

# Cross River Rail Project

## Monthly Environmental Report

July 2021

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# Executive Summary

This Monthly Environmental Report (MER) has been produced for Project Works undertaken on site for July 2021 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 report – *Coordinator-General's change report – no. 10 (June 2021)* 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 (OEMP). The Cross River Rail Delivery Authority (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** (RIS Monthly Report) and **Appendix B** (TSD Monthly Report).

The Environmental Monitor (EM) has reviewed and endorsed this MER. This endorsement follows ongoing and new document reviews, and surveillance across the relevant project worksites.

The CEMPs prepared by both Unity Alliance (RIS Contractor) and CBGU JV on behalf of Pulse (TSD Contractor) for their Relevant Project Works were endorsed by the 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:

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
1.	<b>General conditions</b> – compliance with the Project Changes relevant to the contractor's scope	Yes	The CEMP and site management plans are in accordance with the Project Changes.
2.	<b>Outline Environmental Management Plan</b> – timely submission to the Coordinator-General including required sub-plans	Yes	OEMP dated June 2020 is effective for the reporting period.
3.	<b>Design</b> – achievement of the Environmental Design Requirements	NA	Ongoing progress with design packages.
4.	<b>Construction Environmental Management Plan</b> – all relating to Relevant Project Works.	Yes	RIS – CEMP Revision 10 covering full scope of RIS works is effective from 29 April 2021. TSD – CEMP Revision 8 covering full scope of TSD works is effective from 9 June 2021.
5.	<b>Compliance and Incident management</b> – Non-compliance events, notifications and reporting.	Yes	There were no non-compliance events (NCEs) raised in July 2021. Refer to Section 2.5 of this report.

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
6.	<b>Reporting</b> – Monthly and Annual reporting.	Yes	This MER including RIS and TSD Monthly Reports have been submitted in accordance with the conditioned requirements.  Refer to <b>Appendix A</b> and <b>Appendix B</b> .
7.	<b>Environmental Monitor (EM)</b> – engaged and functions resumed.	Yes	Ongoing weekly site inspections and document reviews continue to take place.
8.	<b>Community Relations Monitor (CRM)</b> – engaged and functions resumed	Yes	Ongoing.
9.	<b>Community Engagement Plan</b> – developed and endorsed by Environmental Monitor.	Yes	CEMPs endorsed with Community Engagement Plan.
10.	<b>Hours of work</b> – Project Works undertaken during approved hours.	Yes	Project Works have been undertaken in accordance with project requirements. This has been achieved through Standard working hours, Extended work hours and Managed Work.
11.	<b>Noise</b> – Project Works must aim to achieve internal noise goals for human health and well-being.	Yes	Noise monitoring following predictive modelling met project noise requirements at Sensitive Places.  RIS – Refer to <b>Appendix A (Sections 3.1.2 and 3.1.4, and Table 4)</b> .  TSD – Refer to <b>Appendix B (Section 3.2 and Table 3)</b> .
	<b>Vibration</b> – Project Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	RIS - Vibration monitoring was not required during the reporting period.  TSD – Vibration monitoring was undertaken to validate predicted vibration assessments and in response to vibration related complaints. The TSD contractor confirmed the monitoring results met project requirements.  Refer to <b>Appendix B (Section 3.1 and Table 2)</b> .
12.	<b>Property damage</b> – relating to ground movement.	Yes	RIS – Predictive vibration modelling has been undertaken for Relevant Project Works and Property Damage Sub-plans have been developed and implemented. Pre-condition surveys have been completed at heritage, commercial and residential buildings at RNA, Northern Corridor and Fairfield to Salisbury stations.



Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			TSD – Vibration modelling has been prepared and is ongoing. Where required, building condition survey reports are completed for heritage and residential buildings.
13.	<b>Air quality</b> – Works must aim to achieve air quality goals for human health and nuisance.	Yes	Project Works met air quality goals. RIS – Refer to <b>Appendix A (Sections 3.2, Tables 7 and 9, and Figures 1, 2 and 3)</b> . TSD – Refer to <b>Appendix B (Sections 3.3.1 and 3.3.2, and Tables 4 and 5)</b> .
14.	<b>Traffic and transport</b> – Works must minimise adverse impacts on road safety and traffic flow.	Yes	Traffic Management Plans covered in the CEMPs and Sub-plans for all active worksites have been reviewed by the EM and implemented on site.
15.	<b>Water quality</b> – Works must not discharge groundwater from the construction site above the relevant environmental values and water quality objectives.  Monitor and report on water quality in accordance with CEMP and Sub-plans.	Yes	Monitoring and reporting on groundwater and surface water quality was undertaken in accordance with RIS and TSD Water Quality Management Plans.  RIS – No groundwater discharges occurred for the month. Post-rainfall monitoring was triggered at Clapham Yard worksite. Surface water monitoring results for Moolabin Creek and Rocky Water Holes Creek confirmed off-site discharges met project discharge criteria.  Refer to <b>Appendix A, Table 10</b> for post-rainfall monitoring results and <b>Section 3.3.5</b> for details of the investigation.  TSD – Four groundwater discharges from Roma Street, Albert Street, Woolloongabba and Boggo Road worksites were inconsistent with water quality objectives however consistent with pre-construction water quality levels. No external influences were introduced by the construction activities.  Refer to <b>Appendix B (Table 6)</b> for ground water monitoring results. Refer to <b>Appendix B (Tables 7 and 8)</b> for surface water monitoring results.
16.	<b>Water resources</b> – Evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown.	Yes	RIS – There will be no sustained groundwater extraction involved in the RIS scope of works so predictive modelling of groundwater drawdown is not required. Collection of hydrological data to model

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			potential inflow rates into excavations during construction has been undertaken.  TSD – Inflow of groundwater into the worksites is being continuously monitored to validate the predictive modelling.
17.	<b>Surface water</b> – 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.	<b>Erosion and sediment control</b> – 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 reviewed by the EM and implemented on site.
19.	<b>Acid sulfate soils</b> – managed as per the Queensland Acid Sulfate Soil Technical Manual.	Yes	Acid Sulfate Soil Management Plans have been prepared and implemented for all active worksites.
20.	<b>Landscape and open space</b> – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria Park.	Yes	Extraction of TBMs from the Northern Portal requires minor modification to an existing temporary access road through Victoria Park. Consideration is being taken to minimise loss of trees and area of park impacted during these temporary works. Heritage Exemption Certificate was approved by the Department of Environment and Science (DES) for these works on 24 June 2021.
21.	<b>Worksite rehabilitation</b> – 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 NCEs raised in July 2021.

# 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
CGCR	Coordinator-General's Change Report
CRM	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
DES	Department of Environment and Science
EIS	Environmental Impact Statement
EM	The Environmental Monitor engaged in accordance with Imposed Condition 7
ESC	Erosion and sediment control
IECA	International Erosion Control Association
Imposed condition/s	A condition/s imposed by the Coordinator-General under section 54B of the SDPWO Act for the Project
MER	Monthly Environment Report
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
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, several Requests for Project Change (RfPC) submissions have been evaluated by the Coordinator-General. RfPC 11 was endorsed in July 2021 by the Coordinator-General.

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 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; and
- Southern Area.

These are shown in the figure over.





## 1.3. Reporting Framework

This MER has been prepared to comply with Imposed 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 NCE's, 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 EM.

## 1.4. Monthly Environment Report Endorsement

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

# 2.Compliance Review

This MER has been reviewed and endorsed by the EM as per Imposed Condition 7 of the CGCR.

## 2.1. Relevant Project Works

The following Project Works were undertaken in July 2021:

Area	Project Works
Mayne Area	<b>Mayne Yard North –</b> <ul style="list-style-type: none"><li>• Mayne Yard decanting commenced;</li><li>• Crew Change building foundation completed;</li><li>• Crew change building hydraulics 50%completed;</li><li>• BR11/13 (Tripod Bridge) piling is 75% complete and ground improvement piling for reinforced soil structure walls continues;</li><li>• RC14 (Ferny Grove Flyover) pier protection piling 45%complete;</li><li>• RC14 form, reo, pour (FRP) 30% complete;</li><li>• BR08 temporary works commenced;</li><li>• load transfer platforms for multiple retaining walls 50% complete;</li><li>• Civil scope continues - stabling yard fence installation, drainage works and combined services routes (CSR); and</li><li>• Access roads and carpark drainage continues.</li></ul>
Northern Area	<b>Northern Corridor –</b> <ul style="list-style-type: none"><li>• Retaining wall RW270 and RW265 complete;</li><li>• piling on Bowen Bridge Pier Protection is 80% complete and FRP scope 70% complete;</li><li>• Queensland Rail HV Carwash Upgrade (external), under-bore and Eastern conduits completed; and</li><li>• Drainage works 70% complete.</li></ul> <b>RNA –</b> <ul style="list-style-type: none"><li>• Site handed over successfully to RNA for Ekka 2021;</li><li>• Retaining wall remove and replace scope completed; and</li><li>• Stage 1 drainage has commenced.</li></ul> <b>Northern Portal –</b> <ul style="list-style-type: none"><li>• Permanent piling, excavation and sewer main relocation ongoing;</li></ul>

Area	Project Works
	<ul style="list-style-type: none"> <li>• Permanent capping beam completed in TBM extraction box; and</li> <li>• Station box retention works commenced</li> </ul>
Central Area	<b>Roma Street –</b> <ul style="list-style-type: none"> <li>• Services building adit excavation ongoing with drill and blast; Services building excavation and ground retention continues at bench 12 of 15;</li> <li>• station building excavation and retention works in progress with bench 3 and 4 in progress;</li> <li>• TBM prep work underway for traverse; and</li> <li>• Inner Northern Busway (INB) piling is 100% completed and excavation in progress.</li> </ul>
	<b>Albert Street –</b> <ul style="list-style-type: none"> <li>• Lot 1 – station box excavation continues (RL -17.5), 'row 2' props installed and third row anchor props block fabrication commenced.</li> <li>• Lot 2 –TBM traverse through cavern complete, one roadheader operational at the northern heading, passive lining on Lot 3 adit complete; and</li> <li>• Lot 3 – excavation continuing, first and second row of anchors stressed and tower crane erection complete.</li> </ul>
	<b>Woolloongabba –</b> <ul style="list-style-type: none"> <li>• Station jump form system complete to lift 5, next lift 6 underway;</li> <li>• Continuous slab pouring occurring and B7 internal walls and columns commenced within the station box;</li> <li>• Southern cavern and mined tunnels waterproofing and lining ongoing;</li> <li>• TBM #1 (Else) continued mined tunnelling and segment installation works completing 1425 rings by the end of July;</li> <li>• TBM #2 (Merle) continued mined tunnelling and segment installation works completing 1159 rings by the end of July;</li> <li>• Road header downline excavation continued with 6016m excavated by the end of July; and</li> <li>• Road header upline excavation continued with 601m excavated by the end of July.</li> </ul>
	<b>Boggo Road –</b> <ul style="list-style-type: none"> <li>• Station box excavation nearing completion and additional anchors installed to western wall;</li> <li>• Section in the north of the station box has been handed over to the stations team;</li> <li>• First concrete satellite pumping boom installed.</li> <li>• Ongoing slab pours; and</li> <li>• First station wall pours on the southern box perimeter wall and western wall complete.</li> </ul>
	<b>Southern Portal –</b> <ul style="list-style-type: none"> <li>• Completed site establishment works to Kent street;</li> <li>• Continued piling works to Dutton Park retaining wall and completion of MC02 greenfield piles;</li> <li>• Pile breakback and capping beam construction ongoing;</li> <li>• Continued construction of access shafts for the sewer and stormwater micro tunnelling relocations;</li> <li>• Shaft 4 complete and shaft 3B undertaking second last lift; and</li> <li>• Completed construction of new signaling, communications and power equipment building foundations within the triangle and commenced signal install and cabling.</li> </ul>



Area	Project Works
Southern Area	<p><b>Dutton Park –</b></p> <ul style="list-style-type: none"> <li>Continued installation of CSR during SCAS with new ground surface troughing in the Dutton Park Area;</li> <li>commenced Dutton Park Station modifications enabling works with redundant infrastructure removed and relocated during SCAS TSD21; and</li> <li>pier protection during SCAS.</li> </ul> <p><b>Yeronga Station –</b></p> <ul style="list-style-type: none"> <li>Opening of the Temporary scaffold overpass open to the public;</li> <li>Demolition of existing timber overpass bridge;</li> <li>Demolition of the Fairfield Rd concrete overpass over the dual gauge and Fairfield Rd closure;</li> <li>Completion of screw piling on Platform 1 and commencement of retaining wall footings; and</li> <li>Platform 1 and 2 excavation.</li> </ul> <p><b>Clapham Yard –</b></p> <ul style="list-style-type: none"> <li>Demolition works of facilities complete;</li> <li>On-site concrete crushing of demolition waste; and</li> <li>Earthworks and import of fill ongoing.</li> </ul>

## 2.2. Key Environmental Elements

### 2.2.1. Noise

The Coordinator-General's conditions establish a framework for managing the impacts of noise. The Imposed Conditions do not establish noise limits. Compliance with the Imposed Conditions noise requirements involves demonstrating the implementation of the endorsed CEMP and associated Noise and Vibration Management Plan. This establishes the management measures to be applied which aims to achieve the identified noise goals as far as reasonably practicable. The CEMP also includes requirements for the provision of the required community notifications of upcoming work, potential impacts, and how the project team can be contacted in relation to any potential impacts. For Project Works where potential noise impacts are modelled to be above the noise goal but below the noise goal plus 20dBA, this work is authorised where the endorsed CEMP and associated Noise and Vibration Management Plan is being implemented, including communicating construction activities to potential and actual Directly Affected Persons (DAPs). For Project Works where potential noise impacts are predicted to be more than 20dBA above the relevant noise goal, specific engagement is required with DAPs for these works.

Where internal monitoring was not possible, contractors have undertaken external monitoring at nominated locations. To determine compliance with the project's noise requirements and to calibrate modelled predictions the project applies recommended façade attenuation corrections, which consider receiver property type.

In the Northern Area, noise monitoring was undertaken to validate predictive modelling at sensitive places during piling, excavation and ground stabilisation works at the Northern Portal during standard hours. Noise levels met project requirements. Noise monitoring in response to noise complaints was undertaken and the monitoring results demonstrated compliance with the project noise goals. Monitoring results for the Northern Area are detailed in Table 3, **Appendix B**.

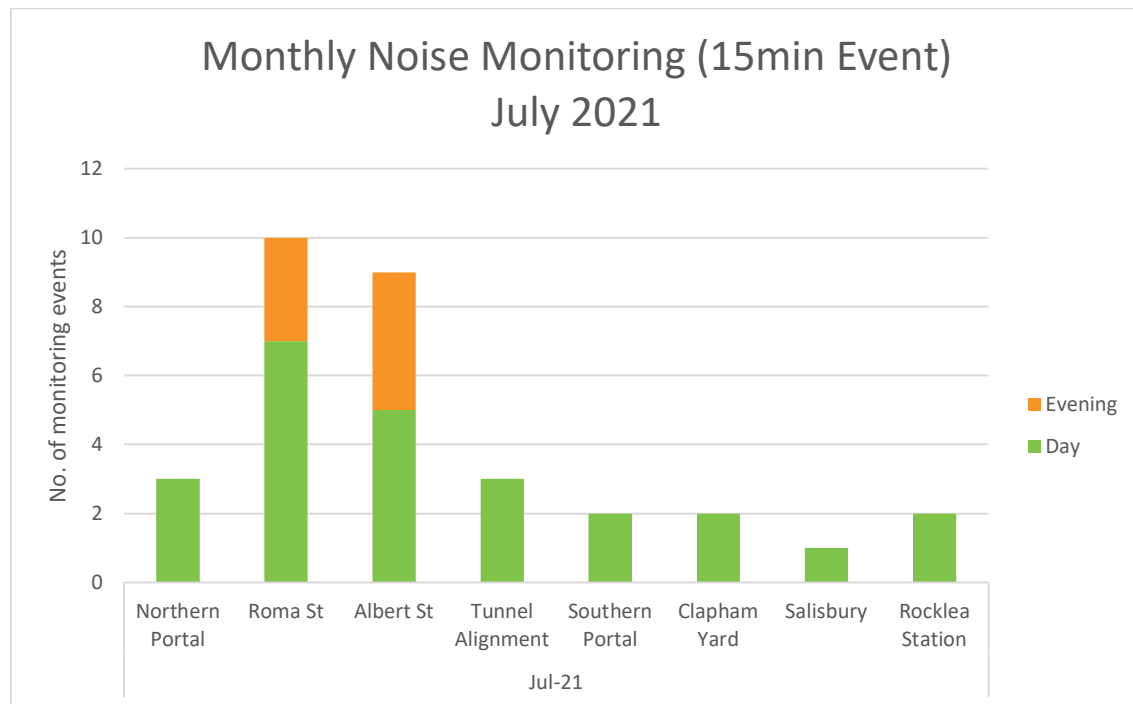
In the Central Area, noise monitoring was undertaken to validate predictive modelling at sensitive places close to the project worksites and in response to noise complaints. Monitoring results for the Central Area are detailed in Table 3, **Appendix B**. The TSD contractors reported that the project noise requirements have been met during this reporting month.

In the Southern Area, noise monitoring was undertaken to validate predictive modelling using a buffer distance testing for demolition of buildings at Clapham Yard during Non-Standard hours and at Sensitive Places for combined services routes at Salisbury Station and test pitting at Rocklea Station undertaken in Standard and Non-Standard Hours. Monitored noise levels met project requirements. Noise monitoring in response to complaints was not triggered. Monitoring results for the Southern Area are detailed in Table 4, **Appendix A**.

Examples of noise management measures on the Project worksites include:

- using plant and equipment separately adjacent to sensitive receptors;
- purpose built noise barriers on the sites or site boundary;
- change in plant type, such as at Boggo Road/Southern area where an almost silent sheet-piling machine had been sourced in place of one with a much higher sound power level;
- acoustic spoil sheds;
- positioning of equipment on site to maximise the effects of the site layout and barriers such as the spoil shed itself or other workshops; and
- noise blankets, such as those applied on the Woolloongabba site to further mitigate noise from tonal plant and equipment.

A summary of noise monitoring events for the month is provided in the chart below.



