

Cross River Rail Project

Monthly Environmental Report

November 2019



Executive Summary

This monthly report has been produced for Project Works undertaken on site for November 2019 for Rail, Integration and Systems (RIS), and Tunnel, Stations and Development (TSD) packages. This monthly report addresses the obligations outlined in the Coordinator-General's change report – condition change (hours of works) 2019 (CGCR, October 2019) and the Project's Outline Environmental Management Plan.

The Construction Environmental Management Plans for Relevant Project Works being delivered by both Unity Alliance (RIS Contractor) and CBGU JV (TSD Contractor) were endorsed by the Environmental Monitor on 23 August 2019 and submitted to the Coordinator General in accordance with Condition 4 (a) and 4 (b) respectively.

The following Project Works were completed in November 2019 –

Mayne Area -

- Continued Rail Enabling Works; and
- Continued Geotechnical, Contaminated land and Acid Sulphate Soils Investigations.

Northern Area -

- Continued Geotechnical, Contaminated land and Acid Sulphate Soils Investigations.

Central Area -

- Site establishment and clearance, including vegetation removal, fencing and utility works;
- Continued geotechnical works and soil and contaminated land investigations
- Internal soft strip and demolition of buildings
- Piling preparation and piling across the sites

Southern Area -

- Geotechnical, Contaminated land and Acid Sulphate Soils Investigations.

Key applicable environmental elements

Hours of Work – Intrusive site investigation works at Yeronga Station car park occurred outside of approved hours of work resulting in a non-compliance event against CGCR conditions. These works were initially planned to occur during standard hours, however the planned sequence of works was changed at the last minute due to existing services which prevented drilling of previous borehole.

Noise – No noise monitoring was conducted for intrusive site investigation works at Yeronga Station car park that occurred outside hours of work resulting in a complaint and non-compliance event against CGCR conditions. Noise monitoring was carried out at Albert Street and Roma Street station sites, this is presented in **Appendix C (TSD Noise monitoring)**.

Air Quality – Visual air quality monitoring was undertaken in November due to the predicted low impact nature of the construction works in the Northern, Mayne and Southern Areas and the works were deemed compliant. Although complaints were received, the air quality for the Brisbane area (and the wider SEQ) has been impacted by poor conditions due to recent bushfires. This is demonstrated by the Transurban Queensland and Department of Environment and Science monitoring station results (**S4.2.4, Appendix B**).

Compliance

One (1) non-compliance event was recorded during the month. The event report was submitted to the Office of Coordinator General on 28 November, made available on the CRR website and is provided in **Appendix D**.

A compliance table against each condition is presented in **Section 3** of the report.

Complaints:

- Three noise complaints were received for Albert St activities - none resulted in a non-compliance event;
- Two dust complaints relating to Woolloongabba site activities – neither resulted in a non-compliance event; and
- One noise complaint was received for construction works at Yeronga Station car park – this complaint resulted in a non-compliance event.

The key planned Project Works for the coming months include:

Mayne Area –

- Continued Rail Enabling Works; and
- Continued environmental monitoring and site investigations to inform design.

Northern Area -

- Site establishment at Herston Avenue and RNA Showgrounds;
- Access road at Victoria Park;
- Continued environmental monitoring and site investigations to inform design; and
- Demolition of QR Bogie Shed, BTS Building and QR Storage Shed.

Central Area -

- Roma Street - continued site establishment and site preparation, demolition work on going and shaft excavation preparation and commencement in early 2020, following acoustic shed erection;
- Albert Street – continued site preparation, geotechnical work and building removal and piling preparation, Demolition of Lot 2, and site preparation for piling pad and acoustic shed;
- Woolloongabba – site establishment and piling pad preparation with continued piling to prepare for shaft decline excavation from early 2020; and
- Boggo Road - site clearance activities site office set up preparations.

Southern Area -

- Continued environmental monitoring and site investigations to inform design.

Monthly Reporting

The Delivery Authority identified deficiencies in the October report from CBGU JV, A revised version of this report has been received, although this is still missing key information, the additional data is provided within.

The Delivery Authority has identified deficiencies in the November report from CBGU JV – a revised version has been received, although this is still missing key information. The Environment Monitor endorsement letter in **Appendix A**, confirms this. In response the Delivery Authority has requested additional information to demonstrate compliance with the imposed conditions and requirements under the CGCR Condition 6 (Reporting). This information will be provided to the Office of Coordinator General in next month's report.

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1. Definitions

Table 1: 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(s)	The Project's Construction Environmental Management Plan
CG	Coordinator-General
CGCR	Coordinator-General's Change Report
CGER	Coordinator-General's Evaluation Report
Community Relations Monitor	The Community Relations Monitor engaged in accordance with Imposed Condition 8
Contractor	The Contractors appointed to design, construct and commission the Project
Coordinator-General	The corporation sole preserved, continued and constituted under section 8 of the SDPWO Act
CRR	Cross River Rail
EIS	Environmental Impact Statement
EMP	Environmental Management Plan (refers to the OEMP, CEMP, COEMP including any Project sub-plans)
Environmental Monitor	The Environmental Monitor engaged in accordance with Imposed Condition 7
ETCS	European Train Control Systems
Imposed condition/s	A condition/s imposed by the Coordinator-General under section 54B of the SDPWO Act for the Project
MRTS52	Transport and Main Roads Specifications MRTS52 Erosion and Sediment Control
NCE	Non-Compliance Event
OEMP	The Project's Outline Environmental Management Plan
Project	The Cross River Rail Project
Project Works	As defined in the Imposed Conditions
Proponent	The Cross River Rail Delivery Authority
QR	Queensland Rail
RfPC	Requests 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 to an EMP
The Authority	The Cross River Rail Delivery Authority
TSD	Tunnel, Stations and Development

2. Introduction

2.1 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 EIS was evaluated by the Coordinator-General who recommended the Project proceed, subject to Imposed Conditions and recommendations. Since the evaluation of the EIS, five Requests for Project Change (RfPCs) have been evaluated by the Coordinator-General. The CRR Project, as currently evaluated by the Coordinator-General, including the RfPCs, is referred to as the Evaluated Project.

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

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

2.2 Project Delivery

The Delivery Authority is responsible for planning and delivering the Project.

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 Delivery Authority has appointed separate Contractors to deliver TSD and RIS packages. CBGU JV is delivering TSD package while RIS package is being delivered by the Unity Alliance.

The Project is geographically divided into four areas as identified in **Figures 1 and 2** –

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

During initial Project Delivery phase, the Project has established environmental management plans and secured some of the secondary environmental approvals in addition to enabling works.

