

Cross River Rail Project

Monthly Environmental Report

October 2019



Executive Summary

This monthly report has been produced for Project Works undertaken on site for October 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 October 2019 –

Mayne Area -

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

Northern Area -

- Continued rail Enabling Works
- Continued Geotechnical, Contaminated land and Acid Sulphate Soils Investigations

Central Area -

- Site establishment and clearance, including vegetation removal, fencing and utility works
- Piling preparation at several sites and piling at Woolloongabba

Key applicable environmental elements

Hours of Work – All Project Works were undertaken under approved hours of work.

Noise – Attended noise monitoring was undertaken for Rail Enabling Works at Mayne Area. No exceedances against Performance Criteria recorded during construction activities.

Air Quality – Visual air quality monitoring was undertaken in October due to the predicted low impact nature of the construction works in the Northern and Mayne Areas.

Compliance

There were no non-compliance events with the Coordinator-General conditions for the month. A compliance table against each condition is presented in **Section 3** of the report.

Two environmental complaints were received for construction works at Albert Street. None of the complaints were identified as non-compliance event against CGCR conditions.

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 and access road;
- 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 (including night time erection of tower crane) and shaft excavation commencement in 2020;
- Albert Street – continued site preparation, geotechnical work and building removal and piling preparation;
- Woolloongabba – site establishment and piling pad preparation with continued piling to prepare for shaft decline excavation from January; and
- Boggo Road - some vegetation removal, site clearance activities and site office set up.

Southern Area -

- Environmental monitoring and site investigations to inform design.

The Delivery Authority has identified deficiencies in the October 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.

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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
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 completed environmental management plans and approvals preparation in addition to enabling works at Normanby area.