## 2.2.2. Vibration

Vibration monitoring in the Mayne and Southern Areas was not triggered.

In the Northern Area, Vibration monitoring took place to validate predictive modelling for piling, excavation, ground stabilisation and material haulage activities at the Northern Portal worksite. No complaints relating to vibration were received during the reporting period. The contractor reported results met the project's nominated goals. Vibration monitoring results for the Northern Area are detailed in **Appendix B** (Table 2)

In the Central Area, vibration monitoring took place to validate predictive modelling for tunnelling, piling, excavation and controlled blasting activities at Roma Street, Albert Street and Woolloongabba along

the tunnel alignment. No complaints directly relating to vibration were received during the reporting period. The contractor reported results met the project's nominated goals. Vibration monitoring results for the Central Area are detailed in **Appendix B** (Table 2).

## 2.2.3. Air Quality

### 2.2.3.1. Dust Deposition

Dust deposition monitoring was conducted at Mayne, Northern, Central and Southern Area worksites. Dust deposition results met the project air quality goal<sup>1</sup>. No dust complaints were received, and the contractors confirmed the works adhered to the project air quality requirements. A summary of dust deposition monitoring is provided in the table below.

Air Quality – Dust Deposition Monitoring			
Area	Worksite	Monitoring Location	Comments
Mayne Area	Mayne Yard	Mayne Yard	- Results met air quality goal.
Northern Area	RNA / Exhibition	RNA Showgrounds	- Results met air quality goal.
	Northern Portal	Northern Portal (near Brisbane Girls Grammar School)	- Sample damaged due to strong winds, Dust gauge reinstalled for next month.
Central Area	Albert Street	Mary Street	- Results met air quality goal.
		Elizabeth Street	- Results met air quality goal.
	Boggo Road	Quarry Street (north of the site)	- Results met air quality goal.
		Peter Doherty Street/Leukemia Foundation	- Results met air quality goal.
	Southern Portal	Dutton Park Station	- Results met air quality goal.
		PA Hospital - Central Energy Unit along Kent Street	- Results met air quality goal.
	Roma Street	Roma Street Station	- Results met air quality goal.
	Woolloongabba	Russian Orthodox Cathedral	- Results met air quality goal.
		Woolloongabba Busway	- Results met air quality goal.
Southern Area	Clapham Yard	Clapham Yard (East)	- Results met air quality goal.
	Yeronga Station	Yeronga Station	- Results met air quality goal.

### 2.2.3.2. Particulate Matter and Total Suspended Particulates

Monitoring for particulate matter (PM<sub>10</sub>) and total suspended particulates (TSP) was conducted at Mayne, Northern, Central and Southern Area worksites. The Clapham Yard air quality unit experienced

<sup>1</sup> CG air quality goal for dust deposition - 50µg/m<sup>3</sup> (over an averaging period of 24 hours).



a data gap from 3-5 July 2021 and from 7-12 July 2021 due to a power malfunction. The power failure is attributed to the Easterly facing panel positioned at 90 degrees not catching enough of the sun's rays during the winter period. This issue has now been rectified with the TSP / PM10 having been relocated on 9 August 2021 at a location where the solar panels powering the station are positioned at the optimal alignment (North facing and as close to perpendicular as possible) and therefore more likely to be exposed to the sun for extended hours during the day.

The Woolloongabba air quality unit experienced a technical fault and stopped functioning on 3 July and was immediately resolved. The review of nearby DES air quality monitoring stations (South Brisbane) demonstrated PM<sub>10</sub> levels on 3 July were compliant with project air quality goals.

A summary of particulate monitoring is provided in the table below.

Air Quality – PM <sub>10</sub> / TSP Monitoring			
Area	Worksite	Monitoring Location	Comments
Mayne Area	Mayne Yard	Mayne Yard North	- Results met air quality goals.
Northern Area	RNA / Exhibition	Lanham Yard	- Results met air quality goals.
	Northern Portal	Brisbane Girls Grammar School	- Results met air quality goals.
Central Area	Albert St	iStay River City and Capri (Corner of Mary Street and Albert Street)	- Results met air quality goals.
	Boggo Rd / Southern Portal	North-east of Boggo Road worksite	- Results met air quality goals.
	Roma St	Roma Street Station	- Results met air quality goals.
	Woolloongabba	Place Park, Woolloongabba	- Results met air quality goals. - Monitoring unit experienced a technical fault with no results on 3 July.
Southern Area	Clapham Yard	Clapham Yard	- Results met air quality goals. Data gap on 3-5 July and 7-12 July due to power malfunction.

## 2.2.4. Water Quality

Monitoring and reporting on water quality was undertaken in accordance with the Project's Water Quality Management Plans.

### 2.2.4.1. Surface Water

Routine monitoring was undertaken at the receiving waters of TSD worksites in accordance with Water Quality Management Plan. Routine monitoring for RIS worksites has been reduced to bi-annual background monitoring from April 2021 and was not undertaken in July 2021.

In the Mayne and Northern Areas, no active surface water discharges occurred, and post rainfall monitoring was not triggered during the month.

In the Central Area, active surface water discharge was undertaken at Boggo Road (dewatering through water treatment plant) and the Southern Portal (dewatering through pumping from sediment basin). Surface water discharge results met project water quality discharge criteria. Post-rainfall monitoring was not triggered during the month. Routine instream monitoring occurred for all TSD worksites. Results are detailed in **Appendix B** (Table 8).

In the Southern Area, post-rainfall monitoring was triggered at Clapham Yard on 3 July 2021. Results from post-rainfall monitoring in receiving waters at Moolabin Creek and Rocky Water Holes Creek met project water quality discharge criteria. See **Section 3.3.2 in Appendix A** for further details.

Surface water quality monitoring is summarised in the table below:

Surface Water Quality Monitoring					
Area	Worksite	Discharge	Post-Rain Monitoring	Routine Monitoring	Comments
Mayne Area	Mayne Yard North	No	No	N/A	- Monitoring was not triggered.
Northern Area	Northern Portal	No	No	Yes	- Routine monitoring undertaken in accordance with the WQMP.
Central Area	Albert Street	No	No	Yes	- Routine monitoring undertaken in accordance with the WQMP.
	Boggo Road	Yes	No	Yes	- Discharge monitoring met project water quality discharge criteria. - Routine monitoring undertaken in accordance with the WQMP.
	Roma Street	No	No	Yes	- Routine monitoring undertaken in accordance with the WQMP.
	Woolloongabba	No	No	Yes	- Routine monitoring undertaken in accordance with the WQMP.
	Southern Portal	Yes	No	Yes	- Discharge monitoring met project water quality discharge criteria. - Routine monitoring undertaken in accordance with the WQMP.
Southern Area	Clapham Yard	No	Yes	N/A	- Post-rainfall monitoring undertaken at Moolabin Creek and Rocky Water Holes Creek. - Results met water quality discharge criteria.

#### 2.2.4.2. Groundwater

There were no groundwater discharges at Mayne, Northern or Southern Area worksites.

Groundwater discharge occurred in the Central Area at Roma Street, Woolloongabba and Boggo Road worksites. A groundwater discharge result was reported late this month at Albert St as the laboratory results were not available at the time of reporting last month. The groundwater discharge results reported for the month exceeded the Project's water quality objectives (WQO's)<sup>2</sup> for total nitrogen,

<sup>2</sup> The Brisbane River Estuary environmental values and water quality objectives (Basin no 143 – mid-estuary) in the Environmental Protection (Water) Policy 2009.

ammonia nitrogen, oxidised nitrogen, organic nitrogen and dissolved oxygen. This result however was consistent with the receiving environment baseline monitoring pre-construction data.

Groundwater Quality Monitoring			
Area	Worksite	Discharge	Comments
Mayne Area	Mayne Yard North	No	- No groundwater discharges.
Northern Area	RNA/Exhibition	No	- No groundwater discharges.
	Northern Portal	No	- No groundwater discharges.
Central Area	Albert Street	Yes	- Groundwater discharge (dewatering) occurred late last month and reported this month. - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions and no external influences were introduced by construction activity.
	Boggo Road / Southern Portal	Yes	- Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions and no external influences were introduced by construction activity.
	Roma Street	Yes	- Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions and no external influences were introduced by construction activity.
	Woolloongabba	Yes	- Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions and no external influences were introduced by construction activity.
Southern Area	Clapham Yard	No	- No groundwater discharges.

### 2.2.5. Erosion and Sediment Control

Site specific Erosion and Sediment Control (ESC) Plans have been prepared, updated, and implemented at Mayne Yard, Northern Portal, RNA Showgrounds, Roma Street, Albert Street, Woolloongabba, Boggo Road, Southern Portal, Yeronga, and Clapham Yard worksites.

## 2.3. Complaints Management

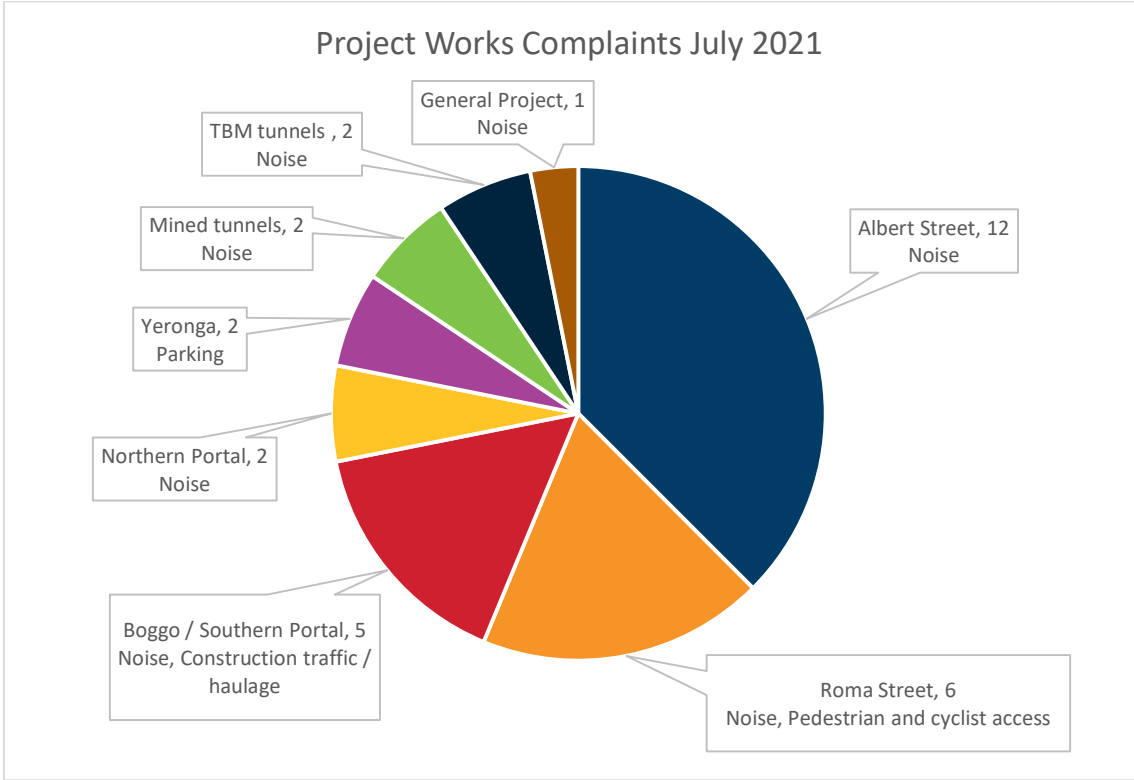
A total of 34 complaints were received during the month, of which two were not related to Project Works.

RIS works received three (3) complaints related to workforce parking. One complaint at Mayne Yard was confirmed not to be related to Project Works. Two complaints at Yeronga related to workforce parking at Yeronga Station. It was not able to be determined if the complaint was related to Project Works however Unity have reaffirmed the requirements related to workforce parking with relevant workers.

TSD activities received 29 complaints related to works at the Northern Portal, Roma Street, Albert Street and Boggo Road worksites and along the tunnel alignment. 12 complaints were related to noise generated from excavation and ground retention works at Albert Street in both standard and non-standard hours. The TSD contractors reported that project requirements have been met during this

reporting month. The Project Works complaints summary for the month is provided in the following chart.

An additional noise complaint was received by the Delivery Authority, but it wasn't detailed which site the complaint was related to. The Delivery Authority were unable to contact the anonymous complainant.

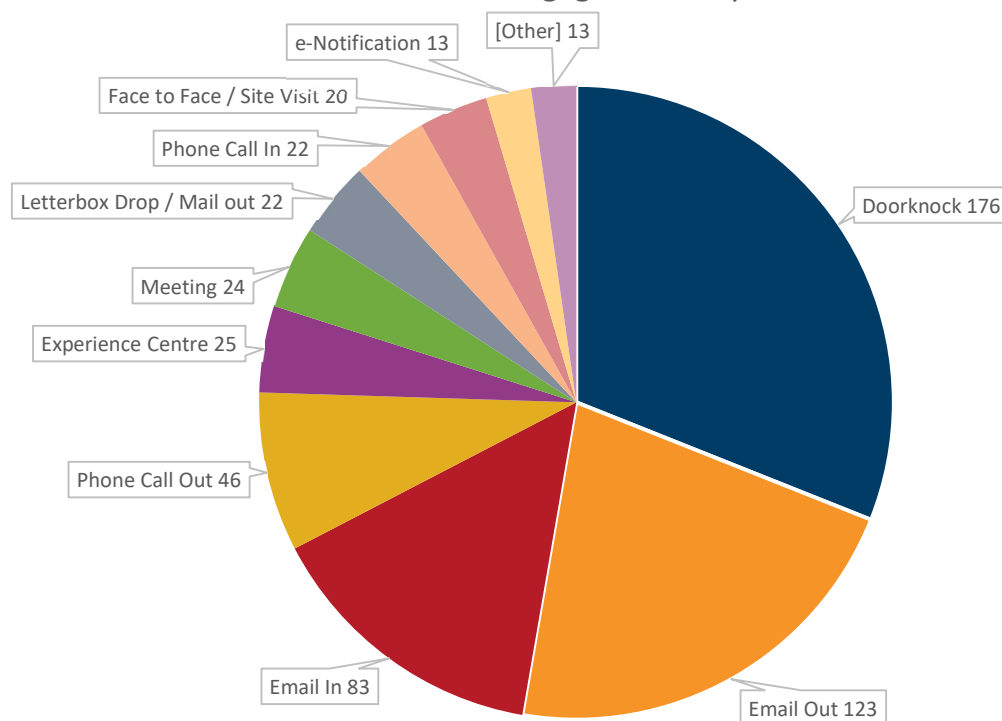


Where attended noise monitoring was undertaken in response to a complaint, the contractor confirmed on all occasions that works undertaken at the time of the complaint adhered to project requirements. In some instances, previous attended noise monitoring data, representative of the relevant construction activities was used to confirm the works adhered to the project noise requirements.

To close out a complaint, the monitoring data is reviewed (where applicable) against compliance with the CEMP, site environmental management plans and permits, and checks that required community notification has taken place. Contractors have also confirmed that planned mitigation to reduce the impact was implemented. This is reviewed together to verify if project requirements have been met. For further details on close-out of complaints refer to **Appendix A**, Table 3 and **Appendix B**, Table 10.

For scheduled out of hours works, community notification was provided, as well as regular project updates. Stakeholder engagement undertaken on the project during the month is summarised in the chart below.

## Stakeholder Engagement July 2021



## 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	<b>Mayne Yard North –</b> <ul style="list-style-type: none"> <li>Commence Crew Change Building structural steel</li> <li>Commence Graffiti Removal Facility FRP scope</li> <li>Commence establishment of Crib facilities for building scope under Ferny Grove Flyover;</li> <li>Commence Breakfast Creek Bridge Works - rock platform and temporary jetty on south side of Breakfast Creek;</li> <li>Complete BR11/13 Tripod Bridge pling</li> <li>RC14 pier protection on Ferny Grove Flyover</li> <li>Continue with civil scope including fencing, inground services, subsoil and subgrade preparation for capping;</li> <li>Continue install of lighting tower foundations;</li> <li>Continue combined services route works; and</li> <li>Continue OHLE Foundations.</li> </ul>
Northern Area	<b>Northern Corridor –</b> <ul style="list-style-type: none"> <li>commence PUP relocation sewer under track crossings;</li> <li>complete Normanby drainage and sewer work; and</li> <li>complete rock excavation for western corridor widening.</li> </ul> <b>RNA/Exhibition –</b> <ul style="list-style-type: none"> <li>continue, FRP pile caps for western viaduct (BR43); and</li> </ul>

Area	New planned works in the coming months
	<ul style="list-style-type: none"> <li>continue drainage works.</li> </ul> <p><b>Northern Portal –</b></p> <ul style="list-style-type: none"> <li>excavation and permanent retention (including canopy tubes);</li> <li>capping beam and portal beam construction to continue till August;</li> <li>ongoing excavating, loading and removing of material with trucks;</li> <li>alternative access road for TBM extraction work to commence in August;</li> <li>construction of TBM clearing pad in August; and</li> <li>installation of gantry crane in August.</li> </ul>
Central Area	<p><b>Roma Street –</b></p> <ul style="list-style-type: none"> <li>TBM 1 break-through in August followed by TBM 2 in late August;</li> <li>TBM traverse through cavern in August-September; and</li> <li>ongoing excavation and ground retention services building and station building.</li> </ul> <p><b>Albert Street –</b></p> <ul style="list-style-type: none"> <li>Lot 1 – controlled blasting, excavation and ground retention to continue in August-September</li> <li>Lot 2 - 24-hour tunnelling will continue and waterproofing preparation works including drilling to commence in July; and</li> <li>Lot 3 - ongoing station box excavation and ground support.</li> </ul> <p><b>Woolloongabba –</b></p> <ul style="list-style-type: none"> <li>24/7 excavation operations with TBMs and road headers;</li> <li>continuous spoil haulage, large concrete deliveries for back of house and station building structures construction; and</li> <li>cross passage works north of Woolloongabba site to continue in till November.</li> </ul> <p><b>Boggo Road –</b></p> <ul style="list-style-type: none"> <li>station box excavation completion in September;</li> <li>station structure wall pours continue;</li> <li>installation of second tower crane in August.</li> <li>Southern mined roadheader breakthrough forecast for September</li> </ul> <p><b>Southern Portal –</b></p> <ul style="list-style-type: none"> <li>continue utility relocation and Middle Road possession works in the rail corridor in August and September;</li> <li>launch of micro TBM from shaft 4 (Kent Street) towards Railway Tce in August; and</li> <li>Piling to commence for the Dutton Park retaining wall in .</li> </ul>
Southern Area	<p><b>Yeronga Station –</b></p> <ul style="list-style-type: none"> <li>Platform 1, 2 and 3 screw pile installation;</li> <li>Platform 1, 2 and 3 civil and FRP works;</li> <li>Platform 3 precast retaining wall installation;</li> <li>Yeronga Station installation of in-ground pits, conduits and hydraulic services; and</li> <li>Continued CSR works.</li> </ul> <p><b>Clapham Yard –</b></p> <ul style="list-style-type: none"> <li>Continue import and stockpiling fill;</li> <li>Commence site establishment of offices; and</li> <li>Preparation works and investigations for piling scope and drainage.</li> </ul>

## 2.5 Non-Compliance Events

No new NCEs have been raised this month. The summary of NCEs 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
Open									
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-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
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
Withdrawn									
CRRDA-007-RIS-002	04/01/20	Air Quality	Mayne Yard, Victoria Park, Yeronga, Fairfield	13	28/04/20	30/04/20	Withdrawn		
CRRDA-008-TSD-006	04/08/20	Working Hours	Roma Street	4, 10	28/04/20	30/04/20	Withdrawn		
<b>Gate 1</b> - EM notification to contractor. NCE confirmed <b>Gate 2</b> - 48 hour NCE notification submitted to CG <b>Gate 3</b> - 14 day report submitted <b>Gate 4</b> - 14 day report uploaded to CRR website <b>Gate 5</b> - Records of mitigation / preventative measures submitted to the CG					Complete				

Throughout construction activities, events and incidents are routinely investigated to verify compliance with the Imposed Conditions and to verify that management and mitigation measures are implemented in accordance with CEMP and sub-plans.