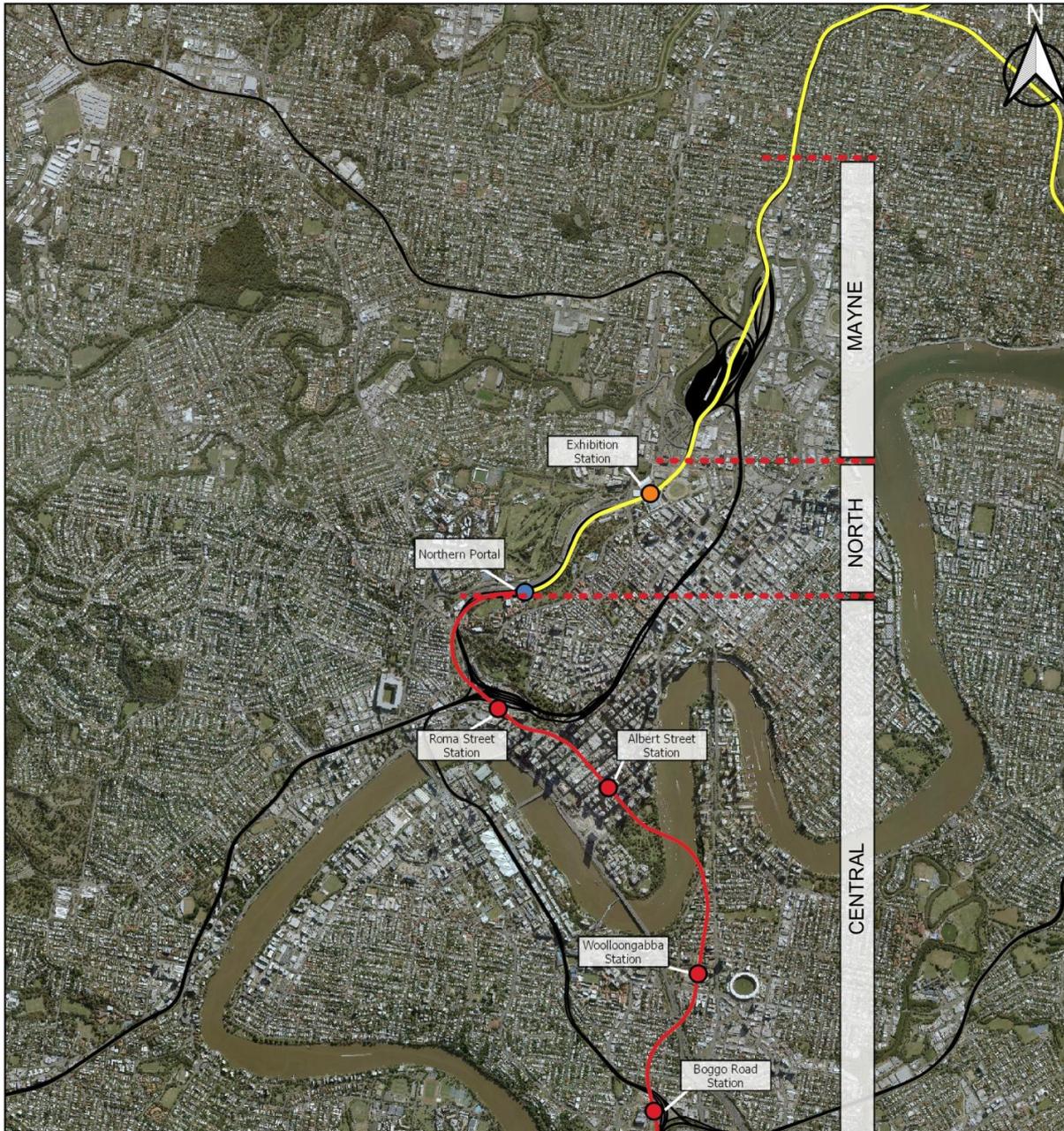


Figure 1 : Project Geographical Areas - North

Legend

- | | | |
|--|--|--|
|  Above Ground Alignment |  Above Ground Station |  Tunnel Portal |
|  Tunnel Alignment |  Underground Station |  Existing Railway Network |

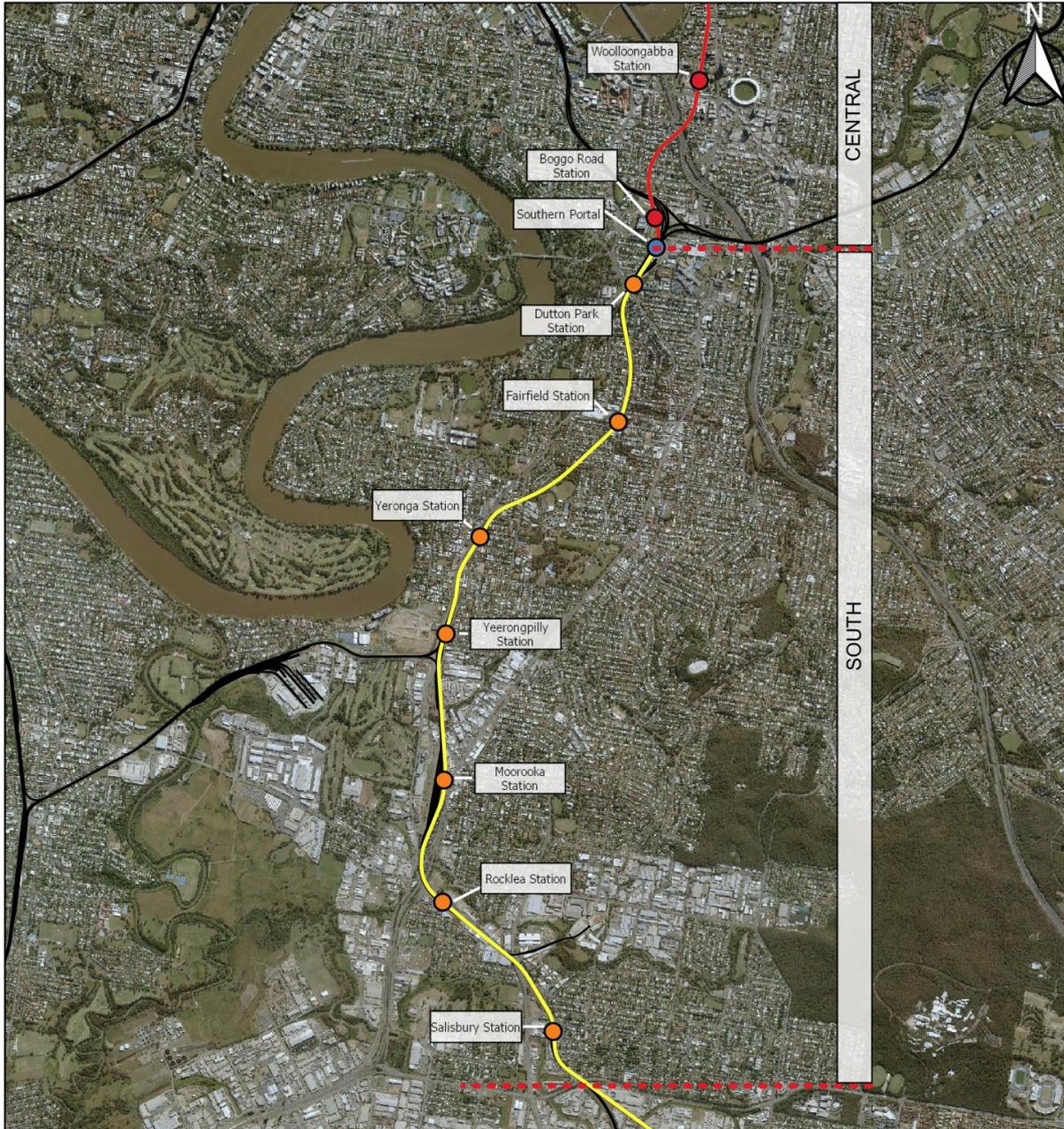


Figure 2: Project Geographical Areas - South

Legend

- Above Ground Alignment ● Above Ground Station ● Tunnel Portal
- - - Tunnel Alignment ● Underground Station — Existing Railway Network

2.3 Reporting Framework

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

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

Reporting on environmental elements will be captured in these monthly environmental reports and the annual environmental reports, which will be endorsed by the Environmental Monitor.

The Delivery Authority identified deficiencies in the October report from CBGU JV – a revised version has been received, although this is still missing information. Updates will be included in this and subsequent monthly reports.

The Delivery Authority has identified deficiencies in the November report from CBGU JV. The Environment Monitor endorsement letter in **Appendix A**, confirms this. In response the Delivery Authority has requested additional information to demonstrate compliance with the imposed conditions and requirements under the CGCR Condition 6 (Reporting). This information will be provided to the Office of Coordinator General once received in the next monthly report.

3. Compliance with Imposed Conditions

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

Compliance against Imposed Conditions are provided in **Table 2** below and detail is provided in **Appendices B and C**.

