	57.4	42	56.1	Yes
18/06/2020	10:27:00 PM	Anglesey St (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	49	55.9	42	54.2	Yes
19/06/2020	12:01:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	67.8	62	65.1	Yes
22/06/2020	1:03:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	75.5	62	74.2	Yes
22/06/2020	1:20:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	72	72	62	70	Yes
22/06/2020	2:23:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	72	73.2	62	70.2	Yes
23/06/2020	8:54:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	70.2	50	67.5	Yes
23/06/2020	3:11:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	73	50	69.1	Yes
24/06/2020	12:47:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	75.5	50	71.9	Yes
24/06/2020	1:03:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	73.5	50	69.7	Yes
24/06/2020	6:29:00 PM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Construction Stage 3	50	42.6	40	42.4	Yes
24/06/2020	7:20:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	67	79.4	57	73.2	Yes
24/06/2020	7:36:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	67	70.9	57	67.6	Yes
24/06/2020	7:57:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	67	71.2	57	69.1	Yes

26/06/2020	9:15:00 PM	Vulture Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Earthworks & Soil Anchoring	62	68.7	52	65.2	Yes
26/06/2020	12:00:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Stage 2 Demolition and Tunnel Construction	60	73.5	50	69.8	Yes
29/06/2020	9:12:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Stage 2 Demolition and Tunnel Construction	67	73.3	57	71.3	Yes
30/06/2020	7:05:00 PM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Construction Stage 3	67	74.7	57	73.2	Yes
30/06/2020	7:32:00 PM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Construction Stage 3	50	43.1	40	42.9	Yes

- [1] Intermittent noise goal (LA10)
- [2] Continuous noise goal (LAeq)
- [3] In accordance with Imposed Condition 11 where internal noise levels were unable to be measured, external noise goals were developed by an acoustic specialist using the following standards: ISO 140-5:1998 Acoustics – Measurement of Sound Insulation in Buildings and of Building Elements, Part 5: Field measurements of airborne sound insulation of façade elements and facades and ISO 354:1985 Acoustics – Measurement of sound absorption in a reverberation room.

3.3 Air Quality

3.3.1 Deposited Dust Results

Air quality requirements (levels) are defined as goals within Imposed Condition 13. The goals are to be aimed for.

The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.

Dust deposition monitoring was performed during June 2020.

The dust deposition gauges result for the reporting period are detailed below, and all monitoring data adhered to project requirements.

Table 4: Air Quality Monitoring – Deposited Dust Data

Location	Project Wide Air Quality Criteria & Goals ^[4]			Monitoring results	Comments
	Criterion	Air Quality Indicator	Goal		
Roma Street Precinct/ Northern Portal	Nuisance	Deposited dust	120 mg/m2/day	23.33 mg/m2/day	Air quality monitoring was performed during the reporting period. All results adhered to project requirements.
Albert Street Precinct				30.0 mg/m2/day	
Woolloongabba Precinct				40.0 mg/m2/day 53.3 mg/m2/day	
Boggo Road Precinct/ Southern Portal				26.7 mg/m2/day 33.3 mg/m2/day	

- [4] Project works must aim to achieve construction air quality goals. The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.

3.3.2 Particulates and Ambient Air Quality Results

Total Suspended Particules (TSP) and particulate matter less than 10 μm (PM10) monitoring were conducted during June 2020, and in accordance with imposed Condition 13.

TSP and PM10 are monitored using portable air quality units, as well as nearby Government air quality stations. Targeted monitoring of potential dust-generating activities is conducted by the portable air quality units and was completed at the Roma Street, Albert Street, and Boggo Road Precincts during June 2020. Three (3) Government air quality stations near to the Construction Precincts are also utilised. All monitoring data confirmed TSP and PM10 monitoring data adhered to project requirements and is provided below.