# Appendix A RIS Monthly Report

# **Monthly CGCR Report – July 2021**

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



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# 1 Progress Summary - Relevant Project Works

The following Project Works were undertaken during the reporting period:

*Table 1: Summary of Project Works completed during the reporting period*

Area	Project Works
Mayne Area	<ul style="list-style-type: none"> <li><b>Mayne Yard North</b></li> </ul> <p>Mayne Yard Decanting commenced</p> <p>Graffiti Removal Facility Preload completed and inground services commenced</p> <p>Crew Change Building foundation completed</p> <p>Crew Change Building hydraulics 50% complete</p> <p>Tripod Bridge (BR11/13) CIP piling 75% complete</p> <p>Load Transfer Platforms for RW110, RW120 and RW125 at 50% complete</p> <p>RC14 (Ferny Grove Flyover pier protection) CIP piling 45% complete, FRP at 30% complete</p> <p>Mayne Yard North civil scope continues (stabling yard fence, drainage works and CSR)</p> <p>BR08 (Breakfast Creek Bridge) temporary works commenced, and environmental controls established</p>
Northern Area	<ul style="list-style-type: none"> <li><b>RNA</b></li> </ul> <p>An embargo was placed on all construction within the Brisbane Exhibition Grounds to enable the 2021 Ekka, therefore limited Project Works were carried out during the reporting period</p> <p>Site handed over successfully to RNA for Ekka 2021 with the RNA complementary of the effort put in by UNITY</p> <p>Retaining Wall RW210 Remove &amp; Replace scope completed</p> <p>Drainage DL 251 (Stage 1) commenced</p> <ul style="list-style-type: none"> <li><b>Northern Corridor</b></li> </ul> <p>Retaining Wall RW270 (In front of Victoria Park Feeder Station) complete</p> <p>Retaining Wall RW265 (south of Bowen Bridge) complete</p> <p>Piling on Bowen Bridge Pier Protection is 80% complete and FRP scope 70% complete</p> <p>Queensland Rail HV Carwash Upgrade (external), under-bore and Eastern conduits completed</p> <p>Drainage works in Normanby section (DL 230, 241 between ICB and QR live tracks) 70% complete</p>
Southern Area	<ul style="list-style-type: none"> <li><b>Yeronga Station</b></li> </ul> <p>Opening of the Temporary Scaffold Overpass to the public</p> <p>Demolition of the existing Timber Overpass Bridge over the SCAS weekend on 24 July 2021</p> <p>Demolition of the Fairfield Road Concrete Overpass over the Dual Gauge and Fairfield Road closure on 31 July 2021</p> <p>Completion of the Platform 1 screw piles</p> <p>Commencement of the Platform 1 retaining wall footings</p> <ul style="list-style-type: none"> <li><b>Clapham Yard</b></li> </ul> <p>Demolition works of facilities complete</p> <p>On-site concrete crushing of demolition waste to utilise in general fill has commenced to assist with sustainability targets</p> <p>Earthworks continues with the approval of RfPC 11 in July</p>

*Acronyms:*

*CIP – Cast in Situ Piles*

*CSR – Combined Services Route*

*DL – Drainage Line*

*FRP – Form Reo Pour*

*HV – High Voltage*

*OHLE – Overhead Line Equipment*

*PUP – Public Utility Plant*

*RW – Retaining Wall*

*SCAS - Scheduled Corridor Access Schedule*

The following table summarises the upcoming Project Works:

Table 2: Summary of upcoming Project Works

Area	Project Works
Mayne Area	<ul style="list-style-type: none"> <li>• <b>Mayne Yard North</b></li> </ul> <p>Crew Change Building structural steel to commence</p> <p>Graffiti Removal Facility FRP scope to commence</p> <p>New site/crib facilities being established for the building scope under Ferny Grove Flyover</p> <p>BR11/13 (tripod bridge) CIP piling will be completed to commence blade wall FRP</p> <p>Load Transfer Platform FRP scope to continue on RW120 and RW125</p> <p>RC-14 pier protection on Ferny Grove Flyover will commence on Western side for new CRR-Up and FRP scope will continue East (Suburban lines and CRR-Down)</p> <p>BR08 (Breakfast Creek Bridge) rock platforms and temp jetty piling will commence</p> <p>Continue with civil scope in Yard including fencing, inground services, decanting, subsoils</p> <p>Continue CSR works following hydraulics</p> <p>Continue OHLE foundations in Mayne Yard North</p> <p>Continue installing lighting pole foundations</p> <p>Breakfast Creek OHLE relocations</p> <p>Traction Feed Route works from Abbotsford Road Feeder Station to BCTSC</p>
Northern Area	<ul style="list-style-type: none"> <li>• <b>RNA</b></li> </ul> <p>Ekka 2021 embargo will lift on 23 August for works to recommence</p> <p>Continue FRP BR43 pile caps and blade walls (western viaduct)</p> <p>Commence falsework for Span 1 to 3</p> <p>Continue drainage at Southern section (Stage 1)</p> <ul style="list-style-type: none"> <li>• <b>Northern Corridor</b></li> </ul> <p>Complete Drainage works in Normanby section at ICB side (DL 230, 241)</p> <p>Complete all rock excavation for western corridor widening</p> <p>Commence PUP relocation Sewer UTX S-06 between Landbridge and Queensland Rail Carwash facility – pending TSD sewer temporary relocation removal</p> <p>Continue FRP for Bowen Bridge and ICB pier protection, piling will be completed in extended SCAS mid-August</p> <p>Queensland Rail carpark scope to commence with bulk earthworks and services</p>
Southern Area	<ul style="list-style-type: none"> <li>• <b>Yeronga Station</b></li> </ul> <p>Finalisation of Yeronga Station return plan</p> <p>Yeronga Platform 1, 2 and 3 Civil and FRP Works</p> <p>Yeronga Station screw pile installation on Platforms 1, 2 and 3</p> <p>Yeronga Platform 3 Precast Retaining Wall installation</p> <p>Yeronga Station installation of Platform 2 coping angle</p> <p>Yeronga Station installation in inground pits, conduits and hydraulic services</p> <p>Continuation of CSR works through corridor</p> <ul style="list-style-type: none"> <li>• <b>Clapham Yard</b></li> </ul> <p>Continue earthworks scope</p> <p>Commence extended site establishment of offices</p> <p>Preparation works and investigations for piling scope and drainage to commence in September 2021</p>



## 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 3: Summary of Complaints

Date	Location	Issue	Activity source of the concern	Period	Unity Response	Status
14 July 2021	Mayne Yard	Erosion sediment control Construction Traffic Management Vehicle access (non-construction)	The stakeholder contacted the Project to advise that heavy vehicle traffic on McDonald Road (Albion) from Grafton Street to Mill Street has left debris and dirt on the road. The stakeholder also advised that large trucks, trailers and machinery were also parking on the footpath along McDonald Road. Photographic evidence was provided via email.	July 21	The Project Team investigated the complaint and identified that the heavy vehicle movement and parking described by the complainant was related to a construction site located on McDonald Road which is not part of the Cross River Rail Project. The Project Team also advised that as part of the Cross River Rail activities <ul style="list-style-type: none"> <li>a street sweeper operates daily on Grafton Street near the rail corridor gate access to mitigate any potential project-borne debris from the Cross River Rail site</li> <li>the project team also maintains sediment controls near the Cross River Rail site gate</li> <li>UNITY Alliance project vehicles park in designated areas on site within the rail corridor and not on local streets</li> </ul>	Closed

Date	Location	Issue	Activity source of the concern	Period	Unity Response	Status
23 July 2021	Yeronga	Worker Behaviours - Workforce Parking	<p>The stakeholder contacted their local elected representative regarding parking in Killamey street near Yeronga Station.</p> <p>The stakeholder advised that workers that may be part of the Cross River Rail project parked across their driveway.</p> <p>Photographic evidence was provided via email.</p>	July 21	<p>The Project Team investigated the complaint and reviewed the photographic.</p> <p>The photographic evidence was not able to confirm or inform whether the vehicle was associated with a worker on the Project.</p> <p>The Project team however contacted the stakeholder and advised that through the Project Induction it is communicated to all workers that they must park in designated areas and avoid parking on local streets</p> <p>A prestart message re-in forcing expected driving and workers behaviours was issued across RIS work sites</p>	Closed
26 July 2021	Yeronga	Worker Behaviours - Workforce Parking	<p>This complaint is linked to the complaint dated 23 July 2021.</p> <p>The Stakeholder contacted the Project regarding parking in Killamey Street near Yeronga Stations.</p> <p>The stakeholder advised that workers that may be part of the Cross River Rail project parked across their driveway.</p> <p>Photographic evidence was not provided.</p>	July 21	As above	Closed

## 3 Environmental Monitoring Results

The below section summarises the monitoring results to be reported in accordance with 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 (CEMP) occurs.

#### 3.1.1 Noise Monitoring

Attended noise monitoring was triggered based on the predictive noise assessments for:

- CSR works at Salisbury
- Test pitting at Rocklea Station

Attended noise monitoring was undertaken to validate the predictive noise assessment (buffer distance test) for:

- Demolition of the New Toll Building at Clapham Yard
- Concrete crushing at Clapham Yard

In accordance with the CEMP, attended outdoors monitoring was undertaken to validate the predictive assessment.

Monitoring was undertaken to confirm that the model was accurate and that works could continue to proceed as planned.

Complaint-based noise monitoring because of Project Works was not triggered.

#### 3.1.2 Noise monitoring Results

The below table summarises the noise monitoring results for reporting period.

The results from noise monitoring are assessed against two performance goals.

The first performance goal (herein referred to as Performance Goal 1), is determined as per Condition 11(a), Table 2, LA<sub>10</sub> noise goals.

The second performance goal (herein referred to as Performance Goal 2), is determined as per (Condition 11(c), using Table 2 LA<sub>10</sub> noise goal and adding + 20dBA.

An exceedance (predicted or measured) of either of these performance goals does not necessarily represent a potential or actual Non-Compliance Event.

Indeed, if the Project Works are authorised to proceed under Imposed Condition 10 and the DAP engagement process has occurred as per Imposed Condition 11 (c), then Project Works that are predicted to generate noise above the Noise Goal + 20dBA can proceed.

The purpose of these two performance goals is to inform:

- The extent of management measures that can reasonably and practically be implemented during the execution of the Relevant Project Works to minimise impact to DAPs, and
- Extent and type of consultation with DAPs prior to and leading up to the Relevant Project Works commencing.

The community, stakeholders and DAP consultation and engagement process which is based on the outcomes of the predictive modelling is presented in Attachment 6.

Attachment 6 must be read in conjunction with the Noise and Vibration Management sub-plan (C-EMP sub-plan) with a focus on Attachment 1 and 2 of the subplan.

Table 4: Summary of Noise Monitoring Data

Location and Receiver Type Details	Type of Monitoring	Working Hours	Noise Type	Purpose of Monitoring	Predictive model LA <sub>10</sub> (dBA)	Performance Goal 1 (dBA) (Condition 11(a), Table 2, LA <sub>10</sub> noise goals)	Performance Goal 2 (dBA) – (Condition 11(c), Table 2 LA <sub>10</sub> noise goal + 20dBA)	Measured LA <sub>10</sub> (dBA)	Measured LA <sub>eq</sub> (dBA)	DAP engagement prior to works	Is performance Goal exceeded?	Comments
Residential 7 Fairlie Terrace Salisbury	Attended – Outdoors <sup>1</sup>	Standard and Out of Standard Hours Monitoring undertaken Saturday 03/07/21 – 13:15	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	63 (outdoors)	<b>Standard hours</b> 65 (Outdoors) (AS2107 maximum design level [45dBA] + 10dBA+ 10dBA façade reduction) <sup>2</sup>  <b>Out of Standard Hours</b> 52 (Outdoors) (42dBA default goal + 10dBA façade reduction) <sup>2</sup>	<b>Standard hours</b> 85 (Outdoors) (65+ 20dBA)  <b>Out of Standard hours</b> 72 (Outdoors) (52+ 20dBA)	63	60	Yes Standard	<b>Standard hours</b> No Exceedance of Performance Goal 1 and Performance Goal 2  <b>Out of Standard hours</b> Exceedance of Performance Goal 1 No exceedance of Performance Goal 2	CSR works at Salisbury For interpretation, please refer to section 3.1.4.1.1
George Weston Food (industrial receiver) 931 Fairfield Road Yeerongpilly	Attended – Outdoors <sup>1</sup>	Standard Hours Thursday 08/07/21 – 08:15	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	80 (outdoors)	<b>Standard hours</b> 70 (Outdoors) (AS2107 maximum design level [50dBA] + 10dBA+ 10dBA façade reduction) <sup>2</sup>	<b>Standard hours</b> 90 (Outdoors) (75+ 20dBA)	74	70	Yes Standard	<b>Standard hours</b> Exceedance of Performance Goal 1 No Exceedance of Performance Goal 2	New Toll building demolition at Clapham Yard For interpretation, please refer to section 3.1.4.1.2
Residential 1 Dawn Street Rocklea	Attended – Outdoors <sup>1</sup>	Standard and Out of Standard Hours Monitoring undertaken Sunday 25/07/21 – 11:10	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	65 (outdoors)	<b>Standard hours</b> 65 (Outdoors) (AS2107 maximum design level [45dBA] + 10dBA+ 10dBA façade reduction) <sup>2</sup>  <b>Out of Standard Hours</b> 52 (Outdoors) (42dBA default goal + 10dBA façade reduction) <sup>2</sup>	<b>Standard hours</b> 85 (Outdoors) (65+ 20dBA)  <b>Out of Standard hours</b> 72 (Outdoors) (52+ 20dBA)	65	62	Yes Standard	Not applicable Measurements invalidated	Use of Vacuum Truck for Test Pitting at Rocklea For interpretation, please refer to section 3.1.4.1.3
Residential 59 Brooke Street Rocklea	Attended – Outdoors <sup>1</sup>	Standard and Out of Standard Hours Monitoring undertaken Sunday 25/07/21 – 11:23	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	56 (outdoors)	<b>Standard hours</b> 65 (Outdoors) (AS2107 maximum design level [45dBA] + 10dBA+ 10dBA façade reduction) <sup>2</sup>  <b>Out of Standard Hours</b> 52 (Outdoors) (42dBA default goal + 10dBA façade reduction) <sup>2</sup>	<b>Standard hours</b> 85 (Outdoors) (65+ 20dBA)  <b>Out of Standard hours</b> 72 (Outdoors) (52+ 20dBA)	75	69	Yes Standard	Not applicable Measurements invalidated	Use of Vacuum Truck for Test Pitting at Rocklea For interpretation, please refer to section 3.1.4.1.3
Not applicable buffer distance testing between noise source George Weston Food (industrial receiver) 931 Fairfield Road Yeerongpilly	Attended – Outdoors <sup>1</sup>	Standard Hours Thursday 29/07/21 – 07:22	Intermittent	Buffer Distance Validation testing	70 (outdoors)	Not Applicable for Buffer Distance Testing	Not Applicable for Buffer Distance Testing	70	69	Yes Standard	Not applicable	Concrete crushing at Clapham Yard For interpretation, please refer to section 3.1.4.1.2

- 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.*
  - 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 Queensland<sup>1</sup>.
  - 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.

<sup>1</sup> [https://www.ombudsman.qld.gov.au/ArticleDocuments/218/Airport\\_Link\\_Ombudsman\\_Statement.pdf.aspx](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

Vibration monitoring was not required during the reporting period based on the predictive vibration assessments for specific activities and previous validation monitoring having been undertaken.

*Table 5 Summary of Vibration Data*

Location	Date (Start and Finish)	Time of day	Closest DAP / Sensitive Place	Receiver Type (table 3 – Imposed Condition 11(e))	Purpose of Monitoring	Maximum vibration Level (mm/s)	Vibration goal for receiver (mm/s)	Exceedance of vibration limit?	Comments
None required for the reporting period									

Complaint-based vibration monitoring was not triggered. No complaints related to vibration occurred during the reporting period.



### 3.1.4 Interpretation

#### 3.1.4.1 Noise Monitoring<sup>2</sup>

##### 3.1.4.1.1 CSR – Salisbury

Noise monitoring of CSR works at Salisbury during standard and non-standard working hours during an approved rail possession was undertaken externally. Monitoring was carried out at the Sensitive Place identified as being likely to experience the highest noise levels during the works. The sensitive place was identified as a residential DAP..