Table 2: Compliance Status – CG Imposed Conditions

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
1.	General conditions – compliance with the Project Changes relevant to the Contractor’s scope	Yes	Ongoing
2.	Outline Environmental Management Plan – timely submittal to the Coordinator General including required sub plans	Yes	No further amendments to the OEMP proposed
3.	Design - achievement of the Environmental Design Requirements	NA	
4.	Construction Environmental Management Plan – all relating to Relevant Project Works	No	RIS – No predictive noise modelling and associated mitigation measures established for site investigation works at Yeronga Station car park. Refer to NCE Report (Attachment 1) in Appendix B . TSD – CEMP Rev 0 endorsed for Site Establishment, Demolition, Investigation Works and Piling
5.	Compliance and Incident management - Non-compliance events, notifications and reporting	No	Noise complaint associated with site investigation works at Yeronga Station car park resulted in one (1) NCE affecting Conditions 4(c)(ii), (v) and (vii), 10(a), and 11(a). Refer to NCE Report (Attachment 1) in Appendix B . NCE Report uploaded on CRR website.
6.	Reporting – Monthly and Annual reporting	No	November Monthly Report provided – more information is requested from TSD contractors (<i>currently under investigation</i>)
7.	Environmental Monitor - engaged and functions resumed	Yes	Ongoing
8.	Community Relations Monitor - engaged and functions resumed	Yes	Ongoing
9.	Community engagement plan - developed and endorsed by Environmental Monitor	Yes	CEMPs endorsed with Community Engagement Plan
10.	Hours of work – works undertaken during approved hours	No	RIS - The intrusive site investigation works at Yeronga Station car park occurred outside of approved hours of work. Refer to NCE Report (Attachment 1) in Appendix B .
11.	Noise – Work must aim to achieve internal noise goals for human health and well-being	No	RIS – No noise monitoring was conducted for intrusive site investigation works at Yeronga Station car park. Refer to NCE Report (Attachment 1) in Appendix B .

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			Appendix C includes noise monitoring undertaken by the TSD contractor.
	Vibration - Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	RIS - No monitoring required for the works as identified in the vibration assessment TSD – some vibration monitoring has been undertaken and is included in Appendix C
12.	Property damage relating to ground movement	Yes	No specific management plan required due to low risk construction works
13.	Air quality - Works must aim to achieve air quality goals for human health and nuisance.	Yes	Refer to Appendix B and APPENDIX C
14.	Traffic and transport - Works must minimise adverse impacts on road safety and traffic flow.	Yes	TSD - Traffic Management Plan covered in CEMP
15.	Water quality - Works must not discharge surface water and groundwater from the construction site above the relevant environmental values and water quality objectives.	Yes	RIS – No monitoring required for the works based on water quality risk assessment
16.	Water resources – evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown	NA	
17.	Surface water - Must be designed to avoid inundation from stormwater due to a 2-year (6hr) ARI rainfall event and flood waters due to a 5-year ARI rainfall event and constructed to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.	NA	
18.	Erosion and sediment control - Provisions for erosion and sediment control must be consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS52.	Yes	TSD - CEMP covers Erosion and Sedimentation Control Plan RIS – Not applicable for Relevant Project Works
19.	Acid sulphate soils managed as per the <i>Queensland Acid Sulphate Soil Technical Manual</i> .	Yes	TSD - CEMP covers Acid Sulphate Soils Management Plan RIS – Not applicable for Relevant Project Works
20.	Landscape and open space – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria park	Yes	RIS - Access Road works have been designed to minimise impacts on local vegetation. Works proposed to commence in December.
21.	Worksite rehabilitation – worksites rehabilitated as soon as	NA	

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
	practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.		

Total Non-Compliance Events Reports:

The total number of Non-Compliance Events which affected imposed conditions in November was one (1), as described above against Condition 5 Compliance and Incident Management.

Appendix A – Environmental Monitor Endorsement Letter

Appendix B – RIS Monthly Report

Monthly CGCR Report – November 2019

Cross River Rail – Rail, Integration and Systems Alliance

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1 Progress Summary

1.1 Summary of Works

The following *Project Works* continued in November 2019

- Rail Enabling Works B in Mayne Yard
- Geotechnical, Contaminated land and Acid Sulphate Soils along the corridor length

1.2 Progress Photos

There are no progress photos for the reporting period

2 Non-Compliance Events

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

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

2.1 Non- Compliance Events Summary

One Coordinator General Conditions Report (CGCR) non-compliance event occurred on 9 November 2019. A summary of the event is provided below.

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
Social media feedback regarding noise associated with the following Project Works: Intrusive Site Investigations at Lake Street, Yeronga	Yeronga Station – Lake Street Saturday 9 November 2019 – 3.40am	Thursday 14 November 2019 (Within 48 hours of confirming non-compliance)	4(c)(ii) 4(c) (v) & (vii) 10(a) 11(a)	Thursday 28 November 2019 (within 14 days of the Notification)	Closed

The event report will be made available on the Delivery Authority's website.

3 Complaints

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

Section 10 Table 4 – Summary of Complaints and Key Issues

Date	Location	Issue	CGCR Non-Compliance	Status
Sat 9 Nov 2019	Yeronga station	Complaint regarding the use of a wet saw as part of geotechnical investigations through Facebook messenger.	Refer Section 2.1	Closed

4 Environmental Monitoring Results

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

4.1 Acoustics

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

No Attended Noise monitoring was undertaken during the reporting period as no new Relevant Project Works commenced.

Vibration monitoring was not undertaken. No new Relevant Project Works commenced. No complaints triggered the need to undertake vibration monitoring.

4.1.1 Noise monitoring Results

Nil for this reporting period

4.1.2 Interpretation

Nil for this reporting period

4.1.3 Vibration Monitoring Results

Nil for this reporting period as Vibration monitoring has not been triggered

4.1.4 Interpretation

Nil for this reporting period

4.2 Air Quality

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

Visual Monitoring was undertaken during routine environmental inspections. A Total of six (6) inspections were undertaken. No issues were identified that required corrective actions to be raised.

4.2.1 Dust results

Unity Alliance has not yet established passive dust deposition gauges due to the predicted low impact nature of the construction works.

Visual Monitoring was therefore undertaken as part of the weekly inspections.

Water carts were on site, no signs of dust leaving the project boundaries were recorded.

4.2.2 Interpretation

Standard dust mitigation measures (water cart) were effective at managing air quality.

4.2.3 Particulates results

Unity Alliance has not yet established particulates monitoring stations due to the predicted low impact nature of the construction works.

Transurban Queensland operates the Legacy Way tunnel in accordance with conditions established by the Queensland Co-ordinator General.

Transurban has engaged third parties to establish External Ambient Air Quality Monitoring Stations along their footprint. Two of the monitoring stations are located near the Northern Corridor Area, within 1km from where the works occurred.

They are

- East Victoria Park (E1) which is located approximately 300m due north from the northern corridor, and
- Eastern Centenary Pool (E2) which is located approximately 150m due east from the northern corridor.

External Ambient Air Quality data is collected for Carbon monoxide (CO), Nitrogen dioxide (NO₂), Particulate matter less than 10 µm (PM₁₀), and Particulate matter less than 2.5 µm (PM_{2.5}).

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

The same goal has been imposed on the Cross River Rail Project.

Validated air quality data for the Legacy Way tunnel is shown below. The information has been sourced from the Legacy Way website. The data used on this webpage is collected by third parties using equipment which is not controlled by Transurban Queensland and as such may be subject to faults or errors by third parties, external weather or environmental events, or server access issues.

The data has been extracted from the October 2019 report published on the linkt website (<http://brisbanenetwork.linkt.com.au/wp-content/uploads/2019/12/Transurban-QLD-Legacy-Way-Monthly-Report-November-2019.pdf>).