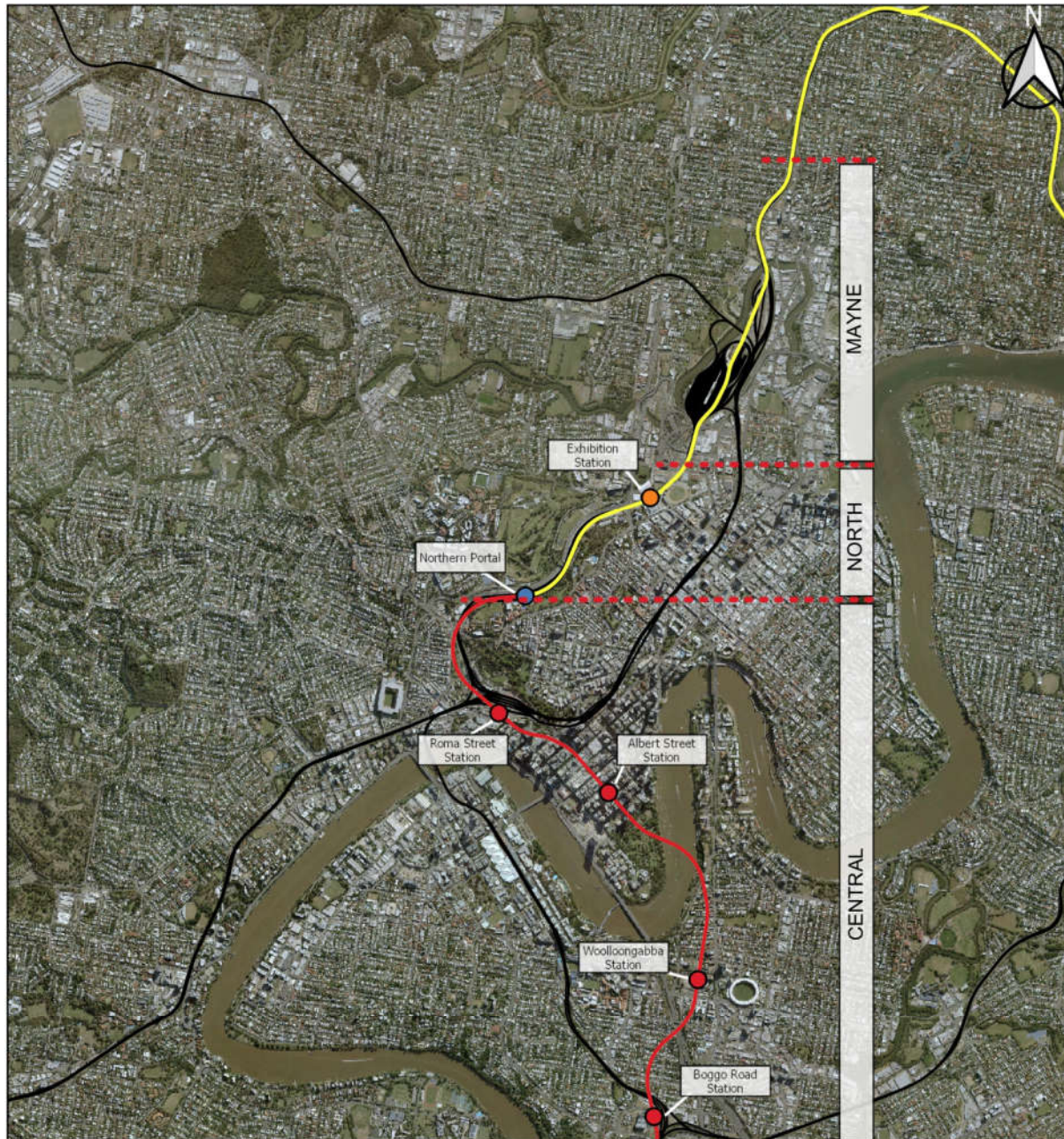


Figure 1 : Project Geographical Areas - North

Legend

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

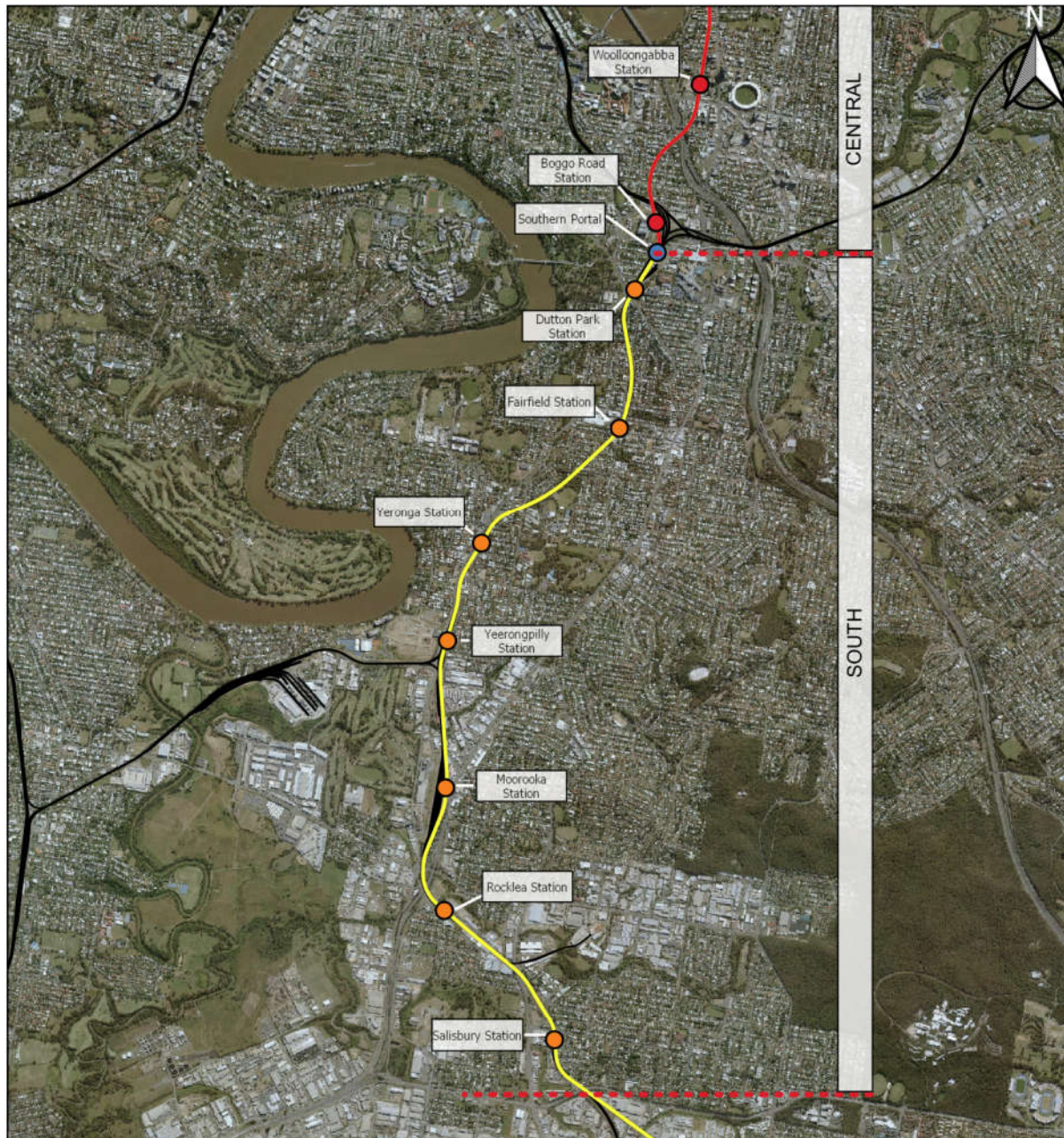


Figure 2: Project Geographical Areas - South

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, 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 has identified deficiencies in the October 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.