Monitoring was undertaken during standard construction hours (Saturday day) to inform whether the works were likely to exceed noise goals + 20dBA on Sunday day (non-standard working hours).

The measured LA<sub>10</sub> readings were compliant with the Imposed Conditions for works during standard hours. The LA<sub>10</sub> readings were less than the noise goal + 20dBA for works during non-standard working hours.

The works were authorised to proceed under Imposed Condition 10 as they were carried out during extended works hours (approved rail possession). DAP engagement had also occurred with the level of consultation as per the requirements of Imposed Condition 11 (c).

There were no noise complaints received during the execution of the works.

Therefore, the RIS scope of works achieved the outcomes set out by the CGCR and OEMP.

##### 3.1.4.1.2 New Toll Building Demolition – Clapham Yard

Noise monitoring of the demolition work of the new Toll Building during standard working hours at Clapham Yard was undertaken externally. Monitoring was carried out to validate whether the use of larger plant than what was modelled was affecting the noise emissions. The sensitive place was identified as industrial being the George Weston Food Mill (DAP).

- Modelled plant and equipment
  - 1 x 30t excavator with hammer with 2,500 kg hammer
- Actual Plant and equipment
  - 1 x 40t excavator with 2,000 kg hammer, 1 x 40t excavator with grabs, 1 x smaller zero swing excavator

Monitoring was undertaken during standard construction hours and the measured noise levels were consistent with the predictive modelling. This is because whilst plant and equipment was larger, the noise intensive equipment is the hammer. A 2,500 kg hammer was modelled however the hammer used on site was a 2,000 kg hammer.

The measured LA<sub>10</sub> readings were compliant with the Imposed Conditions for works during standard hours. The LA<sub>10</sub> readings were less than the noise goal + 20dBA for works during standard working hours.

The works were authorised to proceed under Imposed Condition 10 as they were carried out during standard works hours (surface works). DAP engagement had also occurred with the level of consultation as per the requirements of Imposed Condition 11 (c).

There were no noise complaints received during the execution of the works.

Therefore, the RIS scope of works achieved the outcomes set out by the CGCR and OEMP.

##### 3.1.4.1.3 Test Pitting – Rocklea Station

Noise monitoring of test pitting at Rocklea Station during standard and non-standard working hours during an approved rail possession was undertaken externally. Monitoring was carried out at the Sensitive Place

<sup>2</sup> All free field measurements are undertaken in accordance with the latest revision of the Noise Measurement Manual from the Department of Environment and Science (DES) reference ESR/2016/2195

identified as being likely to experience the highest noise levels during the works. The sensitive place was identified as a residential DAP).

Monitoring was undertaken during non-standard construction hours to validate the model predictions.

The measured LA<sub>10</sub> readings were compliant with the Imposed Conditions for works during standard hours. The LA<sub>10</sub> readings were less than the noise goal + 20dBA for works during non-standard working hours.

However, the readings were invalidated due to adverse weather conditions. Winds speeds were approximately 48km/h (13.3 m/s) with gusts up to 61km/h (17m/s) during measurement.

As per the DES Noise Measurement Manual (March 2020), Officer Checklist 3 – Noise assessment procedure - Note 3, monitoring should not be carried out if certain weather conditions are experienced:

*Note the approximate wind speed using the Beaufort scale as shown in Table 3 of the NMM. Do not take measurements if raining or wind speed greater than 5 meters/second – (Leaves and small twigs in constant motion; wind extends light flag).*

5m/s wind speeds correspond to 18 km/hr in speed. The weather forecast for the weekend identified that wind speeds ranging from 25 to 29 km/hr were predicted to be experienced throughout the weekend.

The works were scheduled to occur on Sunday 25 July as part of an approved rail possession. Despite the adverse weather prediction, the project environmental representative mobilised to site to attempt undertaking noise monitoring in the event that wind conditions at Rocklea were within the recommended monitoring parameters. Unfortunately, wind conditions were not favourable at the two monitoring locations where the Project team member attempted to do the validation monitoring and further monitoring was abandoned.

The works were authorised to proceed under Imposed Condition 10 as they were carried out during extended works hours (approved rail possession). DAP engagement had also occurred with the level of consultation as per the requirements of Imposed Condition 11 (c).

There were no noise complaints received during the execution of the works.

Therefore, the RIS scope of works achieved the outcomes set out by the CGCR and OEMP.

#### 3.1.4.1.4 Concrete Crushing – Clapham Yard

Noise monitoring of noise intensive activities associated with concrete crushing works at Clapham Yard during standard work hours was undertaken externally. Buffer Distance monitoring was carried out between the concrete crusher and the Sensitive Place identified as being likely to experience the highest noise levels during the works. The sensitive place was identified as an industrial DAP and comprises the George Weston Foods Mill.

Monitoring was undertaken during standard construction hours 17m away from the source and 50m away from the DAP to confirm whether actual noise attenuation was the same as the predicted noise attenuation.

No demolition occurred at night.

The measured LA<sub>10</sub> readings 50m away from the DAP were the same as the predicted noise levels at the same distance. The measured noise levels 50m away from the DAP were less than the applicable noise goals therefore confirming that it was unlikely that the noise levels at the DAP would exceed the noise goal during standard working hours.

The works were authorised to proceed under Imposed Condition 10 as they were carried out during standard works hours (surface works). DAP engagement had also occurred with the level of consultation as per the requirements of Imposed Condition 11 (c).

There were no noise complaints received during the execution of the works.

Therefore, the RIS scope of works achieved the outcomes set out by the CGCR and OEMP.

#### 3.1.4.2 Vibration Monitoring

Not applicable for reporting period.

## 3.2 Air Quality

Imposed 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 CEMP occurs.

Visual monitoring was undertaken during routine environmental inspections. A total of 17 inspections were undertaken by the environment team across Mayne Yard, RNA Showgrounds, Yeronga Station, Clapham Yard and the Northern Corridor.

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 6: Summary of Air Quality monitoring devices

Monitoring Device Installed by UNITY	Area	Name	Date Installed	Status for the Reporting Period
Dust Deposition Gauge	RNA Showgrounds	AQ-01	13 December 2019	Active
Dust Deposition Gauge	Mayne Yard (Eastern Air Shed)	AQ-04	13 February 2020	Active
Dust Deposition Gauge	Clapham Yard (Eastern Air Shed)	AQ-06	1 February 2021	Active
Dust Deposition Gauge	Yeronga Station	AQ-07	23 June 2021	Active Required for the backfilling of Platform 1 which occurred during the month of July 2021
TSP / PM <sub>10</sub> Monitor	Mayne Yard (Eastern Air Shed)	Mayne Yard	23 April 2020	Active
TSP / PM <sub>10</sub> Monitor	Clapham Yard (Eastern Air Shed)	Clapham Yard	1 February 2021	Active Data gap on 3 to 5 July and 7 to 12 July due to power malfunction
TSP / PM <sub>10</sub> Monitor	RNA (Western Air Shed)	RNA	25 August 2020	Active

### 3.2.1 Dust results

As passive dust deposition gauges are analysed monthly, results span from 12 June 2021 to 12 July 2021.

For Yeronga Station, the results span from 23 June 2021 to 23 July 2021.

The results are detailed below and complied with Imposed Condition 13(b) of the CGCR.

Table 7 Dust deposition gauge results for the reporting period

CGCR Goal (mg/m <sup>2</sup> /day)	AQ-01 - RNA Showgrounds (mg/m <sup>2</sup> /day)	AQ-04 Abbotsford Rd (E Mayne) (mg/m <sup>2</sup> /day)	AQ-06– Clapham yard Showgrounds (mg/m <sup>2</sup> /day)	AQ-07– Yeronga Station (mg/m <sup>2</sup> /day)
120	33	20	23	13
Total Rainfall during Period	39.8	39.8	69.2	60.2

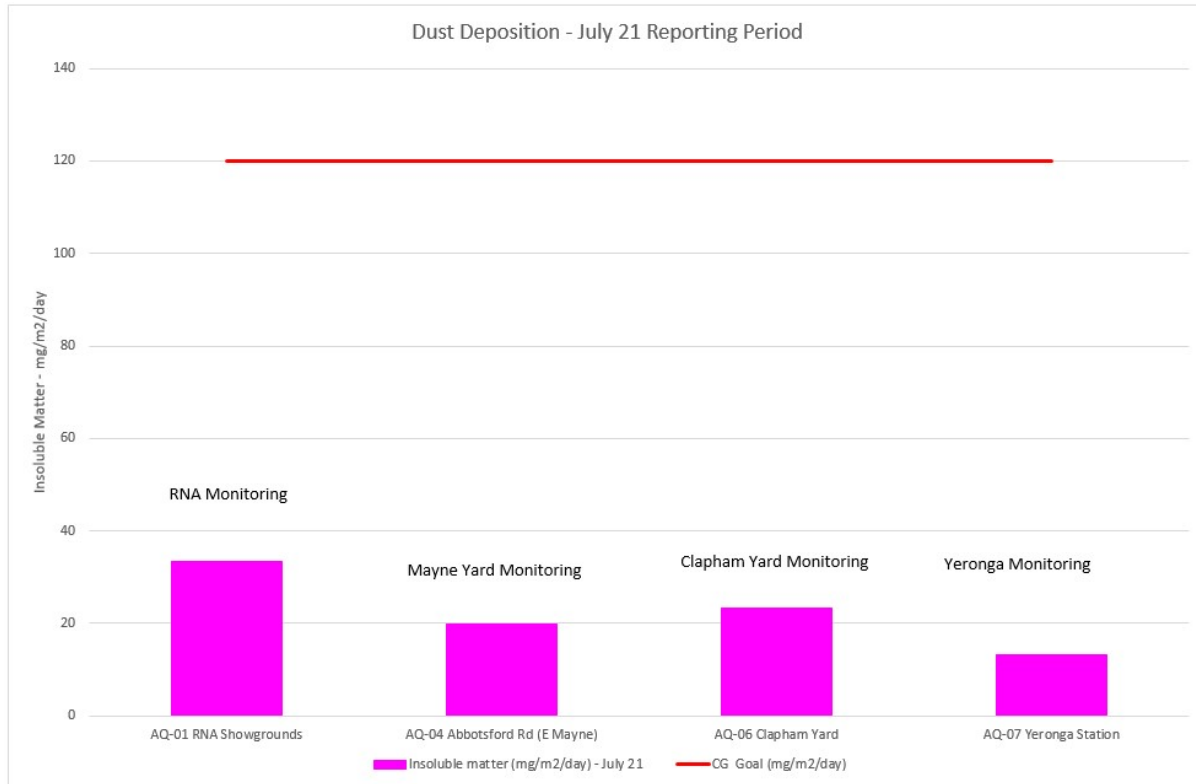


Figure 1 Air Quality Monitoring (Deposited Dust) Results

## 3.2.2 Particulates results

### 3.2.2.1 Air Quality Monitoring Stations

Unity had three (3) active air quality monitoring stations set up for the reporting period. The Clapham Yard station suffered a power failure for nine (9) days. The power failure is attributed to the Easterly facing panel positioned at 90 degrees not catching enough of the sun's rays during the winter period. This issue has now been rectified with the TSP / PM<sub>10</sub> having been relocated on 9 August 2021 at a location where the solar panels powering the station are positioned at the optimal alignment (North facing and as close to perpendicular as possible) and therefore more likely to be exposed to the sun for extended hours during the day.

#### 3.2.2.2 Monitoring results – Reporting Period

External ambient air quality data was collected for total suspended particles (TSP), and particulate matter less than 10 µm (PM<sub>10</sub>).

TSP is one of the indicators for which the Coordinator-General has imposed a goal of 80 µg/m<sup>3</sup> (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

PM<sub>10</sub> is one of the indicators for which the Coordinator-General has imposed a goal of 50 µg/m<sup>3</sup> (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.

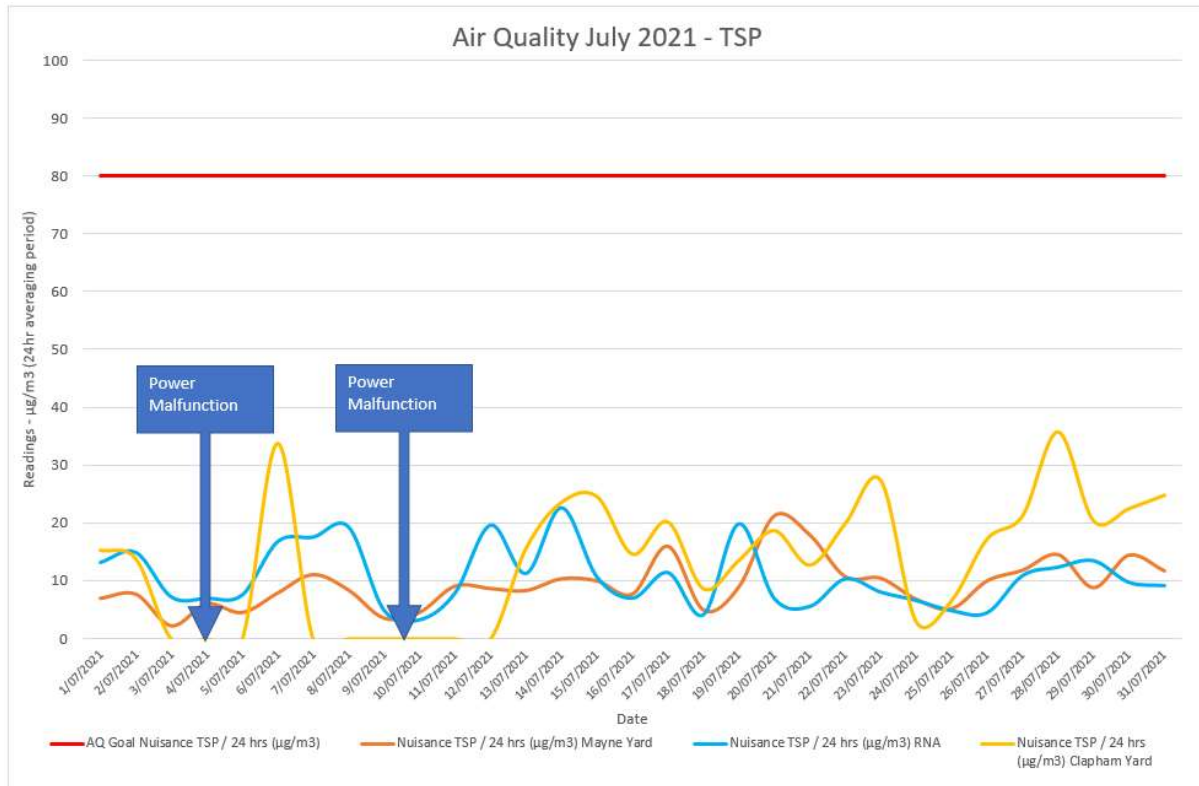


Figure 2 Air Quality Monitoring (TSP) Results

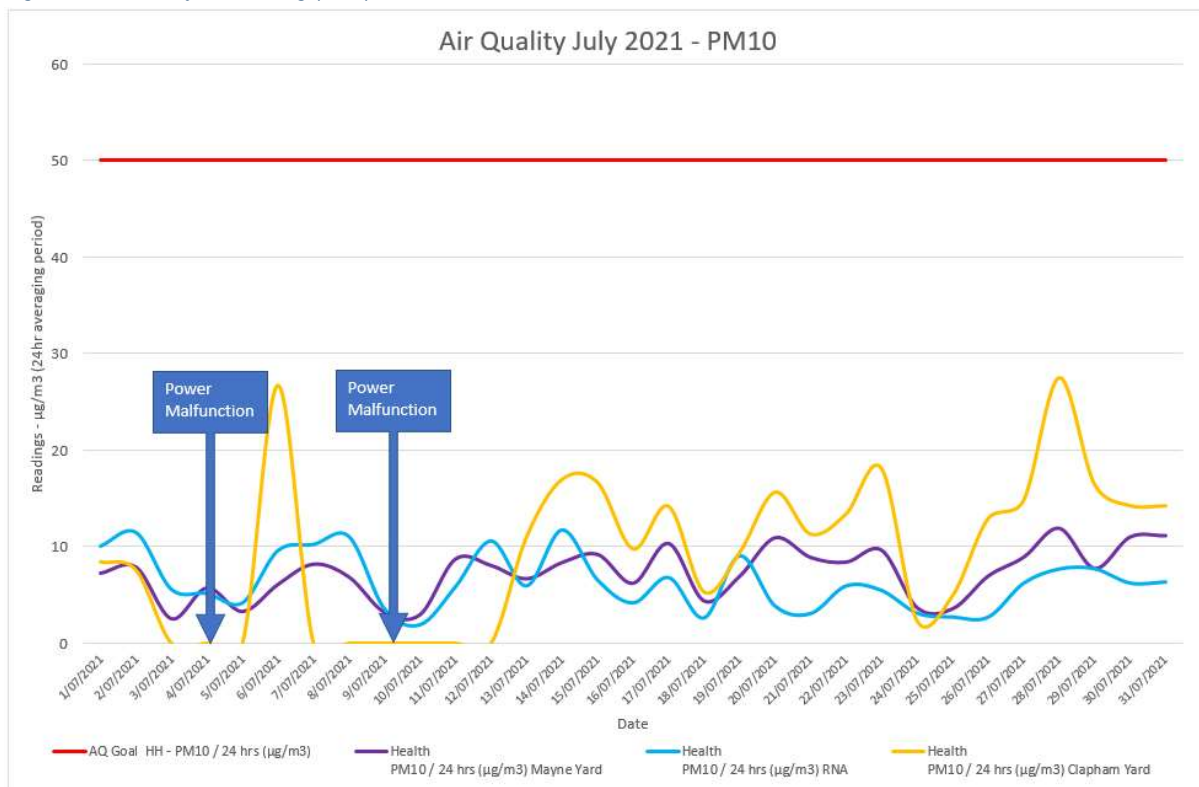


Figure 3 Air Quality Monitoring (PM<sub>10</sub>) Results

### 3.2.2.3 Monitoring results – Annual averaging

Imposed Condition 13 (a) sets annual average air quality goals for TSP (Human health) and PM<sub>10</sub> (Human health).

The below table summarises where TSP and PM<sub>10</sub> monitoring has been carried out over the last 12 months.

The National Environment Protection (Ambient Air Quality) measure Technical paper No.5 provides guidance and procedures for uniform data recording and handling.

