

Construction Environmental Management Plan

Cross River Rail Project – Tunnel, Stations and Development
Package (TSD)

Document number: CRRSD-EN-MPL-CBGU-000019

Revision date: 19/12/2019

Revision: 3

Compliance Matrix

CRRDA REFERENCE	REQUIREMENT	ADDRESSED IN SECTION
Coordinator-General’s change report – whole of project refinements 2019 Appendix 1 – Part C. – Condition 4 Construction Environmental Management Plan		
(a)	Prior to the commencement of Project Work, a Construction Environmental Management Plan for those works (Relevant Project Work) must be developed by the Proponent and endorsed by the Environmental Monitor as being consistent with the Outline EMP and these imposed conditions.	This Plan
(b)	The endorsed Construction Environmental Management Plan must be submitted to the Coordinator General at least 20 business days prior to the commencement of Relevant Project Works.	This Plan
(c)	The Construction Environmental Management Plan must:	
	(i) describe the Relevant Project Work	Section 2
	(ii) be based on predictive studies and assessments of construction impacts which have regard to the scale, intensity, location and duration of construction works, and location of Directly Affected Persons	Relevant sub-plans
	(iii) be generally consistent with the Outline EMP and incorporate its environmental outcomes and performance criteria	This Plan
	(iv) incorporate and respond to the Imposed Conditions (Construction)	This Plan and associated Sub-plans
	(v) demonstrate that the Imposed Conditions (Construction) will be complied with during Relevant Project Work	This Plan and associated Sub-plans
	(vi) incorporate the community engagement plan, including the complaints management process, in accordance with Condition 9	Sections 4.3, 6 and 8
	(vii) where predictive studies indicate impacts beyond those provided for in the performance criteria, incorporate mitigation measures to achieve the environmental outcomes	Associated sub-plans
	(viii) establish specific mitigation measures and processes for consultation with Directly Affected Persons for Project Works under Conditions 9(c), 11(c), and 11(e)	This Plan and associated Sub-plans
	(ix) contain a program and procedures for ongoing monitoring to identify the effectiveness of mitigation measures in achieving the Imposed Conditions (Construction) and the environmental outcomes in (iii)	Section 7.2 and associated sub-plans
	(x) include a process for regular review and if required updating of the Construction Environmental Management Plan, including a process to review and implement additional or different mitigation measures in response to monitoring results	Section 8.3 and associated sub-plans
	(xi) incorporate the EMP sub-plans required by the Imposed Conditions or as required by the approved Outline EMP.	All associated sub-plans

CRRDA REFERENCE	REQUIREMENT	ADDRESSED IN SECTION
(d)	The Construction Environmental Management Plan must be implemented for the duration of Relevant Project Work.	This Plan
(e)	Relevant Project Work is authorised if it is undertaken in accordance with the Construction Environmental Management Plan.	This Plan
(f)	The Construction Environmental Management Plan must be publicly available on the project website for the duration of the construction phase.	Section 8.4
(g)	The Construction Environmental Management Plan may be updated.	
	(i) updates to the Construction Environmental Management Plan that include new or additional Relevant Project Work must be endorsed by the Environmental Monitor as being consistent with condition 2 before Relevant Project Work may proceed.	Section 8.3
(h)	Updates to the Construction Environmental Management Plan that are limited to new or different mitigation measures for Managed Work may be endorsed by the Environmental Monitor.	Section 8.3

Details of Revision Amendments

Document Control

The CBGU Project Director is responsible for ensuring that this Plan is reviewed and approved. The Project Environment & Sustainability Manager is responsible for updating this Plan to reflect changes to the Project, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the CBGU Project Director or delegate before being distributed / implemented.

Table 1 Document schedule

Time for Submission	Period during which Project Co must provide updates	Update Interval
Prior to Relevant Project Works	From initial submission until the commencement of Relevant Project Works	6-monthly

Revision Details

Table 2 Revision details

Revision	Details
A	Internal Review
0	Updated Revision - Endorsed by IEM (23/08/2019) & Submitted to CG (23/08/2019)
1	For Review
2	For Review
3	For Review

Distribution and Authorisation

The CBGU Project Director is responsible for the distribution of this Plan. The controlled master version of this document is available for distribution as appropriate and maintained on TeamBinder. All circulated hard copies of this document are deemed to be uncontrolled.

All personnel employed on the Project will perform their duties in accordance with the requirements of this Plan, supporting management plans, and related procedures.

Table 3 Distribution List

Recipient	Distribution Method
Cross River Rail Delivery Authority (Delivery Authority)	TeamBinder
Project Independent Certifier (PIC)	TeamBinder
CBGU Project Personnel (including SA and FM)	As per TeamBinder Distribution List
Proof Engineer/Verification Engineer	As per TeamBinder Distribution List

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Referenced Documents

The following provides a list of referenced documents either as a sub-plan to this plan or referenced from.

Table 4 Referenced Documents

Document Number	Document Name	Location of Controlled Version
Referenced Project Plans include:		
CRRTSD-CS-MPL-CBGU-000010	Construction Management Plan	TeamBinder
CRRTSD-TM-MPL-CBGU-000012	Construction Traffic Management Plan	TeamBinder
CRRTSD-TM-MPL-CBGU-000013	Construction Vehicle Management Plan	TeamBinder
CRRTSD-SH-MPL-CBGU-000003	Occupational Health and Safety Plan	TeamBinder
	Outline Environment Management Plan	TeamBinder
CRRTSD-CP-MPL-CBGU-000008	Training Management Plan	TeamBinder

Note: this Management Plan may not contain the current version of the document listed above. Refer to the 'location of controlled version' for the most current version.