Table 5: Targeted Air Quality Monitoring – Total Suspended Particles and PM10 Data

Date	Roma Street				Albert Street				Boggo Road			
	TSP GOAL	TSP	PM10 GOAL	PM10	TSP GOAL	TSP	PM10 GOAL	PM10	TSP GOAL	TSP	PM10 GOAL	PM10
	$(\mu\text{g}/\text{m}^3/24 \text{ hr})$				$(\mu\text{g}/\text{m}^3/24 \text{ hr})$				$(\mu\text{g}/\text{m}^3/24 \text{ hr})$			
1-June-20	80	16.36	50	15.57	80	10.88	50	10.81	80	-	50	-
2-June-20	80	4.29	50	3.99	80	3.38	50	3.24	80	-	50	-
3-June-20	80	9.7	50	9.4	80	7.18	50	7.10	80	-	50	-
4-June-20	80	14.06	50	13.56	80	7.61	50	7.56	80	-	50	-
5-June-20	80	10.51	50	10.32	80	6.12	50	6.12	80	-	50	-
6-June-20	80	19.36	50	19.25	80	-	50	-	80	-	50	-
7-June-20	80	18.08	50	18.02	80	6.38	50	6.35	80	-	50	-
8-June-20	80	19.48	50	19.36	80	15.19	50	15.15	80	-	50	-
9-June-20	80	12.01	50	11.79	80	14.81	50	14.75	80	-	50	-
10-June-20	80	11.26	50	11.18	80	7.23	50	7.23	80	-	50	-
11-June-20	80	8.75	50	8.61	80	5.27	50	5.27	80	-	50	-
12-June-20	80	10.49	50	10.3	80	8.53	50	8.51	80	-	50	-
13-June-20	80	12.84	50	12.63	80	9.70	50	9.68	80	-	50	-
14-June-20	80	8.77	50	8.7	80	-	50	-	80	-	50	-
15-June-20	80	7.87	50	7.72	80	-	50	-	80	-	50	-
16-June-20	80	14.2	50	13.91	80	-	50	-	80	-	50	-
17-June-20	80	12.98	50	12.7	80	-	50	-	80	6.31	50	6.28

18-June-20	80	8.84	50	8.61	80	-	50	-	80	10.55	50	10.53
19-June-20	80	8.02	50	7.91	80	-	50	-	80	5.45	50	5.42
20-June-20	80	12.05	50	12	80	-	50	-	80	8.33	50	8.30
21-June-20	80	7.22	50	7.11	80	-	50	-	80	10.90	50	10.90
22-June-20	80	5.45	50	5.23	80	-	50	-	80	8.49	50	8.46
23-June-20	80	3.0	50	2.88	80	-	50	-	80	4.66	50	4.60
24-June-20	80	2.82	50	2.7	80	-	50	-	80	2.26	50	2.18
25-June-20	80	11.14	50	10.87	80	-	50	-	80	1.75	50	1.72
26-June-20	80	9.98	50	9.86	80	-	50	-	80	7.27	50	7.23
27-June-20	80	12.08	50	11.96	80	-	50	-	80	7.75	50	7.71
28-June-20	80	7.79	50	7.75	80	-	50	-	80	10.65	50	10.63
29-June-20	80	13.23	50	13.1	80	-	50	-	80	6.98	50	6.98
30-June-20	80		50		80	-	50	-	80		50	

CBGU also utilises Government air quality monitoring stations to monitor PM10 near to the project sites. The results during this reporting period were as follows:

- Brisbane CBD: PM₁₀ daily Maximum average: **20.0 µg/m³** (<https://apps.des.qld.gov.au/air-quality/chart/?station=cdb¶meter=18&date=1/06/2020&timeframe=month>)
- South Brisbane: PM₁₀ daily Maximum average: **14.1 µg/m³** (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/06/2020&timeframe=month>)
- Woolloongabba: PM₁₀ daily Maximum average: **26.5 µg/m³** (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/06/2020&timeframe=month>)

The graphical representation of the Government air quality data is presented in the below charts (refer to Figure 1-3).

There were no exceedances of the PM10 daily criterion recorded at the air quality stations for which the Brisbane CBD, Woolloongabba and Boggo Rd worksites operate near to.

Particle PM₁₀ at Brisbane CBD, 1–30 June 2020 [about Particle PM₁₀](#)

[Brisbane CBD station overview](#)

The guideline for Particle PM₁₀ is 50 µg/m³ (24hr avg).