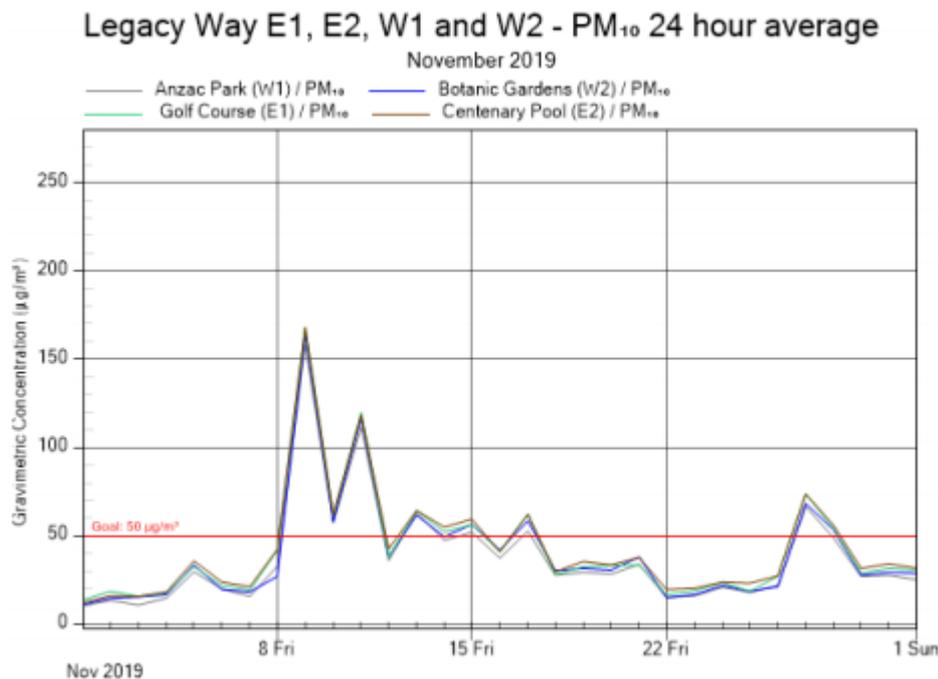


Figure 5: Transurban QLD Legacy Way (E1, E2, W1 and W2) - PM₁₀ graph for November 2019

Figure 1: Transurban QLD Legacy Way (E1, E2, W1 and W2) - PM₁₀ graph for November 2019 (reproduction from the monthly report accessed 16 December 2019)

4.2.4 Interpretation

The following exceedances were recorded for the month of November for PM₁₀ near the northern corridor.

Parameter	Location	Time Period	Value of Exceedance	Date of Exceedance
PM ₁₀ (µg/m ³)	Victoria Park (E1)	24 hours	168	09/11/2019
			62	10/11/2019
			120	11/11/2019
			64	13/11/2019
			52	14/11/2019
			56	15/11/2019
			62	17/11/2019
			74	27/11/2019
			54	28/11/2019
PM ₁₀ (µg/m ³)	Centenary Pool (E2)	24 hours	168	09/11/2019
			62	10/11/2019
			118	11/11/2019
			64	13/11/2019
			55	14/11/2019
			59	15/11/2019
			62	17/11/2019
			74	27/11/2019
			56	28/11/2019

Similar exceedances (scale, readings, duration) were reported on the same day at the West Park Station and the West Botanic Station for PM₁₀.

These two (2) stations are located 5 km south west from the Victoria Park and Centenary Pool stations, and therefore away from the direct influence of Unity's works.

Unity also reviewed the DES air quality results for PM₁₀ from other stations in Brisbane for the 09th of October. The results were as follows:

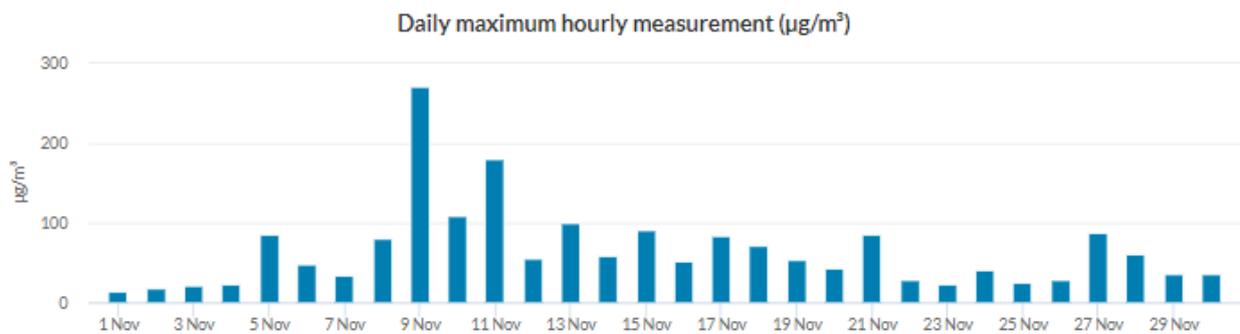
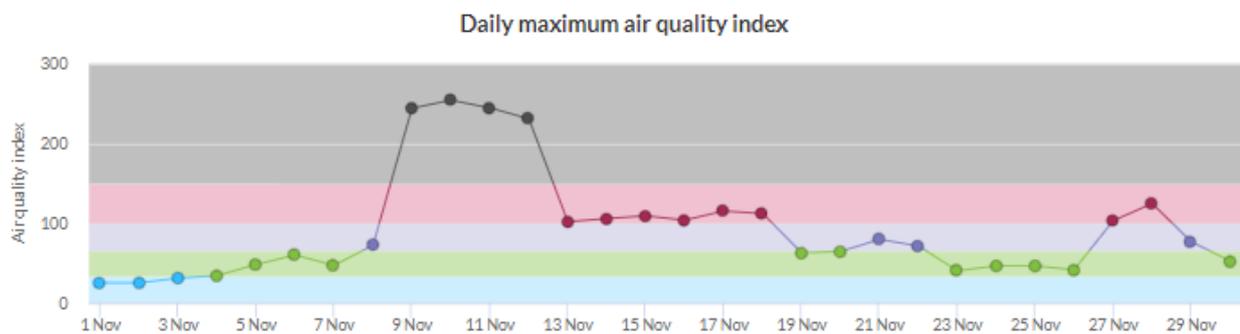
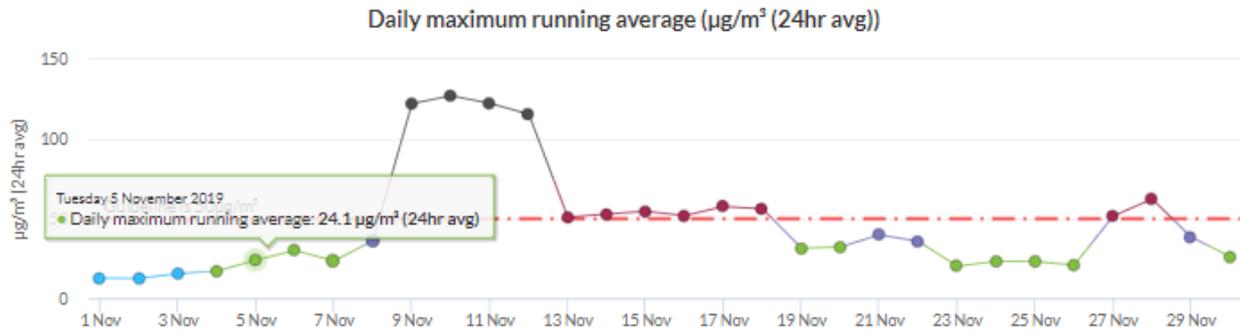
- Brisbane CBD: PM₁₀ daily Maximum average: **127.3 µg/m³** with 12 daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/11/2019&timeframe=month>)
- South Brisbane (Woolloongabba): PM₁₀ daily Maximum average: **172.1 µg/m³** with 12 daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/11/2019&timeframe=month>)

The graphical representation of the DES air quality data is presented in the below charts.