Glossary of Terms

Term	Meaning
$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter of Air
2012 CGER	Coordinator-General's evaluation report
AASS	Actual Acid Sulfate Soils
ACH Act	Aboriginal Cultural Heritage Act 2003
ARI	Average Recurrence Interval
ASS	Acid Sulfate Soils
BCC	Brisbane City Council
BTC	Brisbane Transit Centre
CaCO ₃	Calcium carbonate (Aglime)
CBD	Central Business District
CBGU	Design & Construct Contractor comprising a joint venture with CPB Contractors Pty Ltd, BAM International Australia Pty Ltd, Ghella Pty Ltd and UGL Engineering Pty Ltd
CEMP	Construction Environmental Management Plan
CG	Coordinator-General
CGCR	Coordinator-General change reports
CHMP	Cultural Heritage Management Plans
CLR	Contaminated Land Register
COEMP	Commissioning Environmental Management Plan
CPB CMS	CPB Contractors Management System
CRR	Cross River Rail
CSEP	Communications and Stakeholder Engagement Plan
DATSIP	Department of Aboriginal and Torres Strait Islander Partnerships
dBA	means decibels measured on the 'A' frequency weighting network
DEHP	Department of Environment and Heritage Protection (now DES)
Delivery Authority	Cross River Rail Delivery Authority
DES	Department of Environment and Science
Directly Affected Persons	means an entity being either the owner or occupant of premises for which predictive modelling or monitoring indicates the project impacts would be above the performance criteria in the Imposed Conditions
DTMR	Department of Transport and Main Roads
ECM	Environmental Constraints Map
EIS	Environmental Impacts Statement
EMP	Environmental Management Plan
EMR	Environmental Management Register

Term	Meaning
EMS	Environmental Management System
EP Act	Environmental Protection Act 1994 (Qld)
EPP (Water)	Environmental Protection (Water) Policy 2009 (Qld)
ESC	Erosion and Sediment Control
ESCP	Erosion and Sediment Control Sub-Plan
EWMS	Environmental Work Method Statements
GHG	Greenhouse Gas
INB	Inner Northern Busway
IECA	International Erosion Control Association
LA10 adj	means the A-weighted sound pressure level, adjusted for tonal character or impulsiveness, that is exceeded for 10% of a 1 hour period when measured using time-weighting 'F'
LAeq adj	means an A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character, that within a 1 hour period has the same mean square sound pressure of a sound that varies with time
LCA	Licensed Construction Area
mg/m ² /day	Milligrams per Square Meter per Day
mm/s PPV	Millimetres per Second Peak Particle Velocity
NATA	National Association of Testing Authorities
NEPM	National Environmental Protection Measure
PA	Princess Alexandra
PAH	polycyclic aromatic hydrocarbons
PASS	Potential Acid Sulfate Soils
PFAS	per- and poly-fluoroalkyl substances
PM ₁₀	Particulate Matter of 10 Microns in diameter or smaller
Project	Cross River Rail Project
PSI	Preliminary Site Investigations
PSTR	Project Scope and Technical Requirements
QLD	Queensland
QR	Queensland Rail
RfPC	EIS Request for Project Change
RfPC-1	EIS Request for Project Change 1
RfPC-2	EIS Request for Project Change 2
RfPC-3	EIS Request for Project Change 3
RfPC-4	EIS Request for Project Change 4
RfPC-5	EIS Request for Project Change 5

Term	Meaning
RNA	Royal National Agriculture and Industrial Association
SDS	Safety Data Sheets
SPL	Sound Pressure Levels
SQP	Suitably Qualified Person
TMR	Transport and Main Roads
TRH	total recoverable hydrocarbons
TSP	Total Suspended Particulates
WRRMP	Waste and Resource Recovery Management Plan

1 Introduction

1.1 Background

The Cross River Rail (CRR) Project is a 10.2 km north-south rail line connecting Dutton Park to Bowen Hills, including a 5.9km tunnel under the Brisbane River and Central Business District (CBD).

The D&C Subcontractor for the CRR Tunnel, Stations and Development (TSD) Package (the Project) is the joint venture comprising of CPB Contractors, BAM International Australia Pty Ltd, Ghella Pty Ltd and UGL Engineering Pty Ltd (CBGU D&C JV).

CBGU JV (CBGU) is responsible for delivering the D&C Activities and Final Acceptance Services for the T&S Works during the D&C Phase and through to the Date of Final Acceptance.

The project includes;

- A new north–south passenger rail line, extending from Bowen Hills in the north over 10.2 kilometres (km) to Salisbury in the south
- Two 5.9-kilometre-long parallel tunnels, extending from Victoria Park at Spring Hill to Dutton Park via the Brisbane Central Business District (CBD), Woolloongabba and Dutton Park
- New underground railway stations at Roma Street, Albert Street, Woolloongabba, and Boggo Road
- New surface stations at the Royal National Agriculture and Industrial Association (RNA) Exhibition Showgrounds, Dutton Park.

The project also includes construction of four new high-capacity underground stations at Boggo Road, Woolloongabba, Albert Street, Roma Street and redevelopment of the existing over Dutton Park Station. Cross River Rail will integrate with proposed Brisbane Metro services.

The Project is proposed to be delivered under two packages:

- Tunnels, Station & Development (TSD) to be delivered by a Public Private Partnership (PPP)
- Rail Integration Systems (RIS) to be delivered by an Alliance.

The TSD Package will primarily deliver the underground section of the project. The scope of work will include:

- The tunnel from a southern portal near Dutton Park station, under the Brisbane River and the CBD, to a northern portal beyond Normanby
- Four new underground stations at Boggo Road, Woolloongabba, Albert Street and Roma Street
- The tunnel portals and dive structures
- All associated mechanical, electrical and safety systems, including vertical transportation for passengers at underground stations
- Tunnel track work, traction power systems and selection rail operation and control infrastructure.

1.2 Purpose of the CEMP

The Construction Environmental Management Plan (CEMP) has been developed to:

- Provide a structured high-level approach to the management of environmental issues during the delivery of the Project
- Ensure appropriate environmental management measures and controls are implemented during the construction phase to ensure environmental impacts are minimised or avoided
- Document the environmental outcomes for the construction phase of the Project.

Implementing this CEMP and associated sub-plans effectively will ensure that the project meets regulatory and policy requirements in a systematic manner and continually improves its performance.

2 Project Summary

2.1 Site Investigation Works

The site investigation works are expected to take approximately 15 weeks and will be undertaken prior to and in conjunction with the site establishment works. These works will include:

- Geotechnical (drilling and excavation). Some 46 drill holes at varying depths of 15-45 m within the station precincts and surrounds
- Utilities (Excavations). Utility investigations across the TSD Licenced Construction Area (LCA), dependent on the specific requirements for positive identification of utilities to inform and confirm the design. Extent of excavation will generally comprise the following:
 - Localised pothole: 50 mm diameter hole up to 2 m depth
 - Slot trench: 300 mm width up to 2 m depth running perpendicular to roadway, generally full width of footpath verge
 - Excavation method: Non-destructive digging methods utilising hydro excavation equipment (vacuum excavation) with limited pressure to assure no damage to identified services (not exceeding 13,800 kPa / 2000 PSI)
 - Site specific utility locations will be available mid-September.
- Contamination investigations carried out in conjunction with the geotechnical drilling;
- Establishment of Monitoring Equipment
- Hazmat Surveys (Roma & Albert Streets demo destructive testing).