(<https://www.nepc.gov.au/system/files/resources/9947318f-af8c-0b24-d928-04e4d3a4b25c/files/aaqprctp05datacollection200105final.pdf>).

For air quality data to be officially reported, as per section 4.5 of Technical Paper No. 5, the minimum data capture would be 75% of the year or 274 days.

*"It is essential that data loss is kept to an absolute minimum. For representative monitoring data and for credible compliance assessment it is desirable to have data capture rates higher than 95%. 75% data availability is specified as an absolute minimum requirement for data completeness".*

In some instances, Relevant Project Works, which triggered TSP and PM<sub>10</sub> monitoring were carried out for less than 274 days (e.g. at the Northern Corridor). In such instances the annual averages are still reported but are indicative only as data capture did not meet the 75% data capture requirements of *National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 5 – Data Collection and Handling*.

Table 8: Summary of Air Quality monitoring devices over a 12-month period

Monitoring Device Installed by UNITY	Area	Date Installed	Date Decommissioned	Number of Days data was captured over 365 days period	Data capture over annual period	Annual performance reporting
TSP / PM <sub>10</sub> Monitor	Northern Corridor (Eastern Air Shed)	23 April 2020	13 January 2021	260	71% over 365 days	<i>Indicative only</i> Data capture did not meet the minimum data capture requirements
TSP / PM <sub>10</sub> Monitor	Mayne Yard (Eastern Air Shed)	23 April 2020	Not yet decommissioned	358	98% over 365 days	Applicable Data capture met minimum data capture requirements
TSP / PM <sub>10</sub> Monitor	RNA (Western Air Shed)	11 June 2020	Not yet decommissioned	314	86% over 365 days	Applicable Data capture met minimum data capture requirements
TSP / PM <sub>10</sub> Monitor	Clapham Yard (Eastern Air Shed)	01 February 2021	Not yet decommissioned	151 (over 181 days)	83% over 181 days	Not Applicable Data capture has not yet met the minimum data capture requirements

The below table summarises the applicable and indicative annual data results for TSP and PM<sub>10</sub> against the performance goals imposed under Condition 13(a). Results in italic are indicative only.



Table 9 Annual Performance Results

Air quality Indicator	Goal	Northern Corridor	Mayne Yard	RNA
TSP	90 µg/m <sup>3</sup>	8 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>
PM <sub>10</sub>	25 µg/m <sup>3</sup>	5 µg/m <sup>3</sup>	8 µg/m <sup>3</sup>	13 µg/m <sup>3</sup>

### 3.2.3 Interpretation

During the reporting period:

- None of the particulate results exceeded their relevant goals
- There was no evidence of dust being generated and leaving the site boundaries
- There were no complaints received associated with air quality concerns.

Annual averages for TSP and PM<sub>10</sub> did not exceed the relevant goals.

The RIS scope of works have met the project outcomes set out by the CGCR and OEMP.

## 3.3 Water Quality

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 CEMP, occurs.

Condition 15(a) requires that discharges of groundwater from Project Works within the Breakfast Creek catchment 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*.

Condition 15(a) requires that discharges of groundwater from Project Works within Moolabin Creek, Yeerongpilly – Oxley Creek catchment must comply with the Oxley Creek - Lowland freshwater environmental values and water quality objectives (Basin no.143 (part) – including all tributaries of the creek) in the *Environment Protection (Water) Policy 2009*.

Water quality monitoring to demonstrate compliance with Condition 15(a) was not triggered during the reporting period. There were no groundwater discharges.

Water quality monitoring to demonstrate compliance with Condition 15(b) and Condition 18 was triggered:

- There were passive discharges through Type 2 and 3 ESC devices associated with rain events:
  - 2 July 2021 - A rain event occurred which generated run-off from the active worksite of Clapham Yard which triggered a post-rain monitoring event at these locations.
  - Visual observations along Moolabin Creek and Rocky Water Holes Creek identified that water was visibly turbid along the system. Photographic records and in-situ physico-chemical parameters were collected.

There were no active surface water discharges (e.g. dewatering through pumping, sediment basin release) to receiving waters.

In-situ physico-chemical parameters results for all monitoring undertaken during the reporting period are presented below.

### 3.3.1 Rainfall Records

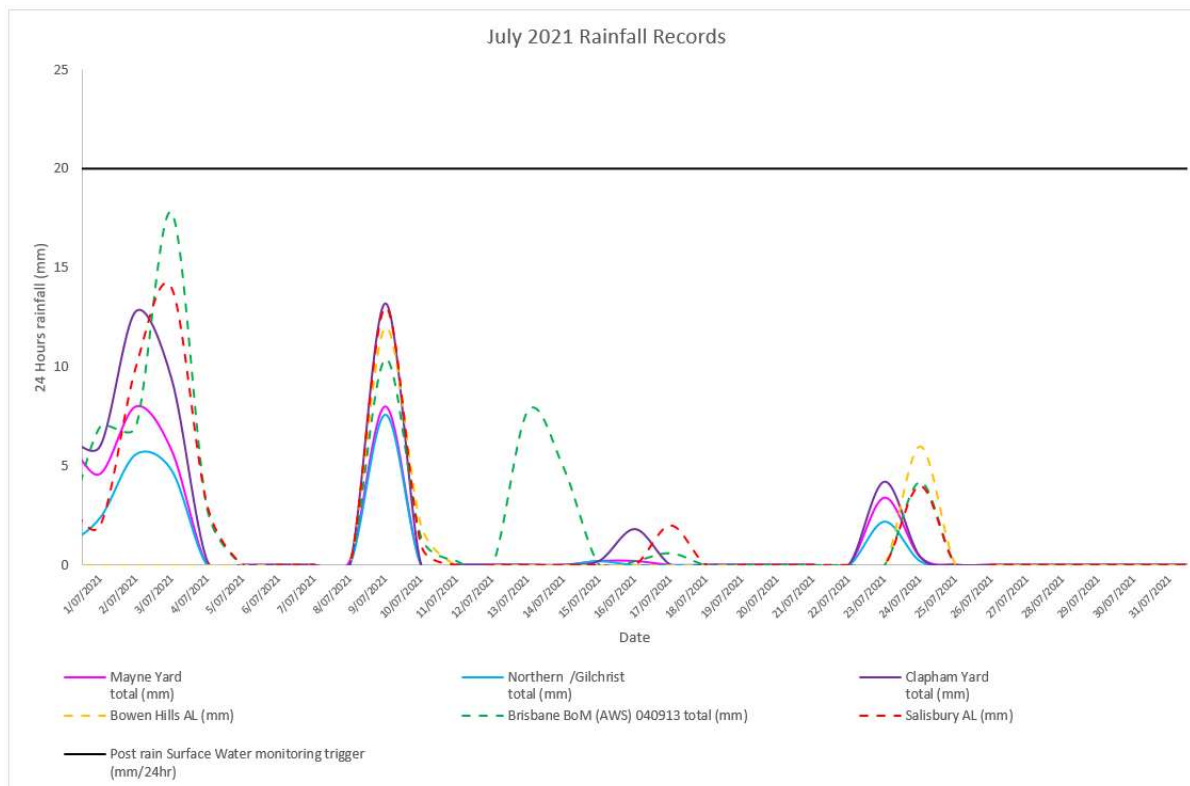


Figure 4 Rainfall Records

### 3.3.2 Surface Water Discharge Monitoring / Post Rainfall Monitoring Results

Post rainfall monitoring is triggered typically following any rainfall event exceeding 20 to 25 mm over 24 hours, however storm events during the high-risk period of the year (November to March) of lesser amounts but higher intensity may cause run-off which would also trigger post rain monitoring consistent with the C-EMP.

Post rainfall monitoring was triggered during the reporting period at the active worksite of Clapham Yard.

The results of monitoring at the relevant waterways are presented below. .

Table 10: Surface Water Discharge Monitoring Results

Date	Location	Waterway	Tide	Discharge Criteria <sup>3</sup>			
				Turbidity (NTU)  Nil until Turbidity / TSS correlation achieved <sup>4</sup>	TSS (mg/L)  <50	DO (%)  Nil	pH (pH Unit) Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems: 5.0 – 7.0
03/07/21	Clapham Yard	Moolabin Creek (SW-05 - upstream)	N/A	Field: 25 Lab: 17	7	88	7.1
03/07/21	Clapham Yard	Moolabin Creek (SW-06 - downstream)	N/A	Field: 26.5 Lab: 20	10	86	7.0
03/07/21	Clapham Yard	Rocky Water Holes Creek (SW-07 - upstream)	N/A	Field: 26 Lab: 18	6	91	6.9
03/07/21	Clapham Yard	Rocky Water Holes Creek (SW-08 - downstream)	N/A	Field: 25 Lab: 21	9	88	7.1

### 3.3.3 Groundwater Discharge Monitoring Results

Groundwater discharge monitoring was not triggered during the reporting period.

### 3.3.4 Routine Surface Water Monitoring Results

During the reporting period, UNITY did not undertake routine surface water monthly monitoring. A review of the data sample has identified that over 12 months of continuous data collection has occurred with a total of over 18 monitoring events. The frequency of background monitoring has therefore been reduced to bi-annually, with the next sampling round to be undertaken during the dry season (April to September), in August 2021. This reduction of monitoring frequency is acceptable to continue informing the Dis-1 Credit for the ISCA 'Excellent Rating' the Project is pursuing.

### 3.3.5 Interpretation

Post rainfall monitoring undertaken at Moolabin Creek identified that water quality was visibly more turbid than usually observed following rainfall events less than 20mm. There were no visible sources of turbid water discharges from site.

However, significant vegetation clearing, not associated with the Project Works, had been carried out upstream of the Project Boundary (see below plate) at Moolabin Creek back in May 2021 and the bed and bank of the creek have not been stabilised. This clearing is the likely source of the increased in stream turbidity.

<sup>3</sup> Refer to the waterways and water quality management plan, a C-EMP sub-plan for details of derivation of the discharge criteria

<sup>4</sup> Correlations are typically run on the source water (i.e. basins) not the receiving system where there is a dilution component of potentially diffuse sources of sediments from non-Project related areas. Due to the very limited amount of discharges the RIS Scope of Works has experienced, there is no correlation available. Typically, a minimum of 20 data points is used to determine TSS / in field turbidity correlation for site waters.



*Plate 1: Bed and Bank Vegetation Clearing yet to be stabilised at Moolabin Creek Upstream of the Project Boundaries*

Therefore, the source of the increased turbidity cannot not be reasonably accredited to the Project Works.

Compliance with Imposed Conditions 15 and 18 was met.

## 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 (NCE) is defined as Project Works that do not comply with the Imposed Conditions.

#### 4.1.1 Non - Compliance Events Summary

Table 11 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 CEMP Compliance

The below table summarises compliance status with the CEMP and monitoring requirements of relevant sub-plans for the reporting period.

Table 12 CEMP and relevant Subplans monitoring requirements – Compliance Status for the reporting period

Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with 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	Moderate to High	Yes – visual monitoring undertaken as part of routine inspections. Monitoring for TSP, PM10 and deposited dust also undertaken	Compliant	Not Applicable
Air Quality	Complaints response	Moderate to High	Not triggered – no complaints	Compliant	Not Applicable
Noise	Buffer distance tests based on the outcomes of the predictive assessment based / risk profile of activities	Moderate to High	Yes	Compliant	Not Applicable
Noise	Plant noise audits for noisy plant to validate models input as required	Moderate to High	No	N/A	Not Applicable
Noise	Complaints response	Moderate to High	Not triggered	Compliant	Not Applicable
Vibration	Construction Monitoring at Sensitive Places / DAPs - Model verification based on the outcomes of the predictive assessment based / risk profile of activities	Moderate to High	Not triggered	Compliant	Not Applicable
Vibration	Complaints response	Moderate to High	Not triggered – no complaints	Compliant	Not Applicable
Water Quality	Monthly monitoring	N/A	No – monitoring regime reduced to bi-annually	Compliant	Not Applicable
Water Quality	Post Rainfall	Moderate to High	Yes	Compliant	Not Applicable

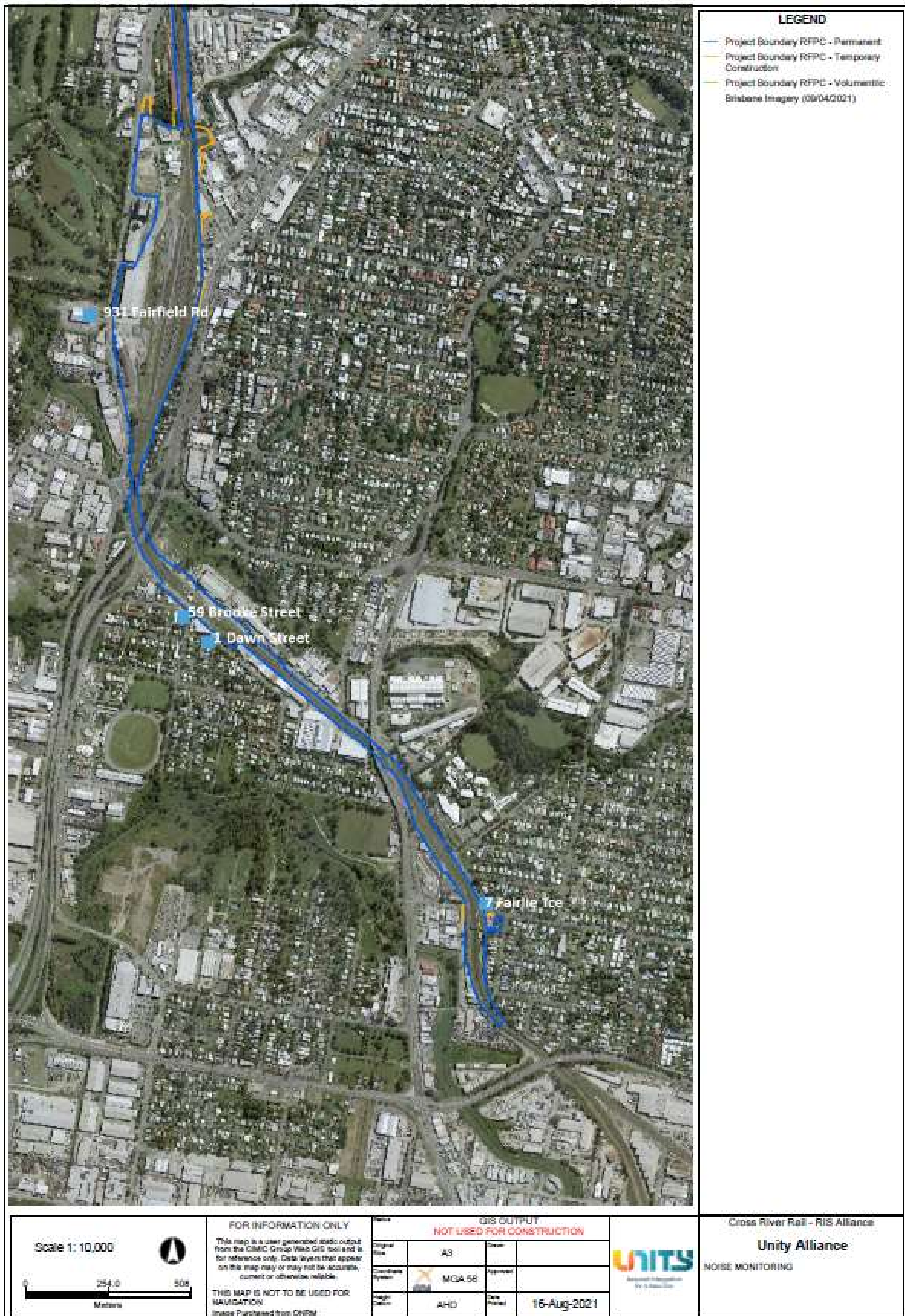
Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with CEMP / Subplan	Effect of the non-compliance
Water Quality	Dewatering	Moderate to High	Not triggered – no dewatering to receiving water systems	N/A	Not Applicable



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

None for this reporting period.