Particle PM10 at Brisbane CBD, 1–30 November 2019 [about Particle PM10](#)

[Brisbane CBD station overview](#)

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



Download this data

None of the data is validated
(0% validated, 0/719 records)

Legend to air quality index colours [about index values](#)

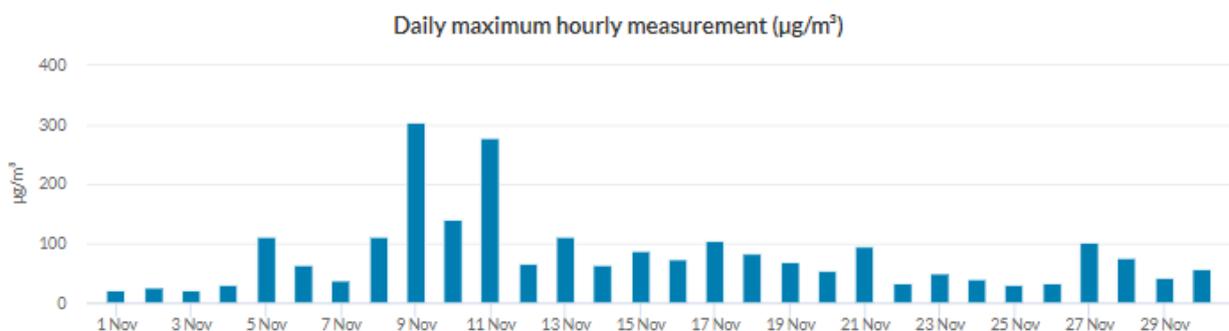
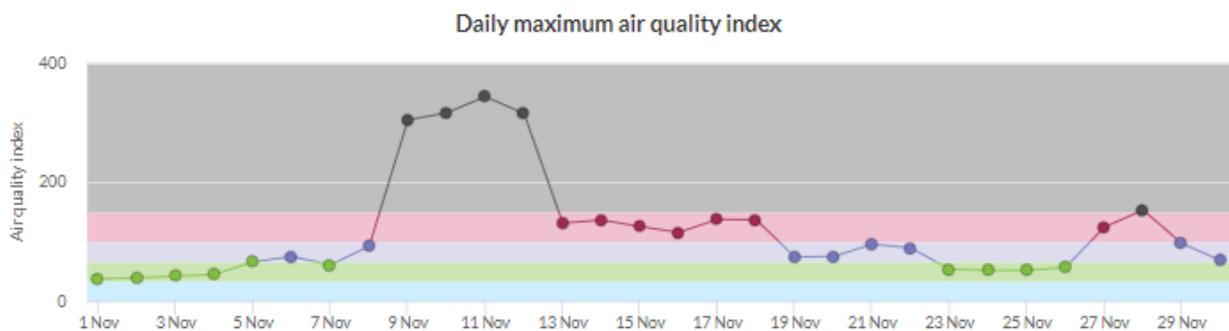
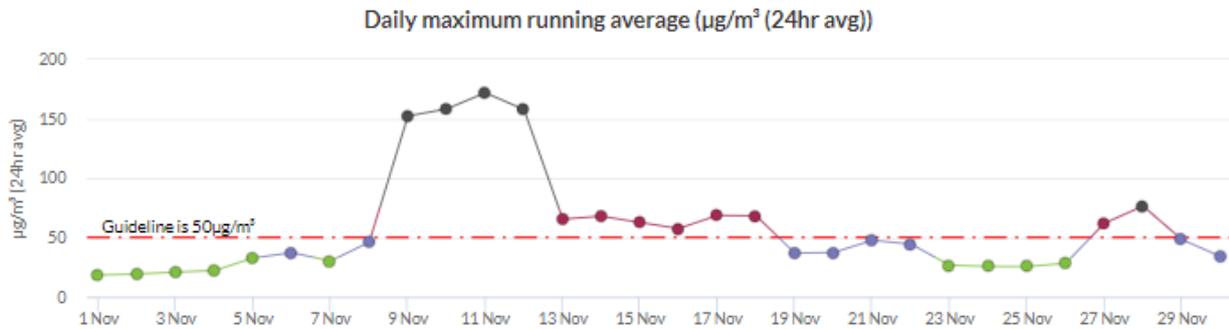
Very good 0-33	Good 34-66	Fair 67-99	Poor 100-149	Very poor >150
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Figure 2: Brisbane CBD – DES Station - PM10 graph for November 2019 (reproduction from the DES website accessed 16 December 2019)

Particle PM10 at Woolloongabba, 1–30 November 2019 [about Particle PM10](#)

[Woolloongabba station overview](#)

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



[Download this data](#)
⚠ None of the data is validated (0% validated, 0/719 records)
ℹ Some data is unavailable for this time period (0%, 1/719 records)

Legend to air quality index colours [about index values](#)

Very good 0-33	Good 34-66	Fair 67-99	Poor 100-149	Very poor >150
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Figure 3: South Brisbane – DES Station - PM10 graph for November 2019 (reproduction from the DES website accessed 16 December 2019)

The consistency of the PM₁₀ goal exceedances (order of magnitude, day, duration) at stations located away from the direct zone of influence from the works confirms that the exceedances of the PM₁₀ air quality goal over a 24hours averaging period is not relating to Unity’s works.

Brisbane had experienced elevated particulate concentration during November due to bush fires which may have had a significant impact on reported particulate concentrations.

Ambient air quality measurements may be influenced by external events outside of Unity's control (e.g. road traffic, dust storms, fires).

4.3 Water Quality – Surface Water

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

Water Quality monitoring was not triggered. There were no discharges from site.

4.3.1 Discharge Monitoring

Nil for this reporting period

4.3.2 Interpretation

Nil for this reporting period

5 Good News Stories

Nil this reporting period

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

Please Refer to the Cross River Rail Delivery Authority Website: <https://crossriverrail.qld.gov.au/planning-environment/>.

Appendix C – TSD Monthly Report (Extracts from Progress Report)

Site establishment and investigation activities were conducted in accordance with the endorsed Construction Environmental Management Plan (CEMP) Rev 0.

CEMP (Rev 1) and sub-plans are being prepared to enable project works beyond site establishment.

Regulatory approvals were received and progressing according to the below schedule.

Table 12 Approvals & Permits Schedule

Approval / Permit / Licence	Regulatory Authority	Responsibility / Timeframe	Items approved	Scheduled Approval
Completed (Last Month)				
Heritage Exemption Certificate #2	DES	Environment and Sustainability Manager 36 BD	Working on a Queensland heritage place (Geotech and utility investigations at Kangaroo Pt Cliffs, Botanical Gardens, Early streets of Brisbane)	2 Dec 2019 (On track – lodged with DES) <i>(Complete 11 Nov 2019)</i>
Archaeological Research Design (Albert St)	DES	Environment and Sustainability Manager 36 BD	Working within an area of high archaeological potential	25 November 2019 <i>(Complete 11 Nov 2019)</i>
Archaeological Research Design (Boggo Rd)		Environment and Sustainability Manager 36 BD	Working within an area of high archaeological potential	27 November 2019 <i>(Complete 20 Nov 2019)</i>
Upcoming				
Heritage Exemption Certificate #3	DES	Environment and Sustainability Manager 36 BD	Working on a Queensland heritage place (General tunnelling beneath heritage places)	20 Mar 2020 (To be prepared)
Soil Disposal Permits (for ongoing works)	DES	Environment and Sustainability Manager 15 BD	Removal of contaminated material from site	TBC – Contamination determined by soil analysis
Waste Levy Exemption	DES	Environment and Sustainability Manager 20 BD	Removal of contaminated material from site	TBC – reliant on soil analysis (above). No exemption required for clean material.