2.2 Site Establishment Works

The site establishment works (as defined by this plan) is scheduled to commence mid-2019 and continue until completion of piling works in 2020. Subsequent works, including piling (for example at the northern portal beyond 2020) will be managed within a subsequent revision of the CEMP.

2.2.1 Roma Street

- Utility Relocations including stormwater, sewage, telecommunications etc. across the TSD Licenced Construction Area (LCA)
- Protection of utilities within site area and access/egress points
- Provision of construction and site services
- Disconnection of services
- Demolition of:
 - BTC East Tower
 - Hotel Jen
 - Pedestrian overpass.
- Relocation of pedestrian walkways

- Temporary Platform to be constructed
- Construction of temporary water treatment plant and installation of electrical substation/ generators
- Removal of kerb side assets
- Clearing of street trees and vegetation adjacent to Parkland Boulevard to make way for pedestrian diversions, laydown areas and site vehicle access.
- Site Establishment:
 - Installation of Gantries, Hoarding, Fences, Scaffolding
 - Minor adjustments to intersections to facilitate truck movements
 - Establishment of Site Access/Egress
- Piling (boring)
 - Pile type: 264 Soldier piles. Soldier piling, used for deep excavations, uses piles at regular intervals typically constructed by installing vertical piles which are supported by horizontal supports to spread the load, known as lagging walls.
 - 750 mm diameter with an average depth of 4 m
- Site Access:
 - Establishment of Site Buildings, Fences, Sheds & Amenities.
 - On ground site facilities including Offices, Client Office (180m²), Cribs, Toilets, First Aid, Drug Testing, Gate Huts, Change Rooms, Wash Houses, Bath Houses and Stores.

2.2.2 Albert Street

- Utility Relocations including stormwater, sewage, telecommunications etc.
- Protection of utilities within site area and access/egress points
- Provision of construction and site services
- Disconnection of services to Lot 1 and Lot 2 (Lot 1 is East of Albert Street, south of Mary Street, Lot 2 is West of Albert Street, south of Mary Street)
- Demolition Lot 1 and Lot 2 (not at the North Entrance until December 2020)
- Relocation of pedestrians
- Construction of temporary water treatment plant and installation of electrical substation/ generators
- Removal of kerb side assets
- Clearing of street trees to make way for pedestrian diversions and site vehicle access.
- Site Establishment:
 - Installation of Gantries, Hoarding, Fences, Scaffolding
 - Minor adjustments to intersections to facilitate truck movements
 - Establishment of Site Access/Egress

- Closure of Albert Street Mary to Charlotte Streets.
- Piling (boring)
 - Installation of 81 Hard secant piles, 80 soft secant piles, 106 Contiguous piles, and 155 RHS Reinforced Composite piles using Bauer BG28
 - 80 piles will be installed between December 2019 and January 2020, 81 between March and June 2020, and 261 between March and May 2020
 - 1050 mm diameter x 6 m long
- Site Access:
 - Establishment of Site Buildings, Sheds & Amenities.
 - Quadruple stacked on top of gantry site facilities including Offices, Client Office (180m²), Cribs, Toilets, First Aid, Drug Testing, Gate Huts, Change Room, Wash Houses, Bath Houses and Stores.

2.2.3 Woolloongabba

- Utility Relocations including stormwater, sewage, telecommunications etc.
- Provision of construction and site services
- Protection of utilities within site area and access/egress points
- Site Establishment:
 - Installation of Hoarding and Fences
 - Earthworks to establish working platform, access roads, laydown areas, site levelling
 - Establishment of Site Access/Egress.
- Site Access:
 - Establishment of Site Buildings, Sheds & Amenities.
 - Double stacked on ground site facilities including Offices, Client Office (180m²), Cribs, Toilets, First Aid, Drug Testing, Gate Huts, Change Rooms, Wash Houses, Bath Houses and Stores.
- Piling (boring)
 - Installation of 175 Soldier piles using a Bauer BG28 with works being conducted from North to South 750 mm diameter x 5 m depth
- Signage

2.2.4 Boggo Road

- Utility Relocations including stormwater, sewage, telecommunications etc.
- Provision of construction and site services
- Demolition – Southern Portal and Boggo Roundabout
- Relocation of pedestrians, cycle paths & property access

- Clearing of street trees will occur in various locations due to road alignments, to make way for spoil handling sites, laydown areas, site offices and parking, for site vehicle access and to install the noise walls/hoardings during site establishment.
- Site Establishment
 - Installation of Hoarding, Noise walls, Fences
 - Earthworks for access roads, laydown areas, site levelling
 - Establishment of Site Access/Egress
 - For piling works, piling pads.
- Piling (Boring) - Boggo Road
 - Pile type: 30 Soldier piles, 132 hard secant piles and 131 soft secant piles
 - Equipment: 3 x pile rigs, concrete trucks, concrete pumps, crawler cranes, excavator
 - Sequencing: 3 crew will work simultaneously
 - 1050 mm diameter x ranging from 15 – 21 m deep
- Piling (boring) - Southern Portal
 - 684 soldier piles
 - Equipment used will include 4 x pile rigs, concrete trucks, concrete pumps, crawler cranes, excavators
 - 4 crews will work simultaneously for Stage 1 works, 2 crews for Stage 2 works
 - 900 mm diameter with 11 m depth
- Site Access:
 - Establishment of Site Buildings, Sheds & Amenities.
 - Triple stacked on ground site facilities including Staff Offices, Client Offices (180m²), Cribs, Toilets, First Aid, Drug Testing, Gate Huts, Change Rooms, Wash Houses, Bath Houses and Stores
 - On ground site facilities including Offices, Cribs, Toilets, First Aid and Drug Testing at the Southern Portal.

2.3 Construction Activities

The CEMP has been prepared to manage construction activities for the preliminary stages of construction activities discussed in 2.1 and 2.2 above, and phase two of the project in this section. Activities may include but are not limited to:

- Mechanical & Electrical works
- Railway works
- Treatment of groundwater prior to discharge
- Relocation of services

- Civil works
- Tunnel works (includes drill and blast, fit-out and finishings)
- Spoil removal and cartage
- Contaminated spoil removal and cartage
- Vegetation clearing.

The summarised activities for each portal have been outlined in the following sections.