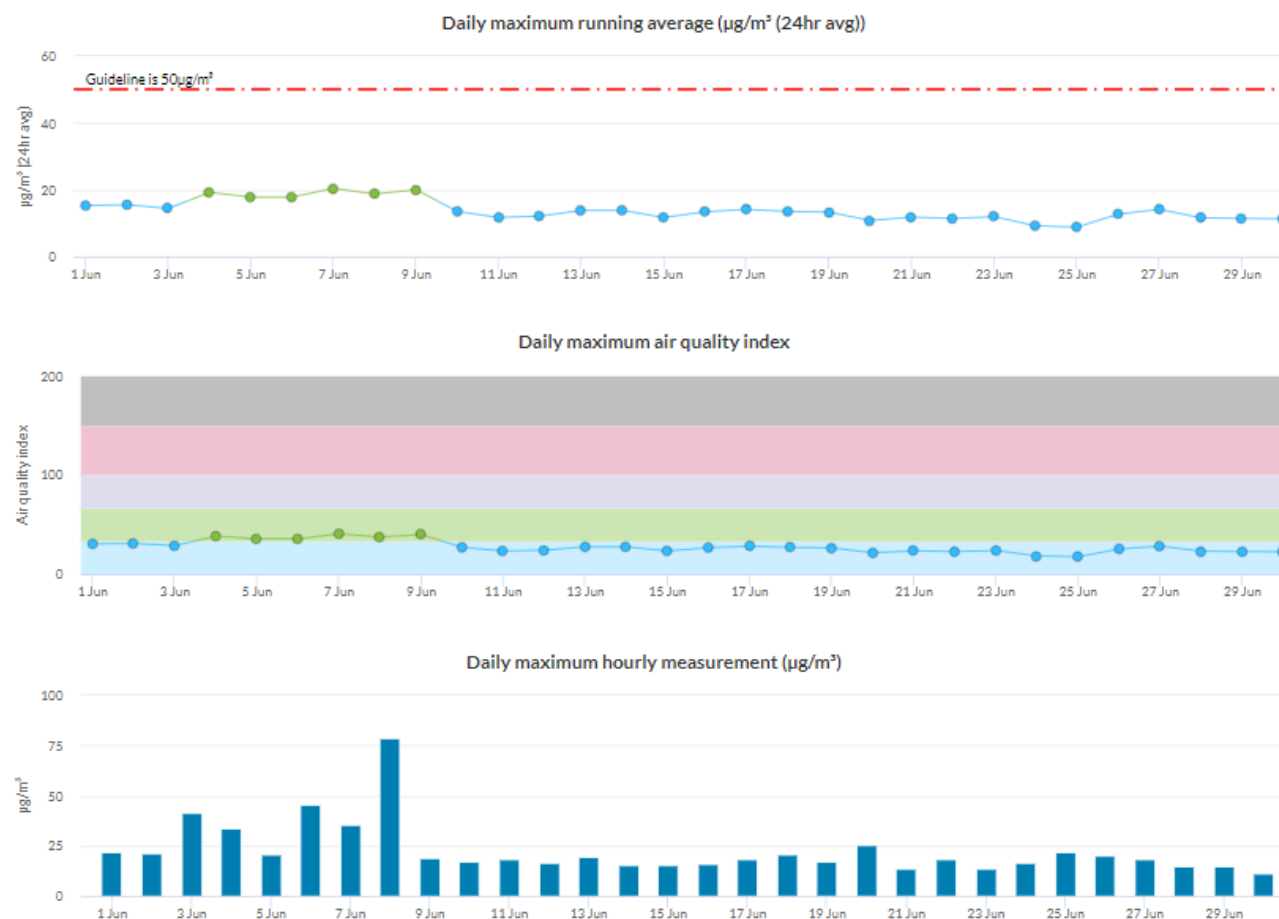


Figure 1: Brisbane CBD – DES Station - PM₁₀ graph for June 2020 (reproduction from the DES website accessed June 2020)

Particle PM₁₀ at Southport, 1–30 June 2020 [about Particle PM₁₀](#)

[Southport station overview](#)

The guideline for Particle PM₁₀ is 50 µg/m³ (24hr avg).