Complaints Summary

Complaints received are summarised below – noting that overall, none of the complaints identified any non-compliance with project obligations:

- 6 November – Albert Street: business concerned with noise and vibration from adjacent demolition. Response provided with one hour and noise monitoring was undertaken
- 7 November – Albert Street: pedestrian complaint re footpath closure on Mary Street. Response provided within one day
- 11 November – Albert Street: two resident complaints about noise from works outside of standard construction hours. Immediate response provided regarding need for safety rectification required after hours; works ceased soon after residents called
- 14 November – resident complaint regarding dust from the Woolloongabba site. Response provided with one day, noted high atmospheric dust being experienced due to dry conditions and bush fires. Dust mitigation explained including reapplication of ground stabiliser the day prior
- 15 November – request from resident for dust to be cleaned from apartment. Dust mitigation measures explained and noted high levels of atmospheric dust being experienced.

November Monthly Report Summary

Monitoring Summary

Vibration monitoring was conducted on 4 occasions during November 2019. Noise Monitoring was conducted on 23 occasions. Ambient air quality monitoring was also performed at each precinct site during November. Each monitoring event (vibration, noise, and air) confirmed the Coordinator General conditions were adhered to. No water quality monitoring was triggered during the period.

Non-Compliances

Nil non-compliances occurred during the monitoring period.

Complaints

Five (5) complaints were received during the reporting period relating to dust and noise. All were investigated and responded to. Nil non-compliances were recorded.

November 2019 Monthly Report

Monitoring Data

Noise & Vibration

Vibration monitoring is detailed in the table below.

Date	Time	Location	Activity	Average Vibration levels	Adhered to Coordinator General Conditions (Yes / No)
11/11/2019 to 13/11/2019	NA	Albert Street	Demolition	0.2 mm/s	Yes
21/11/2019 to 22/11/2019	NA	Albert Street	Demolition	0.1mm/s	Yes
22/11/2019	13:20	Woolloongabba	Site Establishment	0.1 mm/s	Yes
29/11/2019 to 04/12/2019	NA	Boggo Rd Site	Site Establishment	0.1 mm/s	Yes

Noise monitoring is detailed in the table below.

Date	Time	Location	Activity	Noise parameter	Noise level	Adhered to Coordinator General Conditions (Yes / No)
5/11/2019	14:29	Rawnsley Street	Site Establishment	LA10	52.2	Yes
7/11/2019	8:16	Mary Street	Demolition	LA10	65.8	Yes

7/11/2019	8:40	Mary Street	Demolition	LA10	67.7	Yes
8/11/2019	9:00	Joe Baker Street	Site Establishment	LA10	86.7	Yes
11/11/2019	9:45	Joe Baker Street	Site Establishment	LA10	81.7	Yes
11/11/2019	10:15	Joe Baker Street	Site Establishment	LA10	85.2	Yes
11/11/2019	12:15	Joe Baker Street	Site Establishment	LA10	67.8	Yes
12/11/2019	12:09	Esk Lane	Demolition	LA10	80.9	Yes
12/11/2019	12:47	Esk Lane	Demolition	LA10	82.7	Yes
12/11/2019	14:08	Roma Street - Adj Parkland Blvd	Site Establishment / Demolition	LA10	76.6	Yes
13/11/2019	8:05	Peter Doherty Street	Site Establishment	LA10	69.3	Yes
14/11/2019	14:19	Cnr Albert & Mary Street	Demolition	LA10	74	Yes
14/11/2019	15:29	Roma Street - Adj Parkland Blvd	Site Establishment / Demolition	LA10	84.7	Yes
19/11/2019	9:15	Roma Street - Adj Parkland Blvd	Site Establishment	LA10	79.6	Yes
19/11/2019	9:34	George Street	Site Establishment	LA10	72.6	Yes
19/11/2019	10:16	George St	Demolition	LA10	79.8	Yes
22/11/2019	10:05	Peter Doherty Street	Site Establishment	LA10	72.2	Yes
22/11/2019	8:40	Vulture Street	Site Establishment	LA10	72.5	Yes
22/11/2019	9:00	Vulture Street	Site Establishment	LA10	72.3	Yes

22/11/2019	9:55	Mary Street.	Demolition	LA10	71.4	Yes
25/11/2019	15:50	Roma Street - Adj Parkland Blvd	Demolition	LA10	78.2	Yes
27/11/2019	14:58	Albert Street	Demolition	LA10	86.3	Yes
27/11/2019	15:20	Albert Street	Demolition	LA10	73.5	Yes

Air

Air quality monitoring is detailed in the table below.

Location	Monitoring Period	Project Wide Air Quality Criteria & Goals ³				Data Summary
		Criterion	Air Quality Indicator	Goal	Averaging Period	
Roma St Precinct/ Northern Portal	01 Oct 2019 – 31 Oct 2019	Human Health	Total Suspended Particulates (TSP)	90 µg/m ³	1 year	<i>Air quality monitoring was performed during the reporting period. All construction related monitoring events adhered to the requirements of the Coordinator-General Imposed Conditions.</i>
Albert St Precinct			Particulate Matter (PM10)	50 µg/m ³	24 hours	<i>Air quality monitoring was performed during the reporting period. All construction related monitoring events adhered to the requirements of the Coordinator-General Imposed Conditions.</i>
		25 µg/m ³		1 year		
Woolloongabba Precinct		Nuisance	TSP	80 µg/m ³	24 hours	<i>Air quality monitoring was performed during the reporting period. All construction related monitoring events adhered to the requirements of the Coordinator-General Imposed Conditions.</i>
Boggo Rd Precinct/ Southern Portal	Deposited dust		120 mg/m ² /day	30 days	<i>Air quality monitoring was performed during the reporting period. All construction related monitoring events adhered to the requirements of the Coordinator-General Imposed Conditions.</i>	

³ 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.

Water Quality

Water quality monitoring is detailed in the table below.

Location	Monitoring Period	Project Wide Water Quality Objectives ⁴	Data Summary
Roma St Precinct/ Northern Portal	01 Oct 2019 – 31 Oct 2019	Dewatering not exceeding 50mg/L TSS ⁵	<i>Monitoring was not triggered / required during this reporting period.</i>
Albert St Precinct		Turbidity (NTU) less than 10% above receiving waters turbidity	<i>Monitoring was not triggered / required during this reporting period.</i>
Woolloongabba Precinct			<i>Monitoring was not triggered / required during this reporting period.</i>
Boggo Rd Precinct/ Southern Portal		pH between 6.5 – 8.5	<i>Monitoring was not triggered / required during this reporting period.</i>

⁴ Stormwater design objectives for urban development as mentioned within Environmental Protection (Water) Policy 2009 and contained in the “Urban Stormwater Quality Guidelines 2010”.

⁵ A site-specific relationship may be developed between turbidity and suspended solids.

Non-Compliance Event/s

Non-compliance events are detailed in the table below.

Date	Non-compliance
	Nil during reporting period

Complaints

Five (5) complaints were received during the reporting period relating to dust and noise. All were investigated and responded to. Nil non-compliances were recorded.

October Monthly Report Summary

Monitoring Summary

Noise monitoring was conducted on 11 occasions during October 2019. Each noise monitoring event confirmed the Coordinator General conditions were adhered to. No vibration or water quality monitoring was triggered during the period, and at the time of reporting, air quality results remain pending laboratory analysis.

Non-Compliances

Nil non-compliances occurred during the monitoring period.

Complaints

One (1) complaint was received during the reporting period relating to construction noise during standard hours. The complaint was investigated and responded to. Nil non-compliances were recorded.

October 2019 Monthly Report

Monitoring Summary

Noise monitoring was conducted on 11 occasions during October 2019. Each noise monitoring event confirmed the Coordinator General conditions were adhered to. No vibration or water quality monitoring was triggered during the period, and at the time of reporting, air quality results remain pending laboratory analysis.

Monitoring Data

Noise & Vibration

Vibration Monitoring was not triggered / required during this reporting period.