2.3.1 Northern Portal

- Site investigation
- Site establishment and access (establishment of Site Buildings, Sheds & Amenities)
 - Installation of Hoarding and Fences
 - Earthworks to establish working platform, access roads, laydown areas, site levelling
- Utility Relocations
- Piling
- Excavation

2.3.2 Roma Street

- Continued demolition of existing buildings
- Construction (further Details in Construction MP)
 - Structures and building works
 - Excavation of shaft/s, cavern, tunnels
 - Close QR Platform 2 & 3
 - Commence Mined Tunnel Excavation - Adit
 - Spoil management
 - Earthworks
 - Noise Treatments
 - Divert Inner Northern Busway
 - Construct temporary platforms
 - Concrete works
 - Drill and blast
 - Tunnelling Infrastructure Assembly within Shaft
 - Utilities
 - Water treatment/management
 - Drainage
 - Street works
 - Piling service building shaft
 - General surface support operations

2.3.3 Albert Street

- Demolition of existing buildings at Lot 1, Lot 2 (main Entrance) and Lot 3 (Northern Entrance)
- Construction (further Details in Construction MP)
 - Structures and building works
 - Excavation of shaft/s, cavern
 - Concrete works
 - Drill and blast

- Tunnelling Infrastructure Assembly within Shaft
- Utilities
- Water treatment/management
- Drainage
- Street works
- Commence Mined Tunnel Excavation - Adit
- Spoil management
- Earthworks
- Noise Treatments

2.3.4 Boggo Road / Dutton Park / Southern Portal

- Demolition of road infrastructure
- Construction -Boggo Road Station (further Details in Construction MP)
 - Structures and building works
 - Traffic diversion
 - Drill and blast
 - Commence Mined Tunnel Excavation - Adit
 - Spoil management
 - Earthworks
 - Noise Treatments
 - Concrete works
 - Excavation of shaft/s, cavern
 - Tunnelling Infrastructure Assembly within Shaft
 - Utilities
 - Water treatment/management
 - Drainage
 - Street works

2.3.5 Woolloongabba

- Construction (further Details in Construction MP)
 - Structures and building works
 - Excavation of shaft/s, decline & cavern
 - Tunnelling Infrastructure Assembly within Shaft
 - Utilities
 - Water treatment/management
 - Drainage
 - Street works
 - Concrete works
 - Drill and blast
 - Commence Mined Tunnel Excavation - Adit
 - Spoil management
 - Earthworks
 - Noise Treatments

2.4 Construction Sequence

The figure below summarises the indicative construction program for the project.

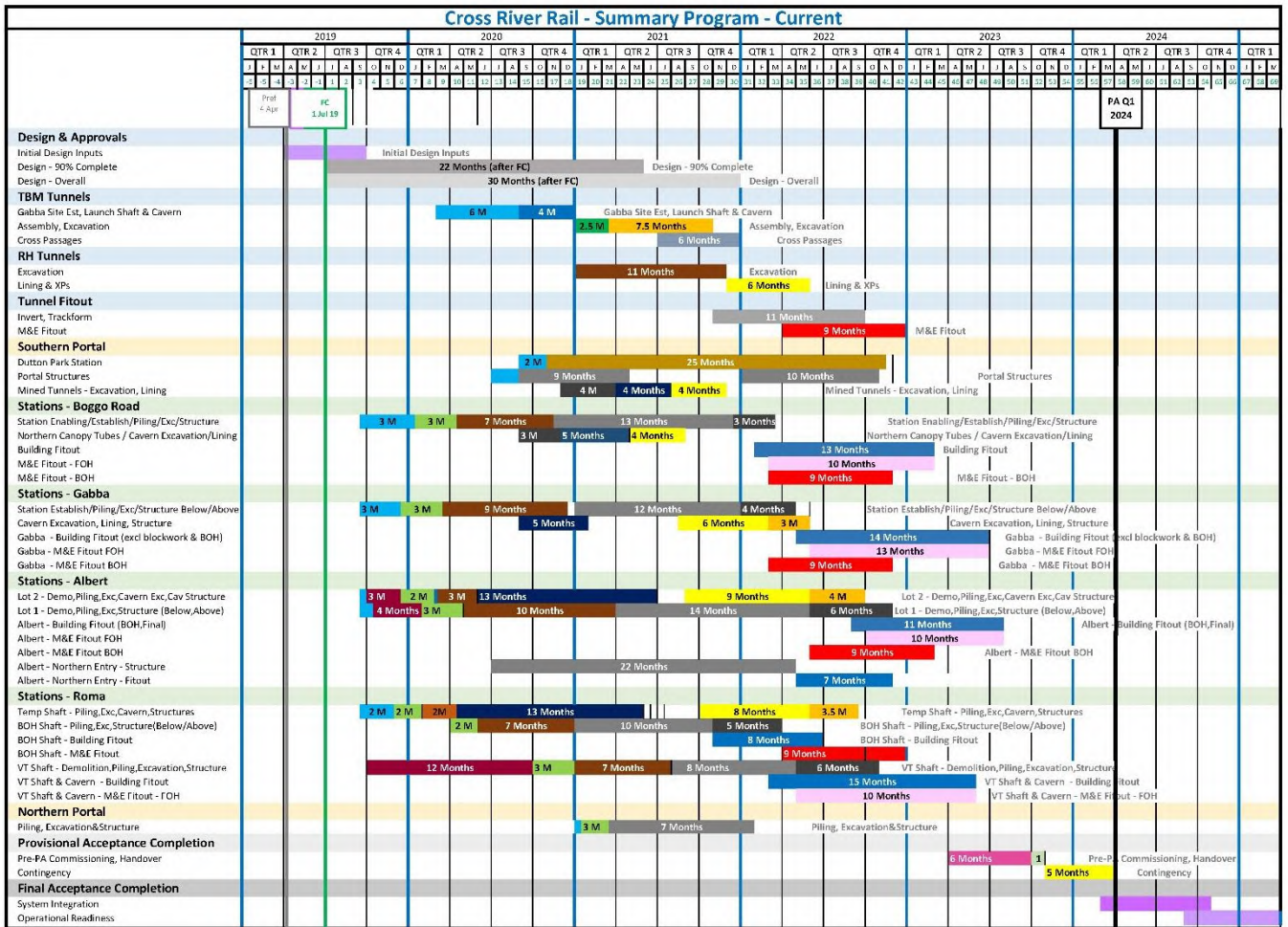


Figure 1 Construction Program

3 Legislative Requirements

3.1 Coordinator-General Conditions

This CEMP, the associated sub-plans and the construction works will be managed in accordance with the Coordinator Generals conditions.

The most up-to-date version of the Coordinator-General's Change Report – hours of work 2019 and the associated conditions (Appendix D) can be found on the Coordinator-General's website. Table 5 below identifies where each relevant condition has been addressed by the project's documentation.