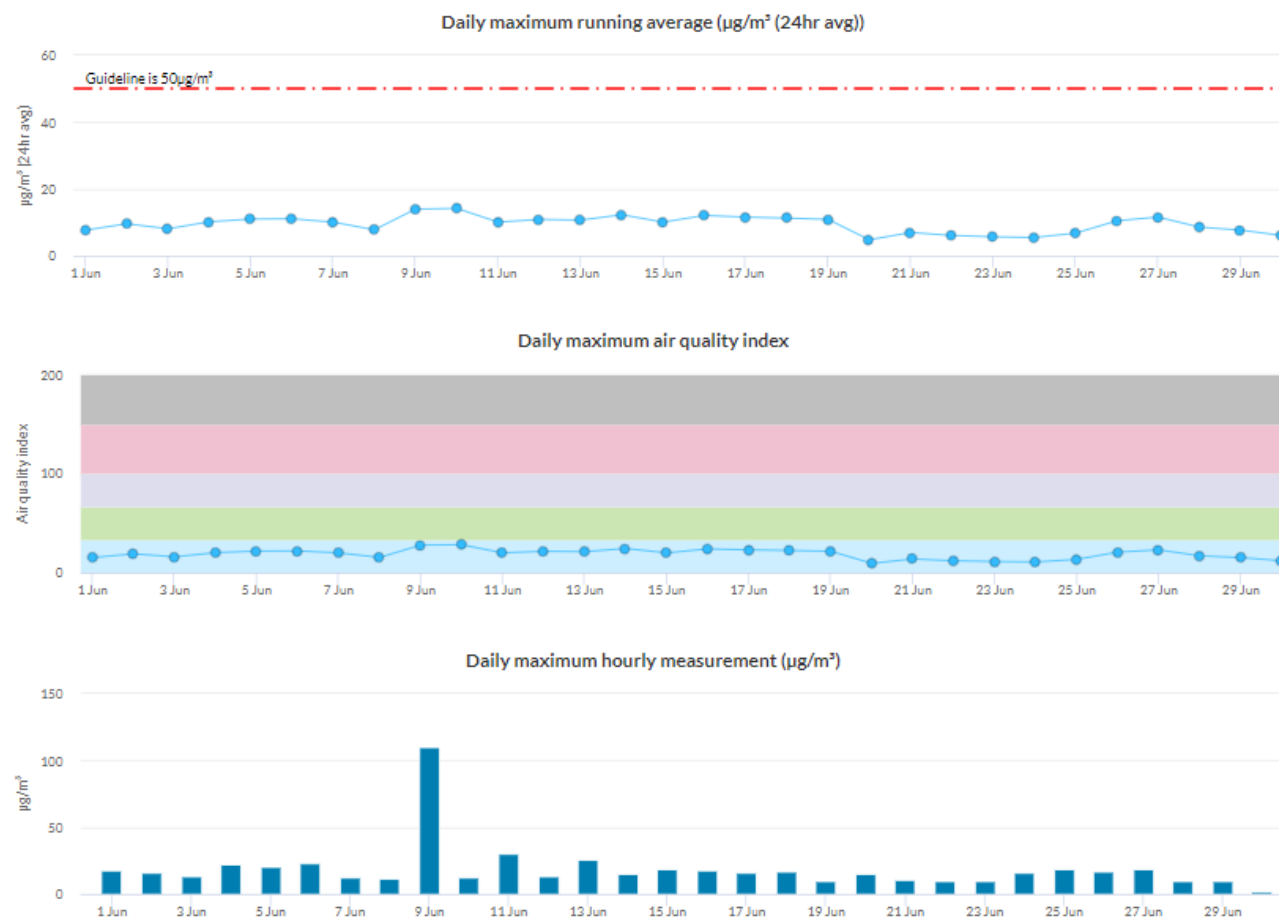


Figure 2: South Brisbane – DES Station - PM₁₀ graph for June 2020 (reproduction from the DES website accessed June 2020)

Particle PM₁₀ at Woolloongabba, 1–30 June 2020 [about Particle PM₁₀](#)

[Woolloongabba station overview](#)