## Attachment 2    Monitoring Locations – Noise

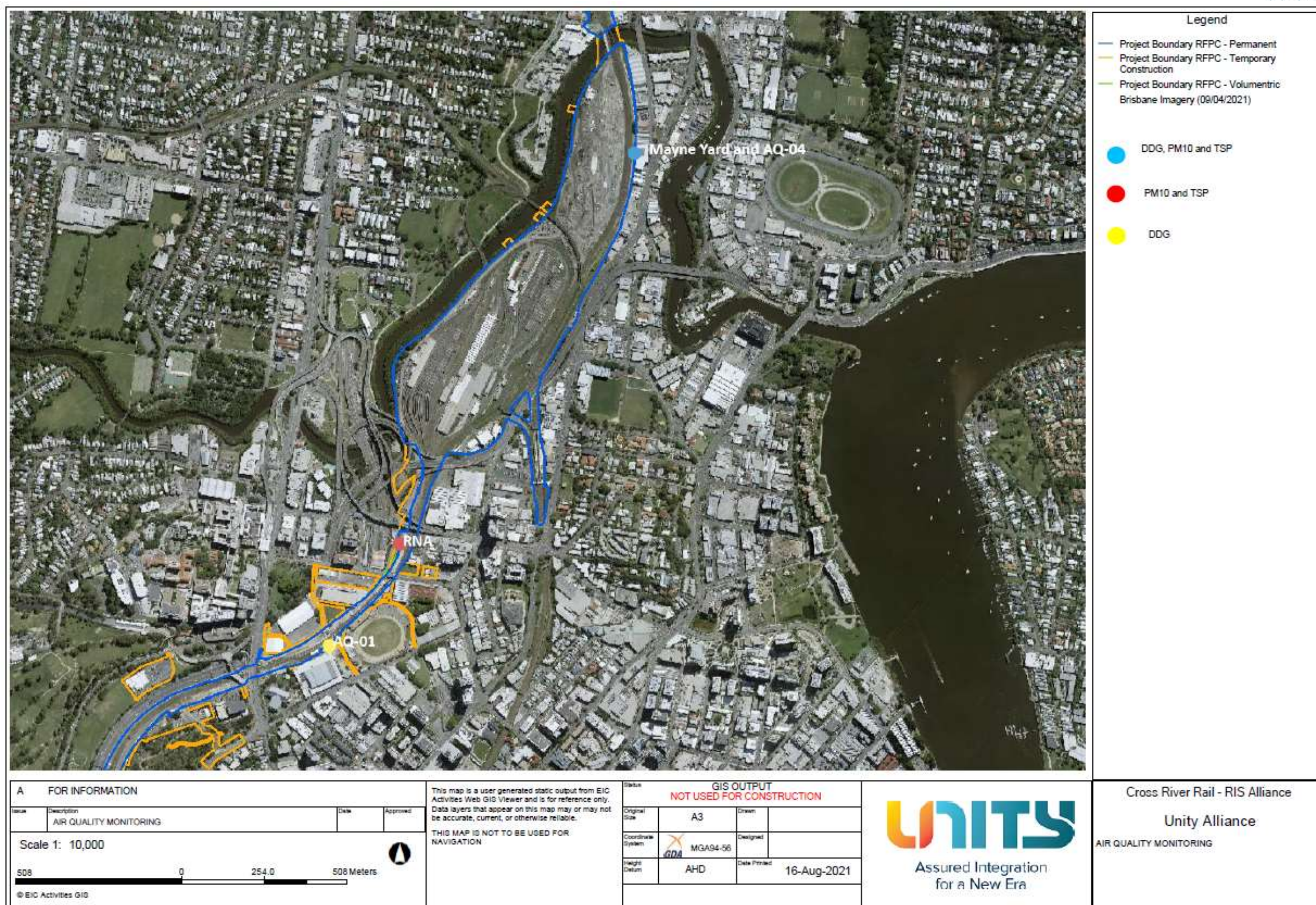


## Attachment 3    Monitoring Locations – Vibration

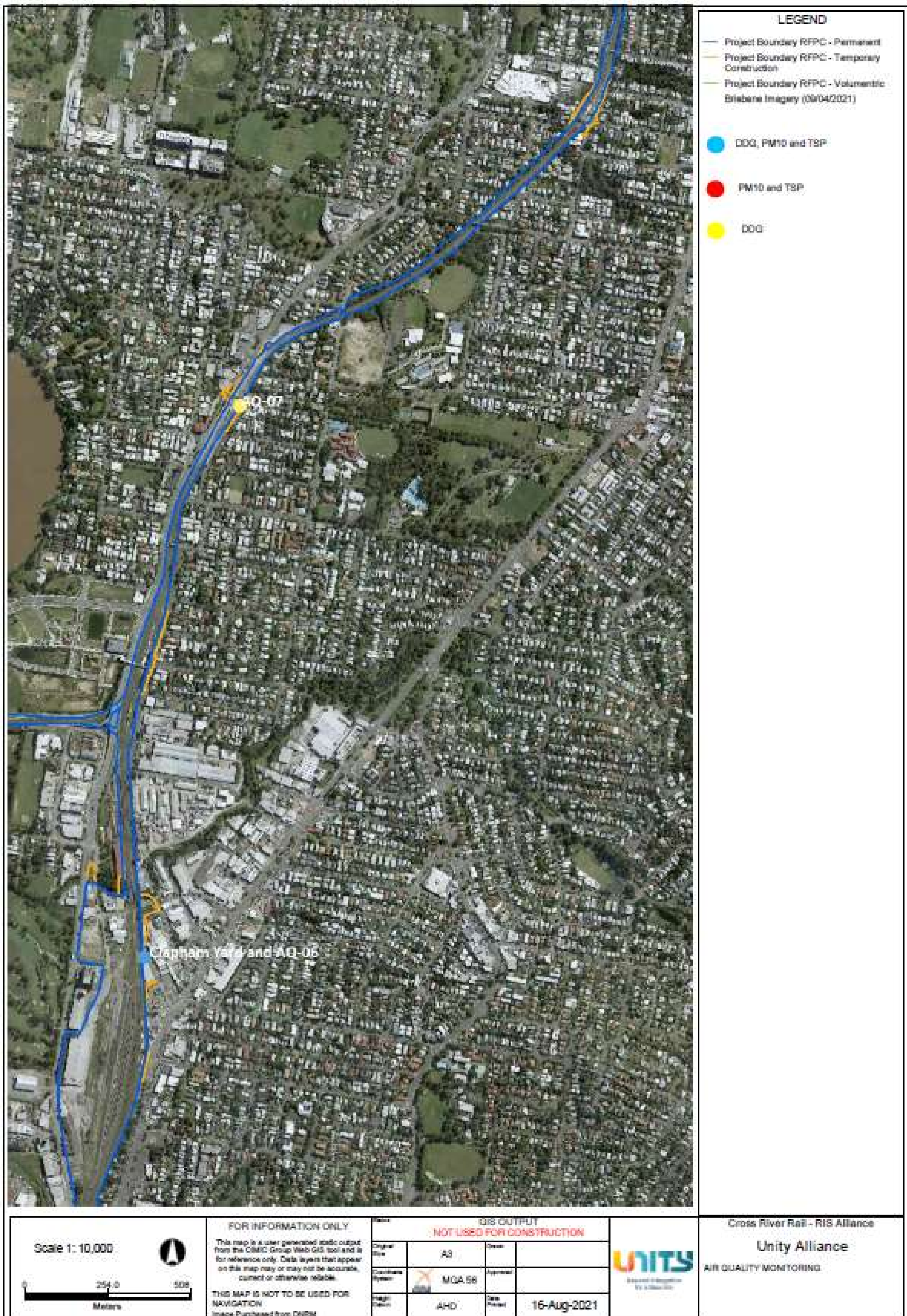
Not applicable for the reporting period

## Attachment 4    Monitoring Locations – Air Quality



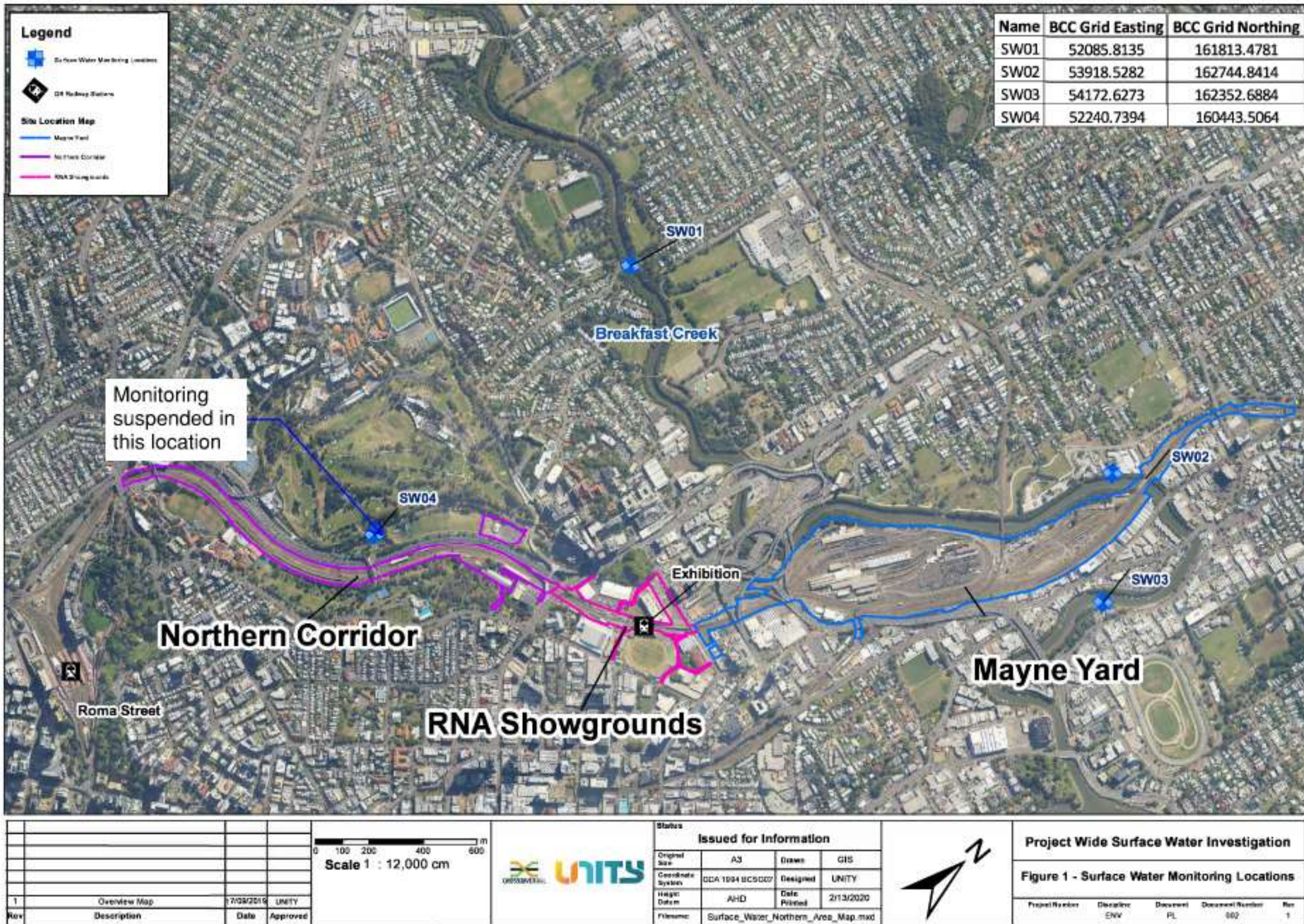




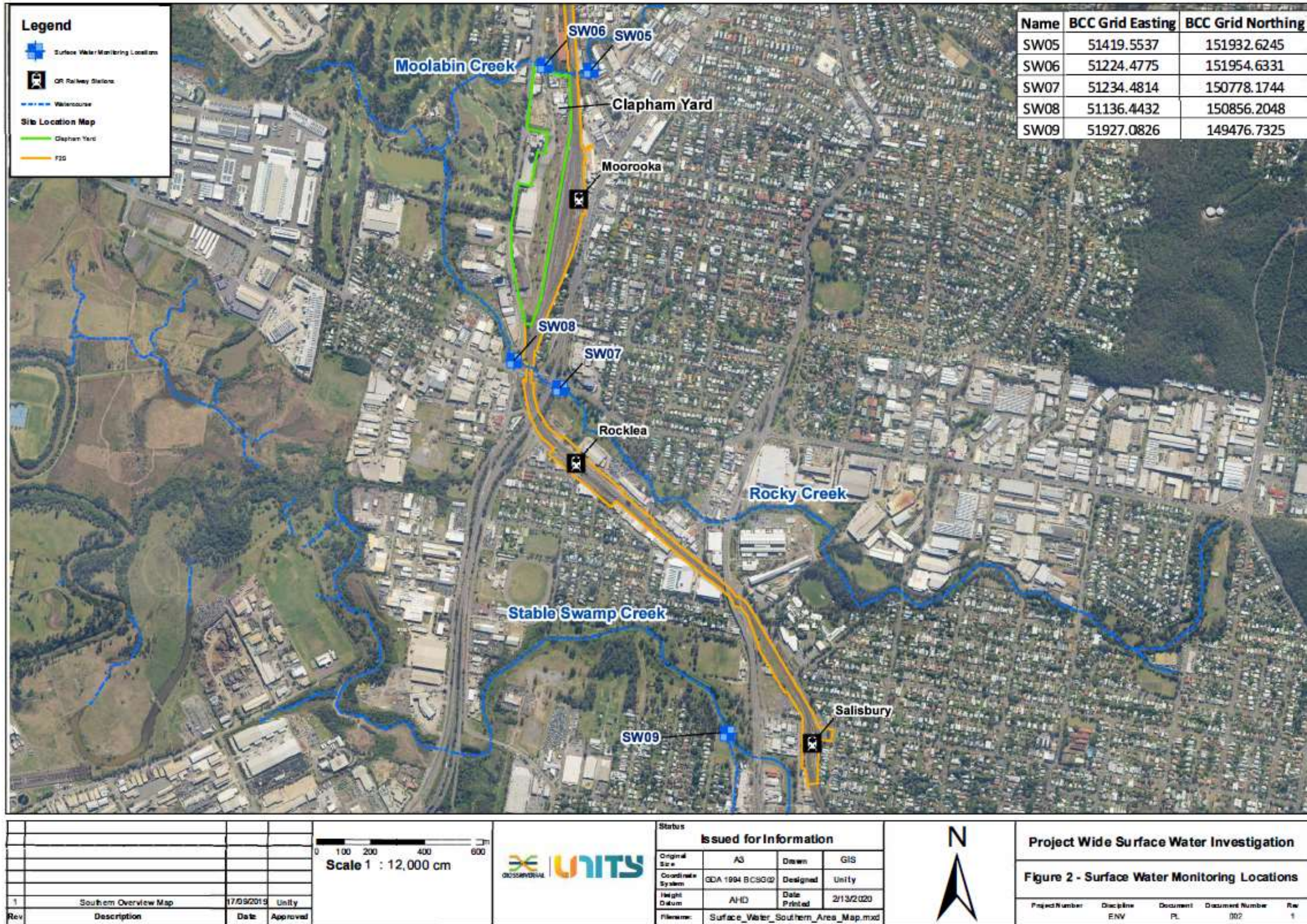


## Attachment 5    Monitoring Locations – Surface Water





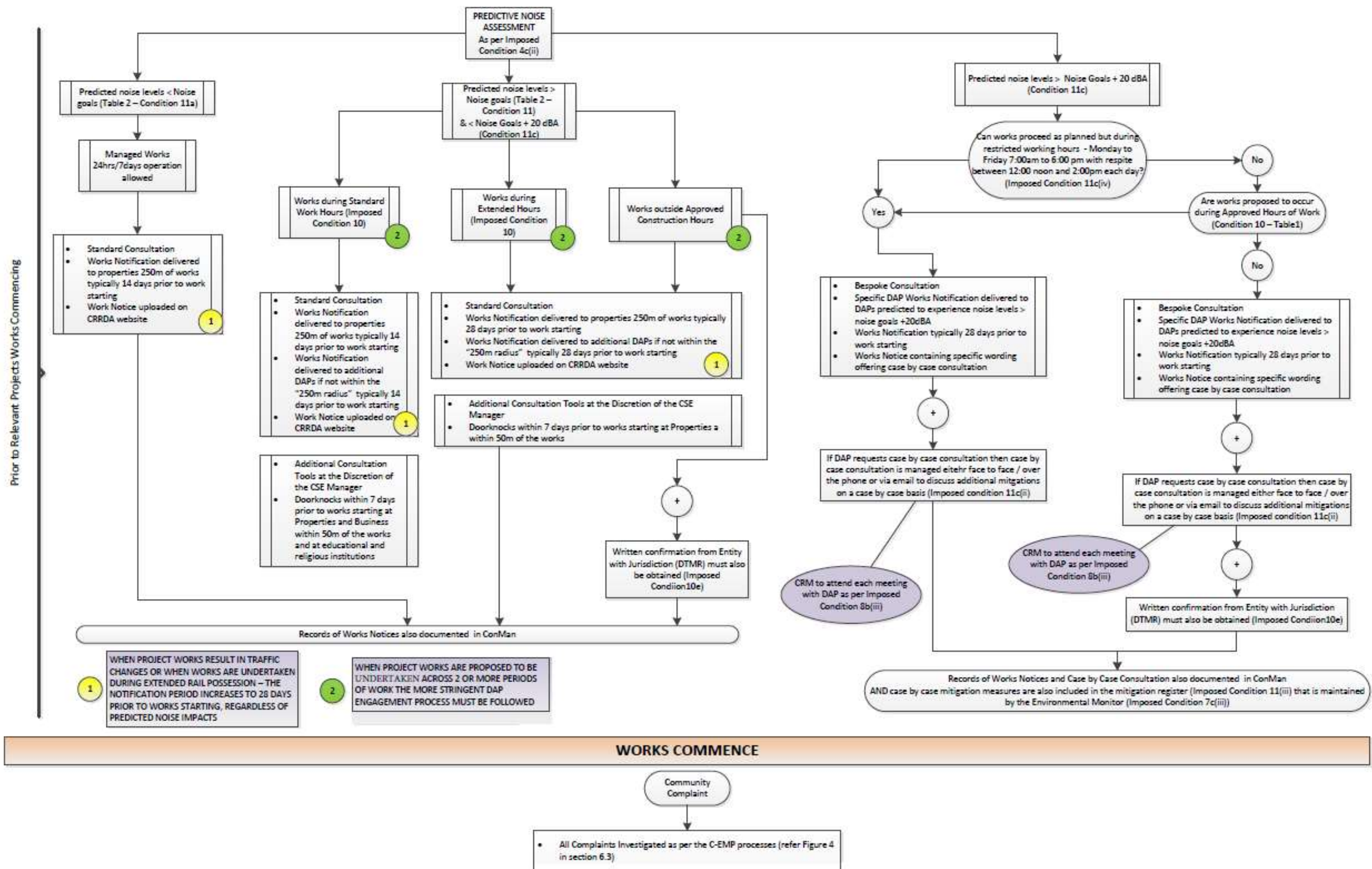






## Attachment 6 DAP Engagement Process

### UNITY ALLIANCE – COMMUNITY, STAKEHOLDERS AND DIRECTLY AFFECTED PERSONS CONSULTATION AND ENGAGEMENT PROCESS – (RfPC 9 Conditions)



# Appendix B TSD Monthly Report

## COORDINATOR-GENERAL'S MONTHLY REPORT: JULY 2021

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

### 1. Monthly Monitoring Summary

It is CBGU Joint Venture'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 fourteen (14) occasions, and noise monitoring was conducted on twenty-seven (27) occasions during July 2021. Each vibration and noise monitoring event confirmed works adhered to project requirements.

Ambient air quality monitoring was conducted at Roma Street, Albert Street, Woolloongabba, Boggo Road, Southern Portal and Northern Portal precinct sites during July 2021. Air quality monitoring confirmed works adhered to project requirements.