Table 5 Coordinator-General Conditions

Condition Number	Entity with Jurisdiction	Addressed
Condition 1: General Conditions	Coordinator-General	Section 3.1
Condition 2: Outline Environmental Management Plan	Coordinator-General	Has been developed and will be complied with through this plan.
Condition 3: Design	Chief Executive, TMR	Not relevant to construction phase
Condition 4: Construction Environmental Management Plan	Chief Executive, TMR	This Plan
Condition 5: Compliance	Chief Executive, TMR	Section 6
Condition 6: Reporting	Chief Executive, TMR	Section 7.5
Condition 7: Environmental Monitor	Chief Executive, TMR	Section 4.3
Condition 8: Community Relations Monitor	Chief Executive, TMR	Section 4.3
Condition 9: Community Engagement Plan	Chief Executive, TMR	Sections 4.3 and 6.6
Condition 10: Hours of Work	Chief Executive, TMR	Section 4.4
Condition 11: Noise and Vibration	Chief Executive, TMR	Noise and Vibration Management Plan
Condition 12: Property Damage	Chief Executive, TMR	Noise and Vibration Management Plan Land Management Plan
Condition 13: Air Quality	Chief Executive, TMR	Air Quality Management Plan
Condition 14: Traffic and Transport	Chief Executive, TMR	Construction Worksite Management Plan Construction Traffic Management Plan Construction Vehicle Management Plan
Condition 15: Water Quality	Chief Executive, TMR	Water Quality Management Plan
Condition 16: Water Resources	Chief Executive, TMR	Water Quality Management Plan
Condition 17: Surface Water	Chief Executive, TMR	Water Quality Management Plan
Condition 18: Erosion and Sediment Control	Chief Executive, TMR	Erosion and Sediment Control Plan
Condition 19: Acid Sulfate Soils	Chief Executive, TMR	Acid Sulfate Soils Management Plan
Condition 20: Landscape and Open Space	Chief Executive, TMR	Visual Amenity and Lighting Management Plan
Condition 21: Worksite Rehabilitation	Chief Executive, TMR	Nature Conservation Management Plan
Condition 22: Environmental Design Requirements	Chief Executive, TMR	Not applicable to construction works
Condition 23: Commissioning	Chief Executive, TMR	Not applicable to construction works

3.2 Commonwealth Legislation

- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*
- *Disability Discrimination Act 1992*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *National Greenhouse and Energy Reporting Act 2007.*

3.3 State Legislation

- *Biosecurity Act 2014*
- *Cross River Rail Delivery Authority Act 2016*
- *Environmental Protection Act 1994*
- *Environmental Protection (Water and Biodiversity) Policy 2019*
- *Environmental Protection (Noise) Policy 2019*
- *Environmental Protection (Air) Policy 2019*
- *Aboriginal Cultural Heritage Act 2003*
- *Acquisition of Land Act 1967*
- *Building Act 1975*
- *City of Brisbane Act 2010*
- *Coastal Protection and Management Act 1995*
- *Economic Development Act 2012*
- *Electricity Act 1994*
- *Electrical Safety Act 2002*
- *Explosives Act 1999*
- *Fisheries Act 1994*
- *Forestry Act 1959*
- *Land Act 1994*
- *Land Title Act 1994*
- *Local Government Act 2009*
- *Nature Conservation Act 1992*
- *Planning Act 2016*
- *Plumbing and Drainage Act 2002*
- *Queensland Heritage Act 1992*
- *Rail Safety National Law Queensland Act 2017*
- *State Development and Public Works Organisation Act 1971*
- *Survey and Mapping Infrastructure Act 2003*
- *Transport Infrastructure Act 1994*
- *Transport Operations (Passenger Transport) Act 1994*
- *Transport Operations (Road Use Management) Act 1995*
- *Transport Planning and Coordination Act 1994*
- *Transport Security (Counter Terrorism) Act 2008*
- *Vegetation Management Act 1999*
- *Waste Reduction and Recycling Act 2011*
- *Water Act 2000*
- *Work Health and Safety Act 2011*
- *Nature Conservation Act 1992*

3.4 Approvals, Permits and Licences

CBGU will obtain licences, permits and approvals as required by law and maintain them as required throughout the delivery phase of the project. No condition of the Infrastructure Approval removes the obligation for CBGU to obtain, renew or comply with such necessary licences, permits or approvals.

A range of approvals, permits and licences apply to all stages of the project. The Approvals Register has been provided here as Appendix A.

3.5 Guidelines and Standards

The various sub-plans associated with this CEMP specify relevant guidelines and standards that must be adhered to during construction of the project. Overarching guidelines and standards that are of relevance to environmental management during construction of the project may include:

TMR standards, including:

- Technical Manual – Environmental Processes Manual (August 2013)
- Technical specifications and standards
- MRTS51 Environmental Management – TMR Specifications

Queensland Rail standards, including:

- Safety and Environment Management System

TMR (TransLink) standards, including:

- TransLink Station Signage Manual
- TransLink Public Transport Infrastructure Manual (2015)

BCC environmental policies and guidelines, including:

- Urban Stormwater Management Strategy
- Erosion Treatments for Urban Creeks
- Stormwater Outlets in Parks and Waterways
- Landscape Design for Water Conservation
- Guidelines on Identifying and Applying Water Quality Objectives in Brisbane CityS190 Landscaping Standard
- International Erosion Control Association Best Practice Erosion and Sediment Control Guidelines 2008 (IECA Guidelines)

4 Implementation

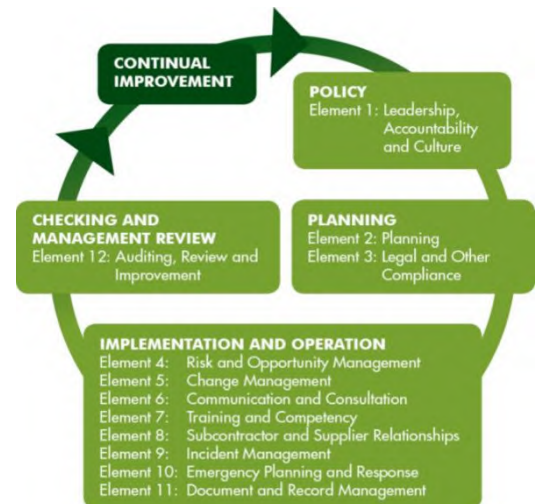
4.1 Environmental Management System Overview

CBGU will use an Environmental Management System (EMS) that is based on the CPB EMS, which has been adapted to address project and joint venture requirements. This CEMP provides the system to manage and control the environmental aspects of the Project during construction. It also provides the overall framework for the system and procedures to ensure environmental impacts are minimised, and legislative and other requirements are fulfilled. The CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the Project on the environment. The CBGU EMS:

- Is generally in accordance with the principles of AS/NZS ISO 14000 Environmental Management Standards Set
- Complies with the Environmental Documents.