Monitoring Date	Time	Location	Activity	Average Vibration levels	Managed in accordance with Coordinator General Conditions (Yes / No)
NIL	NA	NA	NA	NA	NA

Noise monitoring is detailed in the table below.

Monitoring Date	Time	Location	Activity	Noise Parameter	Average Noise levels (dB)	Managed in accordance with Coordinator General Conditions (Yes / No)
10/10/2019	12:17	Cnr Albert & Mary	Site Establishment	LA10	91.1	Yes

10/10/2019	12:38	Albert St	Site Establishment	LA10	91.7	Yes
14/10/2019	8:59	Roma Street - Adj Parkland Blvd	Site Establishment	LA10	71.5	Yes
16/10/2019	8:30	Albert St	Site Establishment	LA10	75	Yes
18/10/2019	8:26	Albert St	Site Establishment	LA10	95.9	Yes
18/10/2019	8:53	Albert St	Site Establishment	LA10	95.7	Yes
18/10/2019	9:23	Albert Street	Site Establishment	LA10	88.4	Yes
21/10/2019	8:23	Roma Street - Adj Parkland Blvd	Site Establishment	LA10	69.8	Yes
21/10/2019	9:46	Roma Street - Adj Parkland Blvd	Site Establishment	LA10	69.9	Yes
21/10/2019	10:32	Roma Street - Adj Parkland Blvd	Site Establishment	LA10	77.1	Yes
23/10/2019	12:37	Roma Street - Adj Parkland Blvd	Site Establishment	LA10	70.6	Yes

Air

Air quality monitoring is detailed in the table below.

Location	Monitoring Period	Project Wide Air Quality Criteria & Goals ³				Data Summary
		Criterion	Air Quality Indicator	Goal	Averaging Period	
Roma St Precinct/ Northern Portal	01 Oct 2019 – 31 Oct 2019	Human Health	Total Suspended Particulates (TSP)	90 µg/m ³	1 year	<i>Air quality monitoring was performed during the reporting period. The sampling was subject to laboratory analysis at time of reporting.</i>
Albert St Precinct			Particulate Matter (PM ₁₀)	50 µg/m ³	24 hours	
		25 µg/m ³		1 year		
Woolloongabba Precinct		Nuisance	TSP	80 µg/m ³	24 hours	<i>Monitoring was not triggered / required during this reporting period.</i>
Boggo Rd Precinct/ Southern Portal	Deposited dust		120 mg/m ² /day	30 days	<i>Monitoring was not triggered / required during this reporting period.</i>	

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.

Water Quality

Water quality monitoring is detailed in the table below.

Location	Monitoring Period	Project Wide Water Quality Objectives ⁴	Data Summary
Roma St Precinct/ Northern Portal	01 Oct 2019 – 31 Oct 2019	Dewatering not exceeding 50mg/L TSS ⁵	<i>Monitoring was not triggered / required during this reporting period.</i>
Albert St Precinct		Turbidity (NTU) less than 10% above receiving waters turbidity	<i>Monitoring was not triggered / required during this reporting period.</i>
Woolloongabba Precinct		pH between 6.5 – 8.5	<i>Monitoring was not triggered / required during this reporting period.</i>
Boggo Rd Precinct/ Southern Portal			<i>Monitoring was not triggered / required during this reporting period.</i>

⁴ Stormwater design objectives for urban development as mentioned within Environmental Protection (Water) Policy 2009 and contained in the “Urban Stormwater Quality Guidelines 2010”

⁵ A site-specific relationship may be developed between turbidity and suspended solids

Non-Compliance Event/s

Non-compliance events are detailed in the table below.

Date	Non-compliance
	Nil to report during reporting period

Complaints

One (1) complaint was received during the reporting period relating to construction noise during standard hours. All were investigated and responded. Nil non-compliances were recorded.

Appendix D - Non-Compliance Event Reports

Non-compliance Event Report

In accordance with Condition 5 (c) of the Coordinator General Change Report (CGCR) – this event report is to be provided to the Environmental Monitor and the Coordinator-General, within 14 days following the notification of a Non-Compliance Event.

Event Title	Social media feedback regarding noise associated with the following Project Works: Intrusive Site Investigations at Lake Street, Yeronga
Location, Date and time of event	Yeronga Station - Lake Street (Refer to Location Map – Attachment 1) Saturday 09 November 2019 - 3.40 am
Reported by	UNITY Community and Stakeholder Engagement Team
Reported to	Unity Environment and Approvals Manager Monday 11 November 2019 – 6.30 am
Date the Event was a confirmed as a Non-Compliance Event	Tuesday 12 November 2019
Date the Event was formally notified on behalf of the Proponent	Thursday 14 November 2019 (Within 48 hours)
Contact details of designated contact person	1800 010 875 info@crossriverrail.qld.gov.au
Short description of the Event	<ul style="list-style-type: none"> • During Project Works within a road reserve, a site investigation crew has used a concrete / asphalt saw to enable a borehole to be drilled as part of the Project Works. • The noise has resulted in a member of the local community posting on a CRR social media website.

Circumstances in which the non-compliance occurred

Possession Planning and working hours

- Intrusive Site Investigations were planned to occur as part and concurrently with a Rail Possession week end (SCAS) at Yeronga and Fairfield.
- As per Queensland Rail Possession Protocols, a Possession means a *temporary closure or occupation by Queensland Rail of part of the Network (including closure of Track or isolation of any electrical overhead traction system) for the purpose of carrying out Rail Infrastructure Operations, other work or other activities on or in the proximity of the Network.*
- Closure of commuter car parking within the Road Reserve at Yeronga station for the purpose of the Project Works is not deemed to form part of the approved rail possession.
- The Rail Possession was approved by Queensland Rail and publicly notified prior to the Project Works commencing (ref. link: <https://s3-ap-southeast-2.amazonaws.com/cross-river-rail/wp-content/uploads/2019/10/28113749/0007-WN-Site-investigations-between-Fairfield-and-Yeronga-October-2019.pdf>)
- The Project Works at Yeronga station car park therefore were:
 - authorised to proceed during standard hours for surface works under Condition 10 (a), that is Monday to Saturday - 6.30 am to 6.30 pm;
 - authorised to proceed under Other extended works (being in a road reserve), that is Monday to Friday – 6.30 pm to 10.00 pm; and
 - not authorised to proceed under Extended work hours for approved rail possession, that is 80hours continuous work.
- The Project Works at Lake St were initially planned for Saturday mid-morning during the Surface Works – Standard Hours, after a borehole at the Fairfield Rd (west) side of the rail formation was drilled (under an approved rail possession).

Predictive noise modelling and consultation with DAPs

- The noise modelling undertaken for the intrusive scope (site wide) covered the typical process for this specific activity within the rail corridor.
- Saw-cutting is not required in locations within the rail formation therefore was not included in the predictive modelling.
- The location of boreholes at Yeronga Station (east) were required to be moved from rail formation up to edge of Lake St due to access constraints within the corridor at the required location.
- The micro-siting of these boreholes occurred following the predictive noise modelling activities occurred.
- The new locations required saw cutting through asphalt pavement to access the underlying earth formation.
- The Project Team did not undertake further predictive modelling to cater for the re-positioning of those discrete locations.
- These Project Works and the potential impacts had however been notified to the local community a per the works notices published on the Cross River Rail Delivery Website:
 - <https://s3-ap-southeast-2.amazonaws.com/cross-river-rail/wp-content/uploads/2019/09/23032620/0006-WN-Early-works-between-Fairfield-and-Salisbury-September-2019.pdf>
 - https://s3-ap-southeast-2.amazonaws.com/cross-river-rail/wp-content/uploads/2019/10/28113642/2019-10-08-WN-Yeronga-temporary-traffic-changes-NOV-2019_APPROVED.pdf
- In addition to the published notices, letter drop box had occurred up to a few days preceding the Project Works.