The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

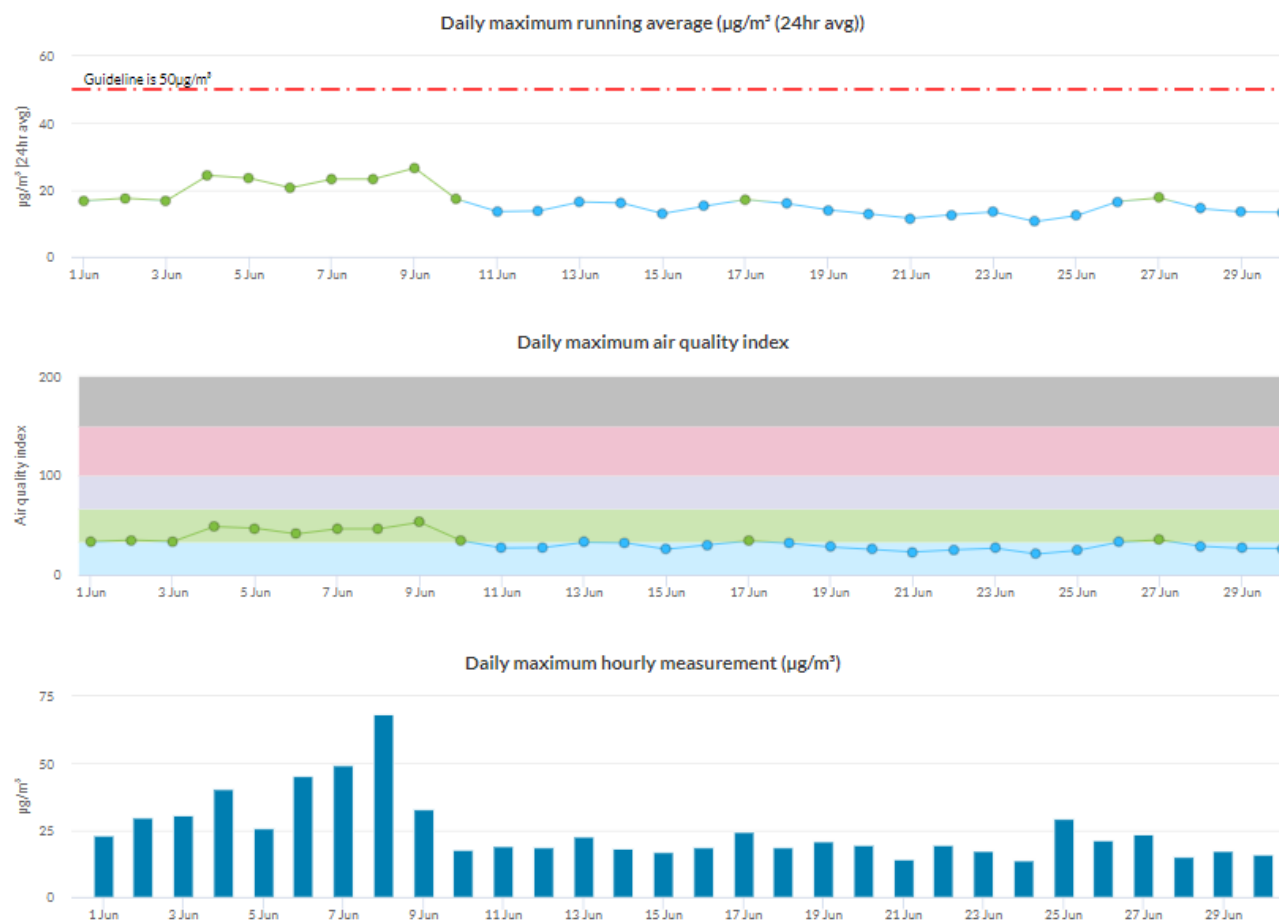


Figure 3: Woolloongabba – DES Station - PM₁₀ graph for June 2020 (reproduction from the DES website accessed June 2020)

3.4 Water Quality – Discharge

Water quality monitoring was conducted (prior to release from site) during June 2020.

Water quality monitoring data is provided in the table below.

Table 6: Water Quality Monitoring Data

Location	Date	Water Quality Objectives ^[5]											Adhered to Project Requirements (Yes / No)
		Turbidity (NTU)	Suspended solids (mg/L)	Chlorophyll a (µg/L)	Total nitrogen (µg/L) ^[6]	Oxidised N (µg/L) ^[6]	Ammonia N (µg/L) ^[6]	Organic N (µg/L) ^[6]	Total phosphorus (µg/L)	Filterable reactive phosphorus (FRP) (µg/L)	Dissolved oxygen (µg/L) ^[5]	pH(µg/L)	
Roma Street	16/06/2020	7.06	18.00	<1	2100.00	230.00	280.00	1600.00	20.00	<0.01	119.00	8.24	Yes
Roma Street	16/06/2020	0.70	<5	1.00	2000.00	240.00	240.00	1600.00	<0.01	<0.01	113.00	7.69	Yes
Gabba	23/06/2020	3.80	<5	<1	1.50	0.24	0.80	0.50	<0.01	<0.01	55.70	8.37	Yes

The project's discharge procedure is designed to minimise environmental impact and aim to achieve the water quality objectives. Water quality objectives are defined as goals within the Brisbane River estuary environmental values and water quality objectives document.