The EMS consists of the following key components:

- Governance documentation: The Coordinator General Conditions and Legislative requirements
- CEMP and sub-plans: This CEMP describes how CBGU will achieve the environmental outcomes on the project. Sub-plans identify requirements and processes applicable to specific impacts of the project’s activities
- Procedures and tools: Procedures and tools provide additional detail to support the CEMP and sub-plans or are used in the implementation of the CEMP
- Continuous improvement: Continual improvement is achieved through constant measures and evaluation (including monitoring, inspections), audit and review of the effectiveness of the CEMP and adjustment and improvement of the CEMP, project environmental outcomes and the EMS
- Performance targets: Objectives and targets have been developed as a means of assessing environmental performance during construction of the project
- Integration with other management plans: The CEMP is a functional plan in the integrated set of project management plans.



4.1.1 Environmental Aspects and Impacts

CBGU will use a risk management approach during all stages of the project to identify, assess, control and review environmental risks and harness opportunities. The environmental risk assessment undertaken during the development of the EIS has been used as a basis to further develop the project’s environmental risks and opportunities. Environmental risks and opportunities are considered through:

- The risk assessment undertaken during the development of the environmental impact statement
- The Principal Risk Assessment conducted at bid stage for major tangible risks

- Safety -in-design workshops conducted throughout the project, which will include environmental considerations, where appropriate
- Construction Area Plan (CAP) risk assessment
- Work Pack risk assessments
- Project pre-start meetings.

The objectives of risk assessment are to:

- Identify activities/aspects, events or outcomes that have the potential to adversely affect the local environment and/or human health/property
- Qualitatively evaluate and categorise each risk item
- Assess whether risk issues can be managed by environmental protection measures
- Qualitatively evaluate residual risk with implementation of measures.

Risk assessments for the project consider *AS/NZS ISO 31000:2009: Risk management – Principles and guidelines*.

The Environment and Sustainability Manager (or delegate) is generally involved in, or has approval authorities, for most risk assessment types listed above to ensure environmental risks and opportunities are adequately raised and addressed. Issue-specific management plans also include a section that identifies key aspects and potential impacts relevant to that issue. Mitigation and management measures are then identified to minimise the risk associated with those aspects and potential impacts.

The current environmental risk assessment for the Project has been provided as Appendix B. The risk assessment is subject to period review and update via risk assessment workshops, convened by the Environment and Sustainability Manager and incorporating relevant stakeholders.

4.2 Environmental Management Documentation

The overall structure of the Environmental Management Documentation for the project, and the relationship between the documents has been presented in Figure 2. Further details relating to each has been provided in the following sections.

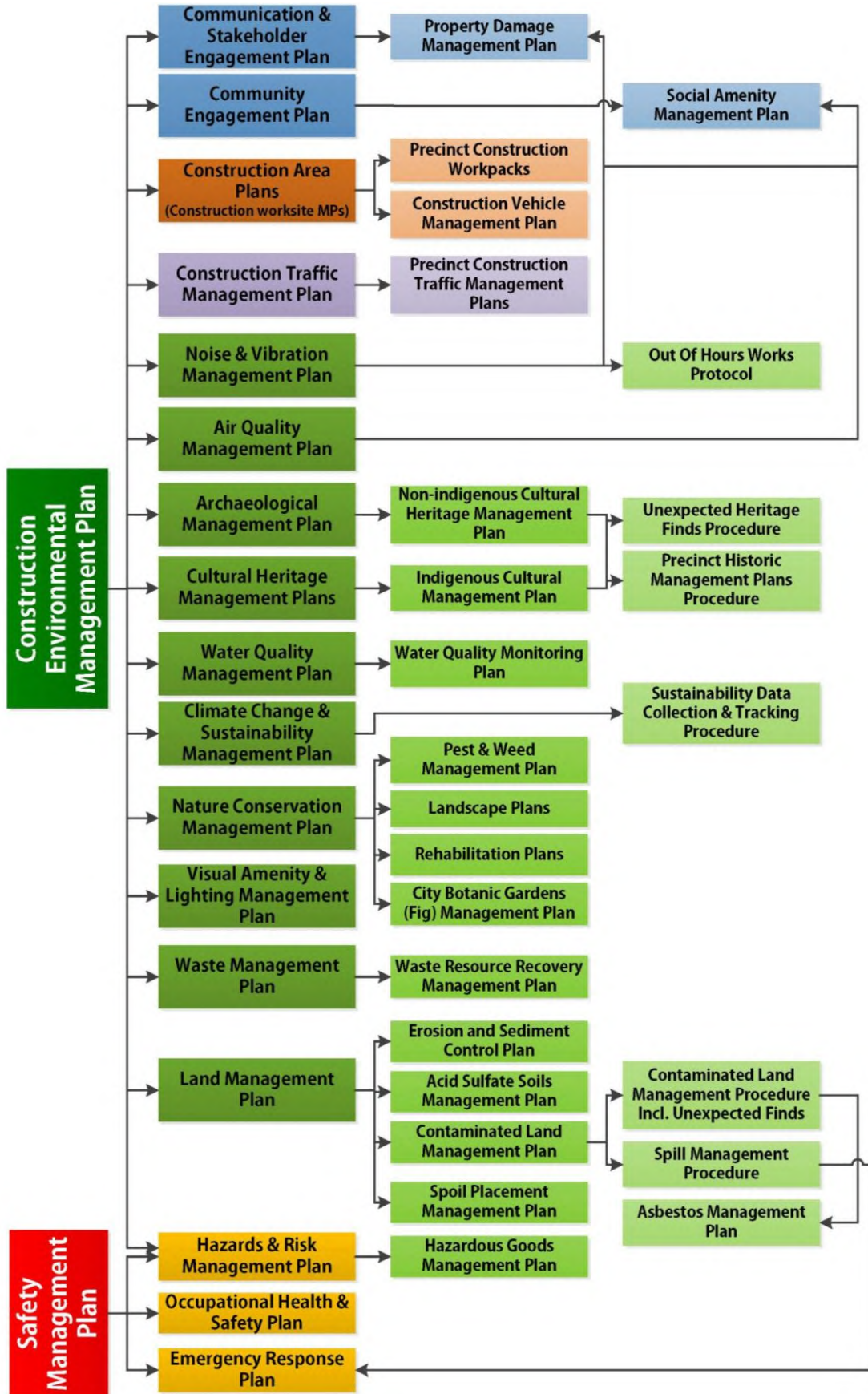


Figure 2 Environmental Management Document Hierarchy

4.2.1 Construction Environmental Management Plan

This CEMP outlines the environmental management practices and procedures that are to be followed during the construction of this project. It provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled. The implementation of this CEMP is supported by the remainder of the environmental management system.