Water quality monitoring was conducted before the release of water from the site on nine (9) occasions. Each monitoring event confirmed project requirements were adhered to. One (1) round of surface water quality monitoring was conducted; the monitoring events 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.	<b>General conditions</b> – compliance with the Project Changes relevant to the Contractor's scope.	Yes	CBGU project works have been conducted in compliance with the Imposed Conditions.
2.	<b>Outline Environmental Management Plan</b> – timely submission to the Coordinator-General, including required sub plans.	N/A	The OEMP is not an obligation of the CBGU Joint Venture.
3.	<b>Design</b> – the achievement of the Environmental Design Requirements.	Yes	Design and implementation proceeded in accordance with the Environmental Design Requirements.
4.	<b>Construction Environmental Management Plan</b> – all relating to Relevant Project Works.	Yes	All CBGU works were conducted in accordance with the Construction Environmental Management Plan (CEMP) (Rev 8).
5.	<b>Compliance and Incident management</b> – Non-compliance events, notifications and reporting.	Yes	Nil non-compliances occurred during the monitoring period (refer to Section 4).
6.	<b>Reporting</b> – Monthly and Annual reporting.	Yes	All reporting requirements are completed in accordance with Imposed Condition 6.
7.	<b>Environmental Monitor</b> – 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.	<b>Community Relations Monitor</b> – 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.	<b>Community engagement plan</b> – 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.	<b>Hours of work</b> – works undertaken during approved hours.	Yes	CBGU project works have been conducted in accordance with the approved hours of work.

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
11.	<b>Noise</b> – Work must aim to achieve internal noise goals for human health and well-being.	Yes	CBGU 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.
	<b>Vibration</b> – Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	CBGU 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.	<b>Property damage</b> relating to ground movement	Yes	The management of potential impacts relating to property damage has been completed in accordance with Imposed Condition 12.
13.	<b>Air quality</b> – Works must aim to achieve air quality goals for human health and nuisance.	Yes	CBGU project works have aimed to achieve air quality goals. Air quality monitoring data is provided within Section 3.3.
14.	<b>Traffic and transport</b> – Works must minimise adverse impacts on road safety and traffic flow.	Yes	CBGU project works have been conducted in a manner that has minimised adverse impacts on road safety and traffic flow.
15.	<b>Water quality</b> – Works must not discharge surface water and groundwater from the construction site above the relevant environmental values and water quality objectives.	Yes	CBGU has prepared and manages processes to ensure water quality is managed in accordance with Imposed Condition 15.
16.	<b>Water resources</b> – evaluate potential impact, plan works, implement controls and monitor the inflow of groundwater associated with drawdown.	Yes	CBGU project works are managed in accordance with Imposed Condition 16.
17.	<b>Surface water</b> – 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 CBGU project works considers the requirements of Imposed Condition 17.
18.	<b>Erosion and sediment control</b> – 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	CBGU has prepared and manages processes to ensure erosion & sediment control is managed in accordance with Imposed Condition 18.
19.	<b>Acid Sulfate Soils</b> managed as per the <i>Queensland Acid Sulfate Soil Technical Manual</i> .	Yes	CBGU has prepared and manages processes to ensure acid sulphate soils are managed in accordance with Imposed Condition 19.

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
20.	<b>Landscape and open space</b> – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria park	Yes	CBGU project works are designed and implemented in accordance with Condition 20.
21.	<b>Worksite rehabilitation</b> – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	Yes	CBGU project works are designed and implemented in accordance with Condition 21.

### 3. 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 acknowledges instances exist that these goals may not be achieved.

Fourteen (14) vibration monitoring sessions were conducted during July 2021.

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

Table 2: Vibration Monitoring Data

No.	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 / Goal Type	Adhered to Project Requirements (Yes / No)
1.	01/07/2021	2:22:00 PM	01/07/2021	Roma Street (Roma Street Precinct)	-	2.25	10	Heritage Structure (Controlled Blast)	Yes
2.	02/07/2021	1:35:00 PM	02/07/2021	Roma Street (Roma Street Precinct)	-	0.50	10	Heritage Structure (Controlled Blast)	Yes
3.	07/07/2021	12:30:00 PM	07/07/2021	Roma Street (Roma Street Precinct)	-	1.65	10	Heritage Structure (Controlled Blast)	Yes
4.	09/07/2021	2:32:00 PM	9/07/2021	Ross street (Woolloongabba Precinct)	0.11	0.13	0.5	Residential	Yes
5.	12/07/2021	10:01:00 AM	15/07/2021	Queen Street (Tunnel Alignment)	0.12	0.53	25	Structure	Yes

No.	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 / Goal Type	Adhered to Project Requirements (Yes / No)
6.	13/07/2021	12:30:00 PM	13/07/2021	Roma Street (Roma Street Precinct)	-	0.40	10	Heritage Structure (Controlled Blast)	Yes
7.	14/07/2021	10:03:00 AM	15/07/2021	Gregory Terrace (Northern Portal)	0.09	0.35	50	Structure	Yes
8.	15/07/2021	4:22:00 PM	15/07/2021	Roma Street (Roma Street Precinct)	-	0.45	10	Heritage Structure (Controlled Blast)	Yes
9.	15/07/2021	12:02:00 PM	16/07/2021	Albert Street (Tunnel Alignment)	0.09	0.20	2	Heritage Structure	Yes
10.	16/07/2021	10:53:00 AM	23/07/2021	King George Square (Tunnel Alignment)	0.12	0.62	2	Structure	Yes
11.	16/07/2021	8:48:00 AM	25/07/2021	King George Square (Tunnel Alignment)	0.24	0.56	2	Heritage Structure	Yes
12.	16/07/2021	8:54:00 AM	25/07/2021	King George Square (Tunnel Alignment)	0.11	0.40	2	Heritage Structure	Yes
13.	16/07/2021	1:09:00 PM	21/07/2021	Ross Street (Tunnel Alignment)	0.15	0.49	0.5	Residential	Yes
14.	20/07/2021	4:15:00 PM	20/07/2021	Roma Street (Roma Street Precinct)	-	0.75	10	Heritage Structure (Controlled Blast)	Yes

- [1] Monitoring at times proceeds over the day & night time periods. The most conservative (night) goal has been noted above, however vibration recorded outside the night-time period is subject to a separate criteria.

### 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 Reports acknowledge instances exist that these goals may not be achieved.

Noise monitoring was conducted on twenty-seven (27) occasions during July 2021. All noise monitoring data adhered to project requirements and is provided in the table below.

Table 3: Noise Monitoring Data

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External <sup>[3]</sup> Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 <sup>[1]</sup>	Noise level LA10 <sup>[1]</sup>	Noise Goal LAeq <sup>[2]</sup>	Noise level LAeq <sup>[2]</sup>	Adhered to Project Requirements (Yes / No)
1.	1/07/2021	2:22:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	Construction	-	-	130 <sup>[4]</sup>	100.8 <sup>[4]</sup>	Yes
2.	2/07/2021	1:35:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	Construction	-	-	130 <sup>[4]</sup>	111.5 <sup>[4]</sup>	Yes
3.	6/07/2021	8:18:00 PM	North Quay (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Spoil Haulage	Railway and Road Traffic	50	44	40	43.4	Yes
4.	6/07/2021	8:36:00 PM	North Quay (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Excavation	Construction	50	45.6	40	44.2	Yes
5.	6/07/2021	3:24:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation and Spoil Haulage	Construction	72	71.7	62	69.7	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External <sup>[3]</sup> Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 <sup>[1]</sup>	Noise level LA10 <sup>[1]</sup>	Noise Goal LAeq <sup>[2]</sup>	Noise level LAeq <sup>[2]</sup>	Adhered to Project Requirements (Yes / No)
6.	6/07/2021	3:45:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation and Spoil Haulage	Construction	72	68.7	62	66.7	Yes
7.	7/07/2021	12:30:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	Construction	-	-	130 <sup>[4]</sup>	102.3 <sup>[4]</sup>	Yes
8.	7/07/2021	8:31:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation and Spoil Haulage	Construction	67	70.8	57	69	Yes
9.	7/07/2021	8:34:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation and Spoil Haulage	Construction	67	67.8	57	66.1	Yes
10.	8/07/2021	9:02:00 AM	Railway Terrace (Southern Portal)	Construction Monitoring at Sensitive Places	External	Piling Works	Construction and Railway Operations	77	66.7	67	71.7	Yes
11.	8/07/2021	9:26:00 AM	Ipswich Road (Southern Portal)	Construction Monitoring at Sensitive Places	External	Piling Works and Excavation	Construction and Railway Operations	67	64.4	57	63.1	Yes
12.	8/07/2021	8:06:00 PM	North Quay (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Ground Stabilisation	Building Ventilation	50	45.7	40	45.2	Yes



No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External <sup>[3]</sup> Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 <sup>[1]</sup>	Noise level LA10 <sup>[1]</sup>	Noise Goal LAeq <sup>[2]</sup>	Noise level LAeq <sup>[2]</sup>	Adhered to Project Requirements (Yes / No)
13.	9/07/2021	2:42:00 PM	Ross Street (Tunnel Alignment)	Stakeholder Enquiry	Internal	Tunnelling	Domestic	55	40.7	45	37.2	Yes
14.	12/07/2021	11:49:00 AM	Gregory Terrace (Northern Portal)	Construction Monitoring at Sensitive Places	External	Piling	Construction	62	91.6	52	87.4	Yes
15.	12/07/2021	12:09:00 PM	Gregory Terrace (Northern Portal)	Construction Monitoring at Sensitive Places	External	Piling	Construction	62	81.1	52	78.5	Yes
16.	12/07/2021	7:49:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Excavation, Spoil Haulage and Tunnelling	Construction	50	39.6	40	40.2	Yes
17.	12/07/2021	8:28:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation, Spoil Haulage and Tunnelling	Construction	67	67.4	57	64.7	Yes
18.	13/07/2021	12:30:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	Construction	-	-	130 <sup>[4]</sup>	107.9 <sup>[4]</sup>	Yes
19.	14/07/2021	12:56:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation, Spoil Haulage and Tunnelling	Construction	72	75.1	62	72.9	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External <sup>[3]</sup> Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 <sup>[1]</sup>	Noise level LA10 <sup>[1]</sup>	Noise Goal LAeq <sup>[2]</sup>	Noise level LAeq <sup>[2]</sup>	Adhered to Project Requirements (Yes / No)
20.	15/07/2021	1:01:00 PM	Gregory Terrace (Northern Portal)	Construction Monitoring at Sensitive Places	External	Piling and concrete works	Construction	62	72.8	52	72.5	Yes
21.	15/07/2021	4:22:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	Construction	-	-	130 <sup>[4]</sup>	111.6 <sup>[4]</sup>	Yes
22.	16/07/2021	12:12:00 PM	River Terrace (Tunnel Alignment)	Stakeholder Enquiry	External	Tunnelling	Non-Project Related construction	62	55.9	52	53.4	Yes
23.	20/07/2021	4:15:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled Blast	Construction	-	-	130 <sup>[4]</sup>	111.2 <sup>[4]</sup>	Yes
24.	22/07/2021	1:10:00 PM	Ross Street (Tunnel Alignment)	Stakeholder Enquiry	Internal	Tunnelling	Domestic	55	39.1	45	37.9	Yes
25.	27/07/2021	9:49:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation	Road Traffic	67	74.8	57	71.9	Yes
26.	28/07/2021	11:52:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground Stabilisation	Construction and Road Traffic	72	68.6	62	67.7	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External <sup>[3]</sup> Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 <sup>[1]</sup>	Noise level LA10 <sup>[1]</sup>	Noise Goal LAeq <sup>[2]</sup>	Noise level LAeq <sup>[2]</sup>	Adhered to Project Requirements (Yes / No)
27.	31/07/2021	1:07:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Crane Erection	Construction	72	76.4	62	76.9	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.

- [4] Blasting is measured in dB Linear Peak.

### 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 acknowledges instances exist that these goals may not be achieved. Dust deposition monitoring was performed during July 2021. 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 Goals <sup>[1]</sup>			Monitoring results (mg/m <sup>2</sup> /day)	Comments
	Criterion	Air Quality Indicator	Goal (mg/m <sup>2</sup> /day)		
Northern Portal	Nuisance	Deposited dust	120	_[2]	Air quality monitoring was performed during the reporting period. All results adhered to project requirements.
Roma Street Precinct				3.23	
Albert Street Precinct (South)				17.86	
Albert Street Precinct (North)				35.71	
Woolloongabba Precinct (North)				18.75	
Woolloongabba Precinct (South)				41.38	
Boggo Road Precinct (North)				20.69	
Boggo Road Precinct (South)				37.93	
Southern Portal (South)				17.24	
Southern Portal (East)				44.83	

- [1] 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.
- [2] The Northern Portal sample was damaged due to strong winds this month. It has since been replaced.

### 3.3.2 Particulates and Ambient Air Quality Results

Total Suspended Particulates (TSP) and particulate matter less than 10µm (PM10) monitoring was conducted during July 2021.

TSP and PM10 are monitored using portable air quality units and nearby Government air quality stations. Targeted monitoring of potential dust-generating activities is conducted by the mobile air quality units and was completed at Albert Street, Woolloongabba, Boggo Road and Northern Portal Precincts during July 2021. Three (3) Government air quality stations near the Construction Precincts are also utilised.

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

Date	TSP Project Goal	PM10 Project Goal	Woolloongabba		Albert		Boggo Road		Northern Portal	
			TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
			(µg/m3/24 hr)							
01-July-21	80	50	16.66	16.60	13.92	13.90	14.10	14.07	16.13	16.09
02-July-21	80	50	24.23	24.17	23.36	23.35	13.81	13.81	21.93	21.91
03-July-21	80	50	-	-	20.94	20.92	20.38	20.36	22.92	22.91
04-July-21	80	50	14.47	14.37	15.61	15.55	14.23	14.19	15.85	15.82
05-July-21	80	50	5.54	5.38	6.91	6.86	2.61	2.58	3.57	3.52
06-July-21	80	50	11.91	11.76	16.77	16.72	8.07	8.06	10.26	10.20
07-July-21	80	50	16.60	16.44	22.25	22.18	13.83	13.81	17.09	17.06
08-July-21	80	50	16.06	15.95	24.46	24.43	12.78	12.77	14.48	14.44
09-July-21	80	50	14.47	14.38	14.65	14.63	6.04	6.01	12.21	12.19
10-July-21	80	50	6.75	6.57	9.92	9.87	4.17	4.11	4.41	4.34
11-July-21	80	50	10.12	10.03	17.76	17.74	7.22	7.21	9.49	9.46
12-July-21	80	50	11.02	10.92	14.12	14.11	7.52	7.52	13.15	13.13
13-July-21	80	50	10.16	10.05	11.03	10.98	5.98	5.98	10.04	10.00
14-July-21	80	50	14.38	14.25	12.90	12.87	10.57	10.55	11.90	11.88
15-July-21	80	50	12.38	12.25	16.87	16.85	4.51	4.49	11.61	11.54
16-July-21	80	50	14.05	13.80	16.01	15.96	3.09	3.04	9.16	9.10
17-July-21	80	50	9.40	8.97	8.00	7.95	3.56	3.49	5.99	5.82
18-July-21	80	50	5.77	5.56	6.34	6.31	2.98	2.95	3.63	3.53

Date	TSP	PM10	Woolloongabba		Albert		Boggo Road		Northern Portal	
	Project Goal	Project Goal	TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
	(µg/m3/24 hr)									
19-July-21	80	50	9.25	8.98	10.61	10.58	4.85	4.83	8.51	8.47
20-July-21	80	50	7.45	7.27	9.75	9.71	3.11	3.07	3.41	3.35
21-July-21	80	50	5.19	5.03	8.82	8.81	1.84	1.82	2.89	2.82
22-July-21	80	50	12.84	12.70	12.36	12.34	8.08	8.06	11.59	11.55
23-July-21	80	50	26.72	26.60	29.54	29.50	19.74	19.73	24.65	24.61
24-July-21	80	50	15.34	15.14	16.56	16.52	9.06	9.01	15.31	15.28
25-July-21	80	50	4.18	3.88	4.74	4.70	1.62	1.57	2.61	2.52
26-July-21	80	50	8.37	8.2	13.84	13.82	3.89	3.89	4.03	3.94
27-July-21	80	50	13.79	13.59	13.07	13.04	8.93	8.9	9.87	9.81
28-July-21	80	50	29.11	28.89	23.87	23.82	21.09	21.07	24.69	24.62
29-July-21	80	50	16.98	16.66	15.63	15.57	11.91	11.87	14.91	14.79
30-July-21	80	50	15.76	15.6	16.91	16.89	11.53	11.5	12.57	12.48
31-July-21	80	50	19.87	19.78	20.81	20.79	15.65	15.63	23.31	23.27

- [1] 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.
- [2] Due to a technical fault, the Woolloongabba air quality units stopped functioning on the 3 July 2021. The issue was immediately resolved. A nearby (Southern Brisbane) DES Air Quality Stations demonstrated compliant air quality during July 2021, these results are provided below. Low levels were also consistently monitored throughout the month when the unit was operating.

CBGU also utilises three (3) Government air quality monitoring stations to monitor PM10 near to the project sites. The results during this reporting period were as follows:

- Brisbane CBD: PM<sub>10</sub> daily Maximum average: **28.8 µg/m3/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd&parameter=18&date=1/07/2021&timeframe=month>)
- South Brisbane: PM<sub>10</sub> daily Maximum average: **33.7 µg/m3/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr&parameter=18&date=1/07/2021&timeframe=month>)
- Woolloongabba: PM<sub>10</sub> daily Maximum average: **34.7 µg/m3/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo&parameter=18&date=1/07/2021&timeframe=month>)

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

# Particle PM10 at Brisbane CBD, 1–31 July 2021 [about Particle PM10](#)

[Brisbane CBD station overview](#)

The guideline for Particle PM<sub>10</sub> is 120µg/m<sup>3</sup> (1hr avg) and 50µg/m<sup>3</sup> (24hr avg).