[5] Adhered to project requirements regarding aiming to achieve the water quality objective. The dissolved oxygen samples were acquired prior to discharge from the site. Pumping of the water will have inadvertently aerated the water, thus influencing the dissolved oxygen level.

[6] Nutrient levels adhered to project requirements in regard to aiming to achieve the water quality objective. The results are mostly below that of the receiving environment. They are also considered abnormal compared to results from previous months and are influenced by external factors (e.g. fauna occupying ponded water-body) rather than related to construction activities.

3.5 Water Quality – Surface Water

During June 2020, CBGU JV undertook one (1) round of surface water sampling at five (5) locations (upstream and downstream).

The monitoring locations are representative of the broader catchment. The water quality results below reflect the naturally-occurring conditions of the waterways since no offsite discharge occurred at, or prior to, the time of monitoring.

Table 7: Offsite Upstream & Downstream Water Quality Data

Location	Date	Purpose of Monitoring	Turbidity (NTU)	Suspended solids (mg/L)	EC (µS/cm)	Dissolved oxygen (%)	pH	Adhered to Project Requirements (Yes / No)
Roma Street - Upstream	15/06/2020	Monthly	8.57	<5	>3999	111.35	7.90	Yes
Roma Street - Downstream	15/06/2020	Monthly	12.17	<5	>3999	110.14	7.93	Yes
Albert Street - Upstream	15/06/2020	Monthly	16.87	9	>3999	96.49	6.74	Yes
Albert Street - Downstream	15/06/2020	Monthly	15.73	13	>3999	99.94	6.65	Yes
Gabba - Upstream	15/06/2020	Monthly	14.61	11	>3999	90.77	7.55	Yes
Gabba - Downstream	15/06/2020	Monthly	21.2	14	>3999	94.4	7.62	Yes
Boggo Road*	15/06/2020	Monthly	14.2	22	>3999	59.31	7.68	Yes

* Monitoring at the Boggo Rd site occurs at a pipe outlet at the beginning of the surface catchment. There is no upstream/downstream monitoring point as such. The pipe outlet receives water released from the site, as well as a broader stormwater catchment.

4 Non-Compliances

Details of non-compliances are provided in accordance with Imposed Condition 6(b)(ii).

A Non-Compliance Event is defined as project works that do not comply with the Imposed Conditions. Nil non-compliances occurred during the monitoring period.

Table 8: Non-Compliance Events

Event Title	Location, Date and time of the event	Date the Event was Formally Notified to CG/IEM	Conditions Affected	Date the Event Report Formally Sent to CG/IEM	Status of Event
Nil for this reporting period					

5 Complaints

Reporting of complaints is provided below in accordance with Imposed Condition 6(b)(iii).

During June 2020, three (3) complaints relating to the project were received as detailed in Table 9 below. One (1) other complaint was also received, but upon investigation, was found to be not project-related.

Table 9: Summary of Complaints

No.	Date	Location	Description of Issue	Responses	Status of Event
1	04/06/2020	Herschel Street (Roma Street Precinct)	Noise	A stakeholder called the project hotline regarding noise at the Roma Street construction works. The complaint was investigated and the stakeholder advised that monitoring confirmed works adhered to project noise requirements.	Closed
2	10/06/2020	Ellis Street (Woolloongabba Precinct)	Non-Project Related Complaint	A stakeholder called the project hotline regarding noise at the Woolloongabba Precinct.	Closed

				The matter was investigated and found to be works on the Captain Cook Bridge (non-project related works).	
3	15/6/2020	Peter Doherty Street (Boggo Road Precinct)	Construction Works and Noise	A stakeholder called the project hotline regarding general construction works at the Boggo Road Precinct and noise during non-standard hours. The stakeholder was informed of the construction activities, and that works were conducted in accordance with project requirements and attended noise monitoring confirmed that works adhered to project requirements.	Closed
4	29/06/2020	Albert Street (Albert Street Precinct)	Worker Behaviour	A stakeholder called the project hotline regarding worker behaviour. The stakeholder's concerns were addressed on-site.	Closed

Appendix C – Non-Compliance Event Reports

No Non-Compliance Events were raised in the reporting month.