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)	No. of CG Non-Compliance Events	Comment
1.	General conditions – compliance with the Project Changes relevant to the Contractor's scope	Yes	0	Ongoing
2.	Outline Environmental Management Plan – timely submittal to the Coordinator General including required sub plans	Yes	0	No further amendments to the OEMP proposed
3.	Design - achievement of the Environmental Design Requirements	NA	0	
4.	Construction Environmental Management Plan – all relating to Relevant work	Yes	0	RIS – CEMP endorsed for Enabling and Advanced Works TSD – CEMP endorsed for Site Establishment, Demolition, Investigation Works and Piling
5.	Compliance and Incident management - Non-compliance events, notifications and reporting	NA	0	
6.	Reporting – Monthly and Annual reporting	Yes	0	October Monthly Report provided
7.	Environmental Monitor - engaged and functions resumed	Yes	0	Ongoing
8.	Community Relations Monitor - engaged and functions resumed	Yes	0	Ongoing
9.	Community engagement plan - developed and endorsed by Environmental Monitor	Yes	0	CEMPs endorsed with Community Engagement Plan
10.	Hours of work – works undertaken during approved hours	Yes	0	Refer to Appendix B
11.	Noise – Work must aim to achieve internal noise goals for human health and well-being	Yes	0	Refer to Appendix B
	Vibration - Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	0	No monitoring required for the works as identified in the vibration assessment
12.	Property damage relating to ground movement	Yes	0	No specific management plan required due to low risk construction works

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	No. of CG Non-Compliance Events	Comment
13.	Air quality - Works must aim to achieve air quality goals for human health and nuisance.	Yes	0	Refer to Appendix B
14.	Traffic and transport - Works must minimise adverse impacts on road safety and traffic flow.	Yes	0	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	0	Refer to Appendix B
16.	Water resources – evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown	NA	0	
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	0	
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	0	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	0	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	0	RIS - Access Road works have been designed to minimise impacts on local vegetation
21.	Worksite rehabilitation – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	NA	0	

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	No. of CG Non-Compliance Events	Comment
	Total number of CG Non-Compliance Events		0	

Appendix A – Environmental Monitor Endorsement Letter

Appendix B – RIS Monthly Report

Monthly CGCR Report – October 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 October 2019

- Rail Enabling Works A in the Normanby Area under a planned possession
- Geotechnical, Contaminated land and Acid Sulphate Soils in the Normanby Area in Spring Hill a

The following *Project Works* commenced in October 2019

- Rail Enabling Works B in Mayne Yard under a planned possession
- Geotechnical, Contaminated land and Acid Sulphate Soils in Mayne Yard

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

Date	Non-Compliance Title	Relevant CGCR Imposed Condition	Location	Further Details
None for this reporting period.				

3 Complaints

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

Nil for this reporting period.

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.

Attended Noise monitoring was undertaken on 06 October 2019 during the second day of the possession works for Rail Enabling Works B.

The attended noise monitoring consisted of monitoring:

- Ambient Conditions during the times where no construction activities were occurring, and
- Construction Noise monitoring at source

Noise monitoring because of complaints was not triggered. No noise complaints occurred during the works.

Vibration monitoring was not undertaken. Neither the predictive model nor complaints triggered the need to undertake vibration monitoring.

4.1.1 Noise monitoring Results



4.1.2 Interpretation

Attended Noise Monitoring validated the predictive model that the Performance Criteria would not be exceeded by the Construction Activities.

Attended Monitoring also confirmed that ambient conditions in the Northern Area around Normanby and Victoria Park are dominated by the rail traffic in Mayne Yard.

4.1.3 Vibration Monitoring Results

Nil for this reporting period

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 the possession works on Saturday 21 September 2019.

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), and
- Eastern Centenary Pool (E2).

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/2019/11/Transurban-QLD-Legacy-Way-Monthly-Report-October-2019.pdf>).