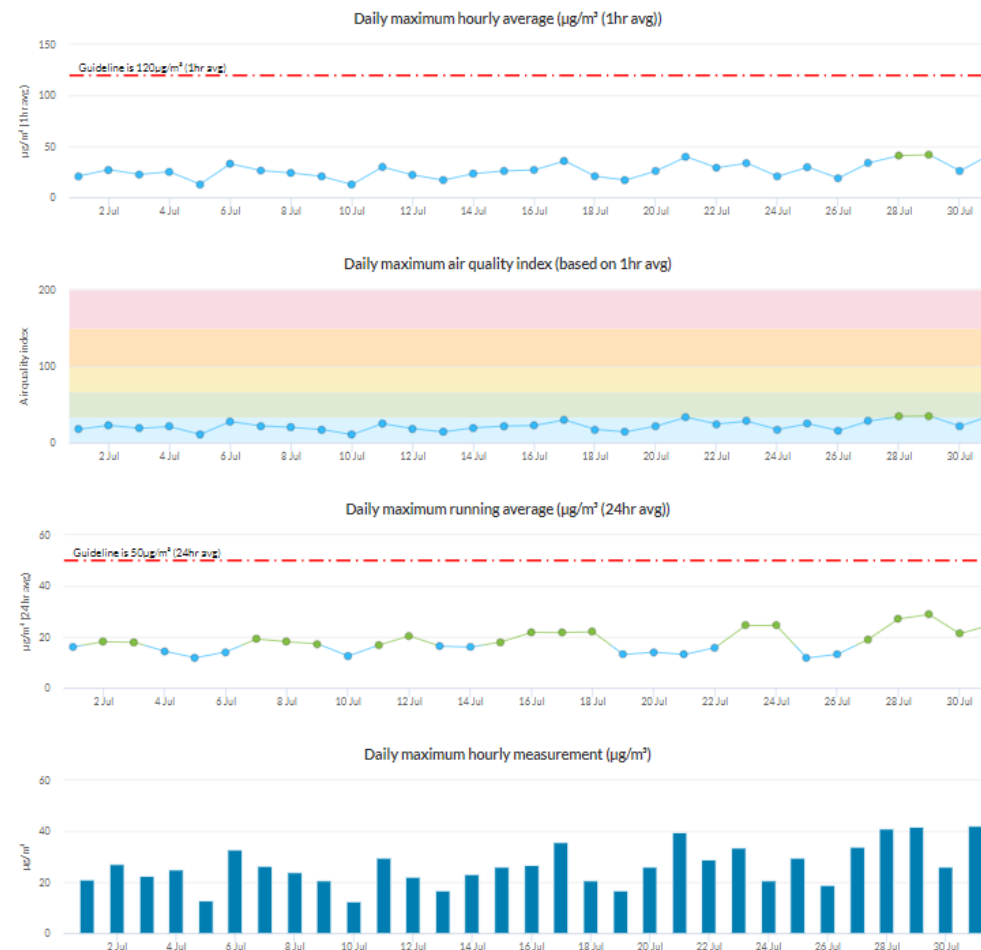


Figure 1: Brisbane CBD – DES Station - PM10 graph for July 2021 (reproduction from the DES website).



# Particle PM<sub>10</sub> at South Brisbane, 1–31 July 2021 [about Particle PM<sub>10</sub>](#)

[South Brisbane station overview](#)

The guideline for Particle PM<sub>10</sub> is 120µg/m<sup>3</sup> (1hr avg) and 50µg/m<sup>3</sup> (24hr avg).

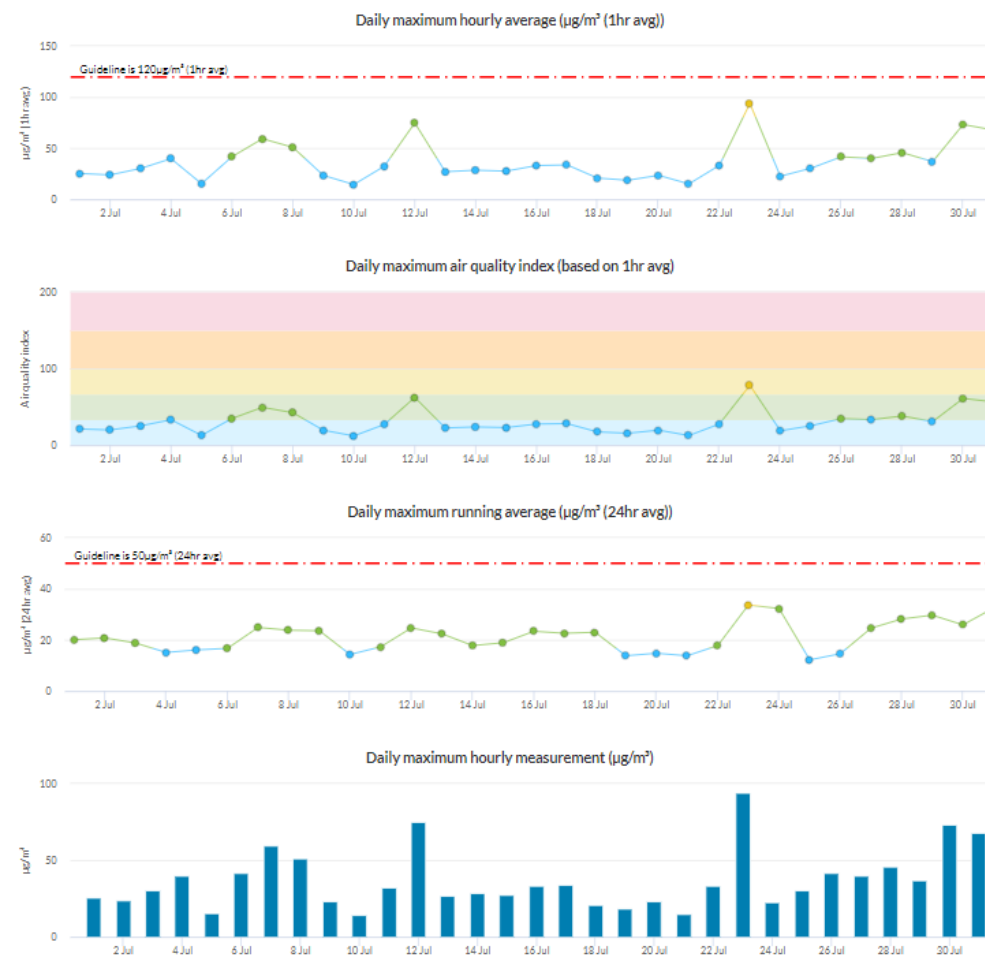


Figure 2: South Brisbane – DES Station - PM<sub>10</sub> graph for July 2021 (reproduction from the DES website accessed).

### Particle PM10 at Woolloongabba, 1–31 July 2021 [about Particle PM10](#)

[Woolloongabba station overview](#)

The guideline for Particle PM<sub>10</sub> is 120µg/m<sup>3</sup> (1hr avg) and 50µg/m<sup>3</sup> (24hr avg).

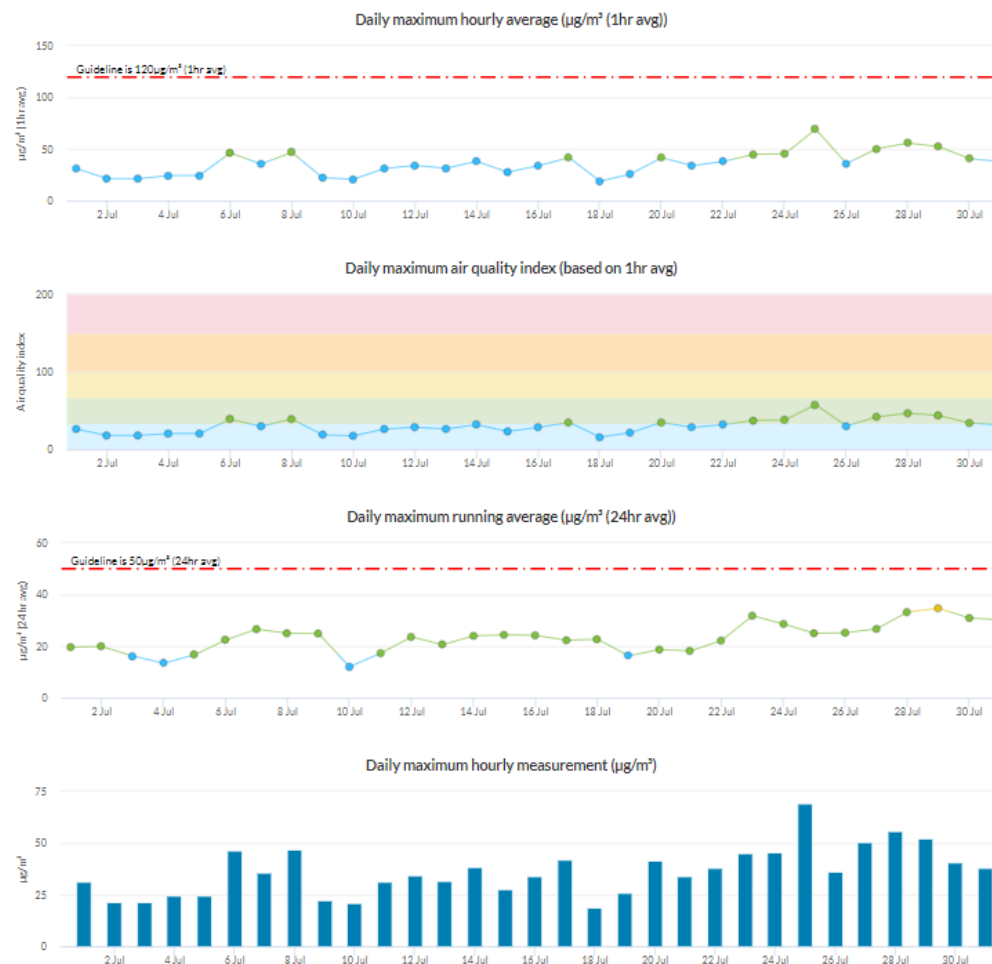


Figure 3: Woolloongabba – DES Station - PM10 graph for July 2021 (reproduction from the DES website).

### 3.4 Water Quality – Discharge

CBGU undertook nine (9) water quality monitoring events prior to the release (groundwater and surface water) from the site during July 2021. One (1) sample was taken at the end of June but relates the July reporting period.

#### 3.4.1 Groundwater Discharge

Water quality monitoring data is provided in the table below.

Table 6: Groundwater Discharge – Water Quality Monitoring Data

Location	Date	Testing of Water Quality Objectives <sup>[1]</sup>											Adhered to Project Requirements (Yes / No)
		pH	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia N (µg/L) <sup>[3]</sup>	Oxidised N (µg/L) <sup>[3]</sup>	Organic N (µg/L) <sup>[3]</sup>	Total nitrogen (µg/L) <sup>[3]</sup>	Total phosphorus (µg/L)	Filterable Reactive phosphorus (FRP) (µg/L)	Chlorophyll a (µg/L)	Dissolved oxygen (%) <sup>[2]</sup>	
Albert Street	30/06/2021	7.40	5.00	1.00	11,800.00	39,700.00	7,800.00	59,300.00	20.00	<10	<1	90.77	Yes
Woolloongabba	1/07/2021	8.10	<5	1.40	440.00	150.00	2,000.00	2,600.00	120.00	<10	<1	79.88	Yes
Boggo Road	5/07/2021	7.00	21.00	5.30	540.00	280.00	1,400.00	2,200.00	160.00	<10	<2	125.87	Yes
Roma Street	13/07/2021	7.56	<5	0.30	3210.00	15500.00	2700.00	21300.00	60.00	<10	<1	108.93	Yes

- [1] 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.
- [2] 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.
- [3] Adhered to project requirements regarding aiming to achieve the water quality objective. These samples identified results generally consistent with pre-construction conditions, and no external influences were introduced by construction activity.
- Note: testing of EPP (Water) Quality Objectives are analysed at a NATA accredited laboratory each month (results provided above). Field testing (turbidity, pH) is done regularly during ongoing discharge.

### 3.4.2 Ponded/Surface Water Discharge

Surface water quality monitoring data is provided in the table below.

Table 7: Surface Water Discharge - Water Quality Monitoring Data

No.	Location	Date	Testing of Water Quality Objectives <sup>[1]</sup>		Adhered to Project Requirements (Yes / No)
			pH	Turbidity (NTU)	
1.	Boggo Road	1/07/2021	7.00	0.20	Yes
2.	Boggo Road	5/07/2021	7.46	2.81	Yes
3.	Southern Portal	5/07/2021	7.71	3.65	Yes
4.	Boggo Road	8/07/2021	7.67	2.46	Yes
5.	Boggo Road	21/07/2021	8.04	2.81	Yes

- [1] The Project's discharge procedure is designed to minimise environmental impact and aim to achieve the water quality objectives. All discharges were compliant with *Guidelines for Best Practice Erosion and Sediment Control (IECA, 2008)* and the *Department of Transport and Main Roads' Technical Standard MRTS 52 – Erosion and Sediment Control*.

### 3.5 Water Quality – Surface Water

During July 2021, CBGU JV undertook one (1) rounds of surface water sampling at five (5) locations (upstream and downstream).

Results from the below-monitoring locations reflect the condition of the broader catchment (not just the influence of the Project). Water quality generally appears good, and water discharge from the Project would not have had an impact on the catchment considering the results provided within section 3.4 above.

*Table 8: Offsite Upstream & Downstream Water Quality Data*

Location	Upstream / Downstream	Date	Purpose of Monitoring	Turbidity (NTU)	EC (µS/cm)	Dissolved oxygen (%)	pH
Gabba	Upstream	13/07/2021	Monthly	29.7	31400	106.51	8.01
Gabba	Downstream	13/07/2021	Monthly	31.7	32000	101.67	7.88
Boggo Road	Downstream	13/07/2021	Monthly	6.61	13200	53.25	7.87
Roma Street	Upstream	13/07/2021	Monthly	36.5	28300	102.88	7.89
Roma Street	Downstream	13/07/2021	Monthly	38.8	28300	104.89	7.81
Albert Street	Upstream	14/07/2021	Monthly	24.7	37400	107.72	7.56
Albert Street	Downstream	14/07/2021	Monthly	25.9	37600	105.3	7.54
Northern Portal	Upstream	20/07/2021	Monthly	0.1	522	58.09	7.42
Northern Portal	Downstream	20/07/2021	Monthly	0.1	508	89.56	7.4

- [1] 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 9: 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
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Nil for this reporting period

## 5 Complaints

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

During July 2021, twenty-nine (29) complaints relating to the Project were received as detailed in Table 10 below.

Table 10: Summary of Complaints

No.	Date	Location	Description of Issue	Responses	Status of Event
1.	1 July 21	(Tunnel Alignment)	Noise and vibration	A stakeholder contacted the Project regarding noise and vibration from the tunnel alignment. CBGU provided the stakeholder with an overview of the works occurring and their duration along the tunnel alignment. CBGU monitoring and confirmed works adhered to project noise and vibration requirements. The works were also undertaken consistent with community notifications.	Closed
2.	1 July 21	(Tunnel Alignment)	Noise	A stakeholder contacted the Project regarding noise from the tunnel alignment. CBGU provided the stakeholder with an overview of the works occurring and their duration along the tunnel alignment. CBGU monitoring and confirmed works adhered to project noise requirements. The works were also undertaken consistent with community notifications.	Closed
3.	3 July 21	Peter Doherty Street (Boggo Road Precinct)	Traffic Management	A stakeholder contacted the Project regarding heavy vehicles idling on Peter Doherty Street.	Closed



No.	Date	Location	Description of Issue	Responses	Status of Event
				CBGU reviewed the circumstances and reminded sub-contractors of site expectations.	
4.	3 July 21	(Tunnel Alignment)	Noise	A stakeholder contacted the Project regarding noise from the tunnel alignment. CBGU provided the stakeholder with an overview of the works occurring and their duration along the tunnel alignment. CBGU monitoring and confirmed works adhered to project noise requirements. The works were also undertaken consistent with community notifications.	Closed
5.	5 July 21	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.	Closed
6.	5 July 21	(Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.	Closed
7.	6 July 21	Roma Street (Roma Street Precinct)	Workforce Behaviour	A stakeholder contacted the Project regarding people smoking on the footpath on Roma Street. CBGU informed the workforce via a toolbox talk about approved smoking locations.	Closed
8.	6 July 21	(Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.	Closed
9.	7 July 21	(Roma Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Roma Street precinct.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
				<p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Roma Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	
10.	8 July 21	Albert Street (Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
11.	8 July 21	Albert Street (Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
12.	8 July 21	Albert Street (Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
13.	8 July 21	Mary Street (Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p>	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
				<p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	
14.	8 July 21	Albert Street (Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
15.	12 Jul 21	Roma Street (Roma Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Roma Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Roma Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
16.	13 July 21	Albert Street (Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
17.	14 July 21	(Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
				<p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	
18.	14 Jul 21	(Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
19.	14 Jul 21	(Tunnel Alignment)	Noise and vibration	<p>A stakeholder contacted the Project regarding noise and vibration from the tunnel alignment.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration along the tunnel alignment. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise and vibration requirements and the works undertaken were consistent with the community notification.</p>	Closed
20.	16 Jul 21	Roma Street (Roma Street Precinct)	Pedestrian and Cyclist Management	<p>A stakeholder contacted the Project regarding a potential pedestrian and cyclist hazard.</p> <p>CBGU reviewed the circumstances and installed additional control measures to manage the hazard. The stakeholder thanked the Project for acting so promptly.</p>	Closed
21.	17 Jul 21	(Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
22.	19 Jul 21	Quarry Street (Boggo Road Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Boggo Road precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Boggo Road precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
23.	22 Jul 21	Merton Road (Boggo Road Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Boggo Road precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Boggo Road precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
24.	22 Jul 21	Gregory Terrace (Northern Portal)	Noise	<p>A stakeholder contacted the Project regarding noise from the Northern Portal worksite.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Northern Portal worksite. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
25.	25 Jul 21	Railway Terrace (Southern Portal)	Noise	<p>A stakeholder contacted the Project regarding noise from the Southern Portal worksite.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Southern Portal worksite. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
26.	26 July 21	North Quay (Roma Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Roma Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Roma Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
27.	26 Jul 21	Peter Doherty Street (Boggo Road Precinct)	Traffic Management	<p>A stakeholder contacted the Project regarding heavy vehicles idling on Peter Doherty Street.</p> <p>CBGU reviewed the circumstances and reminded sub-contractors of site expectations.</p>	Closed
28.	27 Jul 21	Herschel Street (Roma Street Precinct)	Construction Hours	<p>A stakeholder contacted the Project regarding noise from the Roma Street precinct.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and their duration at the Roma Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements and the works undertaken were consistent with the community notification.</p>	Closed
29.	27 Jul 21	Gregory Terrace (Northern Portal)	Construction Hours	<p>A stakeholder contacted the Project regarding the approved construction hours.</p> <p>CBGU provided the stakeholder with an overview of the works occurring and approved working hours.</p> <p>Works were being undertaken consistent with community notifications.</p>	Closed