The environmental management measures defined in this CEMP have been developed with consideration of the Coordinator General’s Conditions. This CEMP is consistent with AS/NZS ISO 14001:2015 requirements.

4.2.2 Construction Environmental Management Subplans

A number of construction environmental management sub plans support the CEMP, in section 4.6. This information has been prepared to identify requirements and processes applicable to specific impacts or aspects of the project’s activities. The sub plans address the OEMP and Coordinator General Conditions.

4.2.3 Sub-plan structure

Each relevant sub-plan will follow the basic structure outlined below, to ensure that the Imposed Conditions, environmental outcomes and performance criteria are achieved.

Table 6 Sub-plan Structure

EMP component	Description	Effect
Environmental element	Aspect of project implementation to be managed as it affects environmental values.	Must be addressed.
Environmental outcome(s)	Required outcomes of the project for an environmental element.	Must be achieved.
Performance criteria	Measurable goals or indicators of the environmental outcome for an environmental element.	Must be achieved. If performance criteria cannot be achieved, this serves as a trigger for mitigation measures to be implemented.
Mitigation measures	<p>Mitigation measures are either:</p> <ul style="list-style-type: none"> – measures to satisfy the performance criteria (and in turn achieve the environmental outcomes) – actions developed in consultation with Directly Affected Persons in accordance with the <i>Community Engagement Plan</i> (CEP) and/or <i>Communications and Stakeholder Engagement Management Plan</i> to achieve the environmental outcome for the element. <p>The mitigation measures provided in the OEMP, Outline CEMP, Outline COEMP and any of its sub-plans are advisory only and may be revised through detailed design and construction planning. Additional or different mitigation measures may be applied to achieve the environmental outcome.</p>	<p>The mitigation measures to achieve the environmental outcomes must be developed in response to:</p> <ul style="list-style-type: none"> – the predicted scale, intensity and duration of Project impacts – in consultation with Directly Affected Persons in accordance with the <i>Community Engagement Plan</i> (CEP) and/or <i>Communications and Stakeholder Engagement Management Plan</i>. <p>The mitigation measures developed in consultation with Directly Affected Persons (in accordance with the <i>Community Engagement Plan</i> (CEP) and/or <i>Communications and Stakeholder Engagement Management Plan</i>) must be entered into the register</p>

EMP component	Description	Effect
		of mitigation measures to be maintained by the Environmental Monitor before relevant Project Works can commence. Once registered, the mitigation measures become the measure for future monitoring and compliance
Monitoring	<p>Monitoring is to be undertaken to determine:</p> <ul style="list-style-type: none"> – satisfaction of the performance criteria – implementation and effectiveness of mitigation measures. <p>A monitoring programme for a particular environmental element must be designed and included in each individual sub-plan prior to the commencement of construction.</p>	<p>Mandatory</p> <p>Monitoring must be conducted by suitably accredited and qualified personnel.</p> <p>Monitoring results will be reviewed by the Environmental Monitor.</p>
Reporting	<p>Purpose and frequency of reporting to demonstrate achievement of the environmental outcomes and satisfaction of the performance criteria or mitigation measures.</p> <p>Reporting must be in accordance with Conditions 5 and 6 of the Imposed Conditions.</p>	Mandatory
Corrective actions	<p>Actions to be developed and implemented in response to an exceedance of the relevant performance criteria, or failure to implement a mitigation measure.</p>	Mandatory

4.2.4 Construction Area Plan

Construction Area Plans (CAP) outline the planning process and construction methodology for the project areas to ensure effective and efficient execution of work, this is part of the overall Construction planning process as detailed in Figure 3 below. A key component of this process is to Undertake Construction Area Risk Review. The CAP will also include relevant approvals which are required to undertake the task. Additionally, the IEM will be provided the CAP prior to works commencing. If changes are made to the works, the updated CAP will be provided to the IEM.

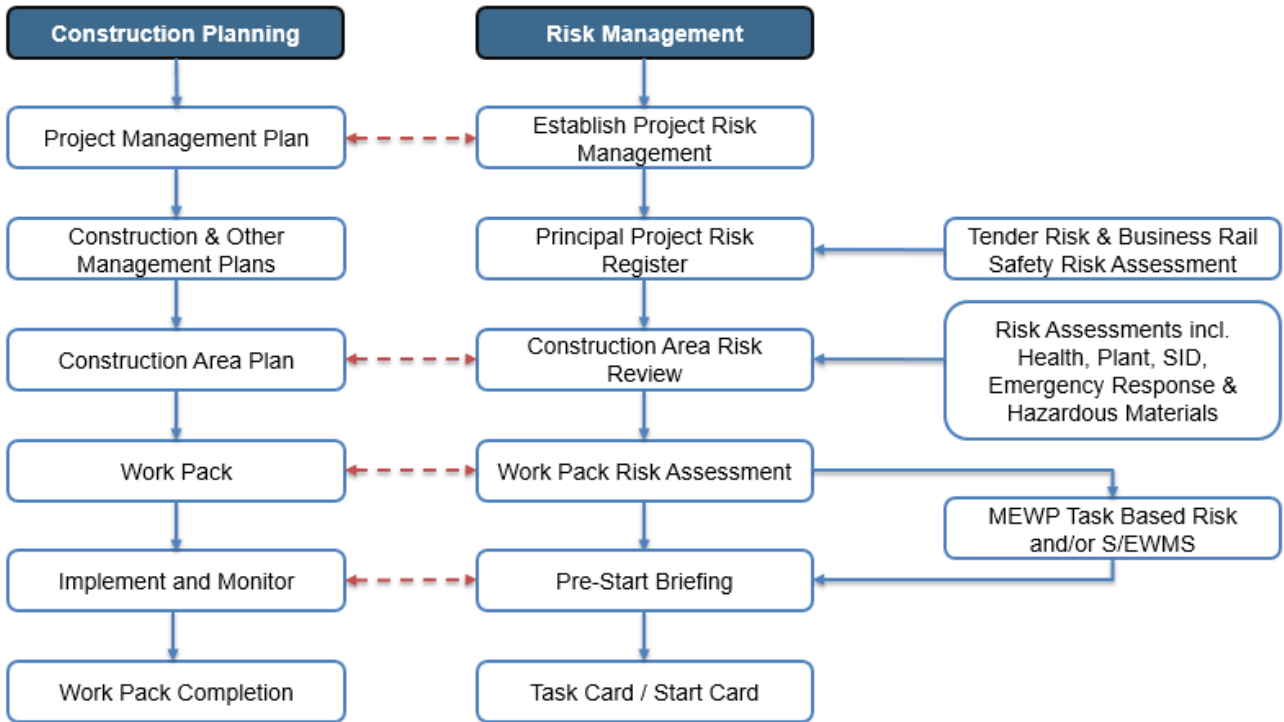


Figure 3 Construction Planning Process

4.2.5 Work Packs

Work Packs outline the work sequencing, requirements and approved documents for the Superintendent, Foreman, Supervisor and work crew to reference in order to undertake work effectively and efficiently.