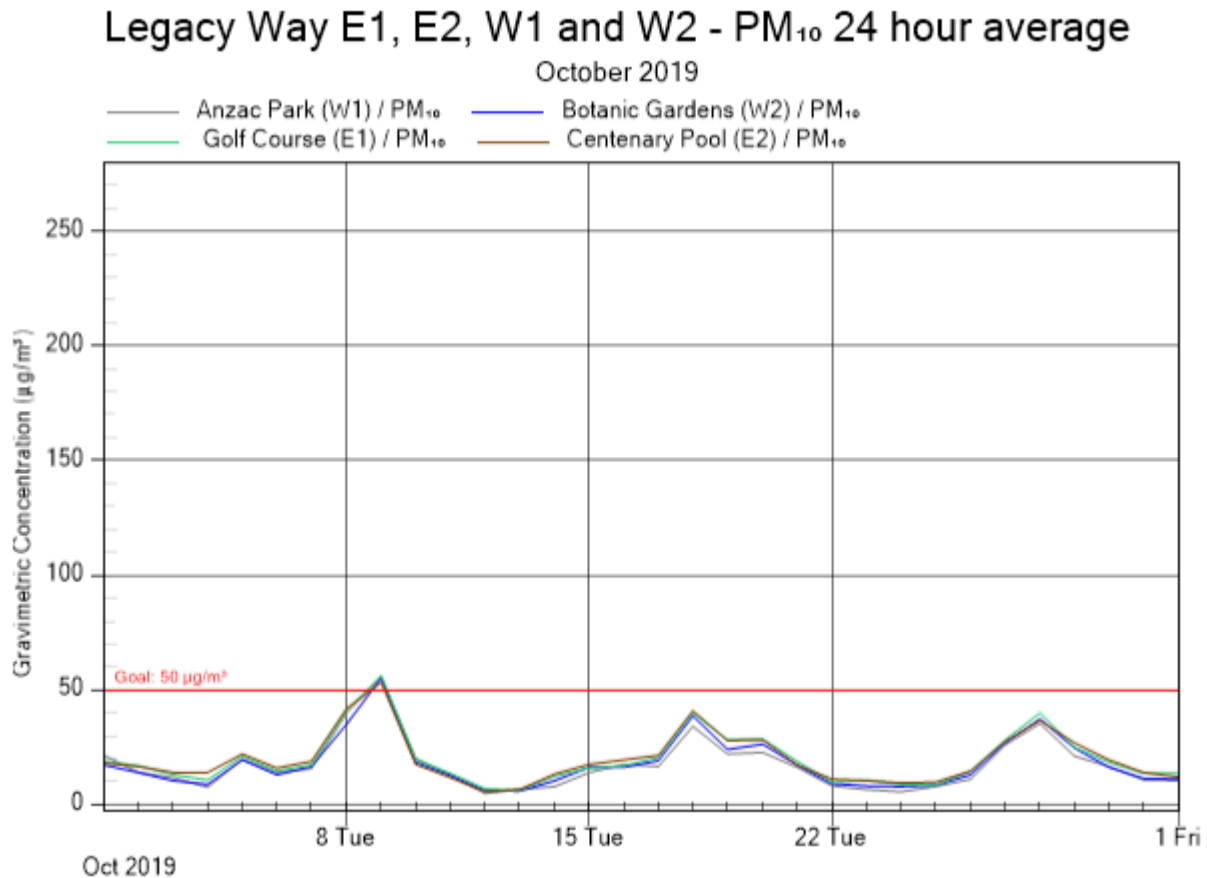


Figure 1: Transurban QLD Legacy Way (E1, E2, W1 and W2) - PM₁₀ graph for October 2019 (reproduction from the monthly report accessed 13 November 2019)

4.2.4 Interpretation

The following exceedance were recorded for the month of October 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	56	Wednesday 09 October 2019
PM ₁₀ (µg/m ³)	Centenary Pool (E2)	24 hours	53	Wednesday 09 October 2019

Similar exceedances were reported on the same day at the West Park Station (**56 µg/m³**) and the West Botanic Station (**55µg/m³**) 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: **47.9 µg/m³**
- South Brisbane (Woolloongabba): PM₁₀ daily Maximum average: **54.6 µg/m³**

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

Particle PM₁₀ at Brisbane CBD, 1–31 October 2019 [about Particle PM₁₀](#)