Non- Compliance Event Mechanism

- During the Rail Possession, the planned sequence of intrusive site investigations (e.g. Geotechnical drilling) works was changed due to existing service locations adjacent Fairfield Rd, which prevented drilling the borehole at this location.
- The works crew were consequently redirected to the next planned borehole located at Lake Street earlier than originally planned.

Event Title	Social media feedback regarding noise associated with the following Project Works: Intrusive Site Investigations at Lake Street, Yeronga
	<ul style="list-style-type: none"> Works at this location required saw cutting of asphalt pavement through the station carpark pavement to enable vacuum excavation (NDD) for services and subsequent geotechnical investigation drilling to progress. Due to the aforementioned changes, the saw cutting on Lake Street, Yeronga occurred at approximately 4am Saturday 09 November 2019.
Description of Non-Compliance Event	<p>This Event has resulted in Non-Compliances with the following CGCR conditions:</p> <ul style="list-style-type: none"> 4(c)(ii), <ul style="list-style-type: none"> The predicted noise impacts were modelled for the works at these locations, however, the predictive modelling did not incorporate the use of the saw at this location for the prediction of noise impacts, as this was a non-typical borehole location outside of rail formation. The predictive modelling had regards to the planned scale, location and duration of the works, however, the predictive modelling did not have a comprehensive regard to the intensity of the works at this specific location, as it did not consider the added step of saw-cutting. 4(c) (v) and (vii) <ul style="list-style-type: none"> Non-compliance with condition 4(c)(ii) automatically affect compliance with these two sub-conditions in this instance. 10(a) <ul style="list-style-type: none"> Whilst the planned works did not breach condition 10(a), the change of execution sequence resulted in an automatic non-compliance with condition 10(a). 11 (a) → Actual non-compliance is speculative only as we do not have actual noise measurements of the saw cutting at this location. A desktop predictive model undertaken since the event shows: <ul style="list-style-type: none"> a likely predicted exceedance of the upper noise limit (by 1dBA) for night works as defined in Table 2 of the CGCR (Monday to Saturday, 6.30pm to 6.30am, Sundays, Public Holidays), (refer Attachment 2). compliance with the day time upper noise limits¹ (refer Attachment 3), confirming the works were allowed to proceed during Standard Hours on Saturday as initially planned.
Details of any complaints in relation to this incident	<p>A member of the public posted feedback on the Cross-River Rail Facebook Messenger regarding noisy works at night.</p> <p>The stakeholder has not been able to be contacted and they did not contact the community hotline or UNITY Alliance directly.</p>
Root Cause of non-compliance	<p>Change Management:</p> <ul style="list-style-type: none"> the revised work methodology for the Lake St boreholes (the Project Works) should have prompted an updated noise model to be compiled. sawcut works should not have proceeded at 3:40am after work sequence was revised, work should have been delayed until after 6:30am.
Description of environmental effects	<p>Increase of noise levels above background conditions to a level audible by nearby stakeholders.</p>

¹ For the purpose of this report the meaning of Performance Criteria (as per the definition of Managed Words), the Project Team has taken a conservative approach it has been assumed that the lower noise limits (or goals) are the Performance Criteria.

Were the upper noise limits as defined by condition 11(c) to be deemed the Performance Criteria for the purpose of defining whether Project Works are Managed Works, these Project Works may have been deemed Managed Works.

Event Title	Social media feedback regarding noise associated with the following Project Works: Intrusive Site Investigations at Lake Street, Yeronga
Was sampling or monitoring performed in relation to this Event? (If so attach results)	<p>No.</p> <p>As per the endorsed C-EMP and associated endorsed Noise and Vibration Management subplan attended noise monitoring (or buffer distance tests) is:</p> <ul style="list-style-type: none"> • undertaken at the start of an activity for the Relevant Project Works (e.g. Intrusive Investigations). For Intrusive works the Project Team undertook two rounds of monitoring in September and October during standard hours and out of hours (this is reported on in the monthly report); and/or • as a response to a complaint. The Project Team became aware of the event after the event has occurred by which time the possession works were finished. It was therefore not possible to undertake the responsive monitoring. <p>In lieu of the monitoring, retrospective predictive modelling has been undertaken, the findings of which are presented in Attachment 2 & 3.</p>
Actions undertaken to mitigate the environmental effects of this non-compliance	<ul style="list-style-type: none"> • No further saw-cutting undertaken at night at this location.
Proposed actions to prevent a recurrence of the non-compliance event (Include responsibility and timeframes)	<ul style="list-style-type: none"> • Review the remainder of the geotechnical program to identify any potential locations where additional saw cutting may be required. • Re-run predictive modelling including saw cutting at these locations. • Amend works documentation based on the outcomes of the model. • Briefing of frontline staff on out of hours processes. • Development of a Night Shift Checklist. <p>➤ <u>Responsibility</u>: Construction Manager and Environment & Approvals Manager.</p> <p>➤ <u>Timeframes</u>: within 2 weeks of the event occurring.</p>

Attachments

Attachment 1 – Non-Compliance Event Location Map



Legend

Unity Geotech Investigation

- Augerhole
- Augerhole Large
- Borehole
- Inclined Borehole
- CPT
- Testpit

— Rail Corridor Boundary Lines

⊠ Rail Corridor Boundary Areas

□ DCDB

Non-Compliant Event Location

A FOR INFORMATION

Issue	Description	Date	Approved
	Yeronga Station Car Park		

Scale 1: 500

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This map is a user generated static output from EIC Activities Web GIS Viewer and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Status			GIS OUTPUT NOT USED FOR CONSTRUCTION		
Original Size	A3	Drawn			
Coordinate System	MGA94-56	Designed			
Height Datum	AHD	Date Printed	28-Nov-2019		

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Intrusive Works

Yeronga Station Car Park

Attachment 2 – Predictive Modelling – Out of Hours Works

NOISE SCREENING RESULT SHEET: Project Works: Intrusive Site Investigations

Scenario	Time of Works	Closest Receiver Type	Noisiest Equipment	Noise "type"	AS2107 maximum Design Level	AS2107 maximum Design Level Description
Detail	Monday – Saturday 6.30pm to 6.30 am	Residential Dwellings Queenslander Single Glazed windows	Concrete Saw	Intermittent	Not Applicable	Not Applicable

SPL = SWL(point) - 20log (r) - 8 Quick Calculator (user inputs as outlined below)

Noise SWL (dBA)	Distance (m)	SPL (dB(A))	Additional Air Attenuation (dBA)	Additional Attenuation (hoarding, façade...) (dBA)	Predicted Noise level (dBA) Indoors
109	25	73	0	10	63
	User defined			User defined	

Noise Management Levels (NMLs) - Internal

Lower Limit	Upper Limit
42 User defined	62 User defined

Predicted Exceedances of NMLs

Lower Limit	Upper Limit
21	1

Attachment 3 – Predictive Modelling – Standard Working Hours

NOISE SCREENING RESULT SHEET: Project Works: Intrusive Site Investigations

Scenario	Time of Works	Closest Receiver Type	Noisiest Equipment	Noise "type"	AS2107 maximum Design Level	AS2107 maximum Design Level Description
Detail	Monday – Saturday 6.30am to 6.30 pm	Residential Dwellings Queenslander Single Glazed windows	Concrete Saw	Intermittent	40	Residential Building in suburban areas or near minor roads living areas

SPL = SWL(point) - 20log (r) - 8 Quick Calculator (user inputs as outlined below)

Noise SWL (dBA)	Distance (m)	SPL (dB(A))	Additional Air Attenuation (dBA)	Additional Attenuation (hoarding, façade...) (dBA)	Predicted Noise level (dBA) Indoors
109	25	73	0	10	63
	User defined			User defined	

Noise Management Levels (NMLs) - Internal

Lower Limit 50 User defined Upper Limit 70 User defined

Predicted Exceedances of NMLs

Lower Limit 13 Upper Limit Compliant