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

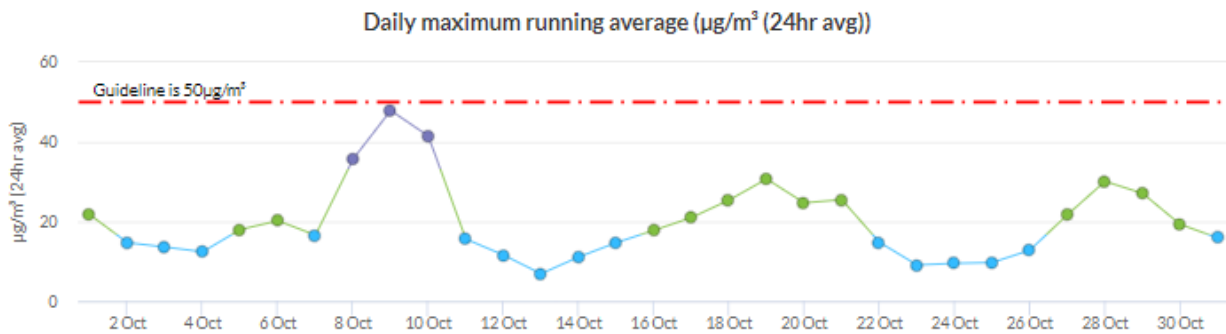
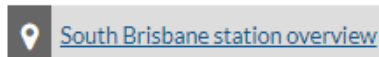


Figure 2: Brisbane CBD – DES Station - PM10 graph for October 2019 (reproduction from the DES website accessed 13 November 2019)

Particle PM₁₀ at South Brisbane, 1–31 October 2019 [about Particle PM₁₀](#)



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

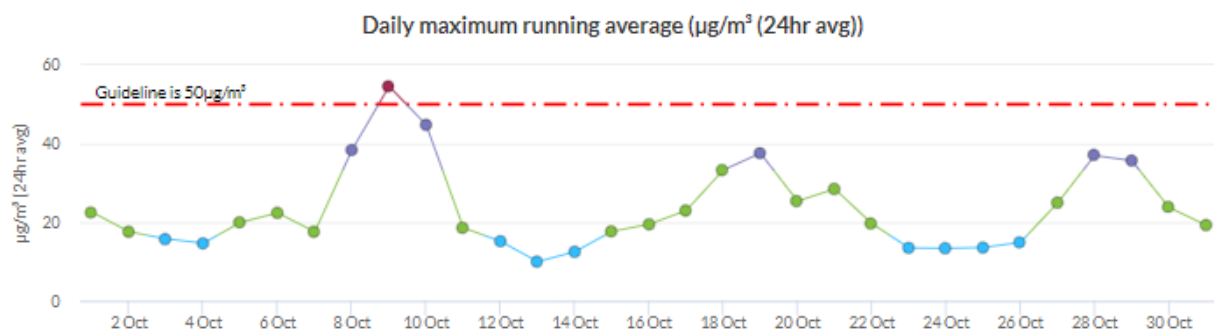


Figure 3: South Brisbane – DES Station - PM10 graph for October 2019 (reproduction from the DES website accessed 13 November 2019)

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.

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

The second possession that occurred in October 2019 at Mayne Yard North was successful with no adverse impact to the community or the environment.

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

Nil for this reporting period

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

There were no Coordinator General non-compliance events recorded for October.

Environmental and Cultural Heritage Management

Site establishment and investigation activities were conducted in accordance with the endorsed Construction Environmental Management Plan (CEMP) Rev 0. The next revision of the CEMP and sub-plans are being prepared to enable project works beyond site establishment.

CBGU JV have provided the following information for the October Coordinator General Monthly Report:

- Soil sampling was completed at the Roma St tunneling site (part of Lot 60) prior to removal of material from site. Unexpected asbestos contaminated material (ACM) was uncovered on 4 Oct 2019. The Project's Unexpected Finds Procedure was administered effectively, CRRDA notified, and the ACM then appropriately disposed of in accordance with a Soil Disposal Permit.
- CBGU JV met with the Project's acoustic specialist that confirmed the conversion of internal noise goals to external goals is a suitable approach to modelling, and it is acceptable to assume that based on consultation the occupier will manage their premises in anticipation of the works.
- Two rain events occurred on 12 & 20 Oct 2019 that produced approx. 29mm & 15mm of rainfall respectively. Sites were adequately prepared for the rainfall and erosion & sediment controls proved to perform well.
- Environment monitoring was completed as required throughout the monitoring period. No non-compliances were identified.
- Inductions, toolbox talks and prestart presentations were conducted at each site as works progressed.

Complaints Summary

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

Date	Event	Purpose	Summary of Feedback	Response within
10/10/19	Complaint	Dust from Saw Cutting	Caller was unhappy with the dust being generated by saw cutting in Albert St	1 day
18/10/19	Complaint	Noise from Saw cutting	Responded to stakeholder providing advice of the fact that saw cutting is now complete, and provided forward look ahead of upcoming activities	2 days