WPs are collections of documents, consistent with the WBS that set out how and where work will be performed. Each WP may include a number of standard operating procedures, as well as details of unique or unusual methods particular to the work to be undertaken. WPs will be prepared, managed and issued by the construction team. Each WP will typically contain sufficient information to enable staff to construct the works, and to document that construction.

Each of these disciplines have their own WMSs, written to describe methodology, resources, plant and equipment, risks and other specific requirements. The Project Director and discipline managers will determine who is charged with allocating responsibility for developing these WMSs. Typically, WMSs will vary in size and content depending on the complexity of the work and the interfaces with other construction activities. Several WPs will be developed to support a WMS.

4.2.5.1 Environmental Constraints Maps

An Environmental Constraints Map (ECM) is a document prepared to assist in the planning and management of specific areas in Work Packs. Environmental and socially sensitive areas including vegetation, heritage, sensitive receivers, waterways, etc. may be included on an ECM.

The ECM provides a simple but effective tool to identify key risk areas and to promote ongoing communication to construction personnel throughout the project.

The ECMs will be document controlled separately to this CEMP or other applicable sub plans. Therefore, an update to the ECMs will not require this CEMP or sub plans to be updated.

4.2.5.2 Environmental Work Method Statements

Environmental Work Method Statements (EWMS) will be prepared for activities within or near environmentally sensitive areas and will include protection measures that minimise the risk of impacting the sensitive areas. The requirement for EWMS will be directed by the Environment and Sustainability Manager for those activities deemed to carry an inherent level of environmental risk (e.g. site establishment, demolition of heritage items).

As a minimum, EWMS will include:

- Description of the work activity, including any plant and equipment to be used;
- Outline of the sequence of tasks for the activity, including interfaces with other construction activities;
- Identification of any environmental and/or socially sensitive areas, sites or places;
- Identification of potential environmental risks/impacts due to the work activity;
- Mitigation measures to reduce the identified environmental risk, including assigned responsibilities to site management personnel; and
- Process for assessing the performance of the implemented mitigation measures.

The EWMS will be reviewed by the relevant Construction Manager and / or Project Engineer and then approved by the Environment and Sustainability Manager (or delegate). Relevant conditions of the EWMS will be incorporated into Works Packs as required.

4.3 Roles and Responsibilities

The organisational responsibilities and accountabilities in relation to environmental management throughout site establishment works are outlined in Table 7 below.

Table 7 Project Roles and Responsibilities

Project Responsibilities
<p>Coordinator-General</p> <p>Administers the <i>State Development and Public Works Organisation Act 1971</i>.</p>
<p>Chief Executive, Department of Transport and Main Roads</p> <p>Entity with jurisdiction for a number of the Imposed Conditions</p>
<p>Cross River Rail Delivery Authority</p> <ul style="list-style-type: none"> • Oversee CBGU’s detailed design process to achieve the environmental outcomes. The detailed design process may run progressively and in parallel with the construction programme, to ensure compliance with the Imposed Conditions and the EDRs. • Prepare the OEMP, including the Outline CEMP and the Outline COEMP. These will form the basis of CBGU’s CEMP and COEMP.

Project Responsibilities

- Ensure there is adequate and accurate identification and reporting of any exceedances of quantitative performance criteria, failure to achieve qualitative performance criteria, and failure to implement mitigation measures during construction.
- In consultation with CBGU, ensure corrective actions arising from exceedances or failures are implemented as soon as possible.
- Establish and maintain during design, construction and commissioning, a Project website for the purpose of informing people about Project activities.
- Appoint an independent, suitably skilled and qualified entity as the Environmental Monitor for the Project.
- Establish a community advisory group and appoint an independent, suitably skilled entity as the Community Relations Monitor for the Project.

Independent Environmental Monitor

- Monitor compliance with the imposed conditions during the construction of the project.
- Monitor compliance with the Construction Environmental Management Plan and sub-plans.
- Maintain a register of mitigation measures agreed between the Proponent and Directly Affected Persons (Mitigation Register).
- Review the compliance reports required by Condition 5, and the monthly reports and annual reports required by Condition 6, and provide advice to the Coordinator-General and the Proponent on the contents and adequacy of those reports.
- Review the results of monitoring, which may be verified by the Environmental Monitor including by independent monitoring.
- Provide advice to the Proponent about compliance with the Imposed Conditions for construction, including by providing the results of independent monitoring where required.
- Provide advice to the Proponent about issues raised in complaints and the response to complaints, including advice from the Community Relations Monitor.
- Endorse the Construction Environmental Management Plan as consistent with the Outline EMP and complying with the Imposed Conditions (Construction).

Community Relations Monitor - construction

- Communicate with the CBGU and the Environmental Monitor about community consultation strategies.
- Participate in the community advisory groups for the duration of construction at each locality likely to experience impacts during the construction of the Project.
- Chair each of the Community Advisory Groups, or where appropriate appoint a delegate to chair the Community Advisory Groups.
- Disseminate Project information to the community and Directly Affected Persons, in accordance with the CSEP and as agreed with the Authority.
- Inform the Environmental Monitor as soon as practicable of community concerns about construction and commissioning.
- Hold a current copy of the CEMP (including sub-plans), mitigation measures and complaints. This will be maintained by CBGU, who provides it to the Community Relations Monitor.
- To the extent reasonable and practicable, resolve community complaints not resolved by the complaints process where agreed with the Authority.

Project Responsibilities

- Facilitate discussions between CBGU and Directly Affected Persons about required mitigation measures. Attend all meetings, providing input on standard responses for similar issues.
- Participate in scheduled meetings to consider and provide feedback to CBGU and the Authority via the Environmental Monitor, about construction matters referred to the community advisory group for comment, construction planning and construction activities, and views received from the wider community.
- Provide timely comments in an advisory role to the Environmental Monitor on the CEMP for the Project as it relates to the CSEP.
- Provide advice to the Environmental Monitor during the construction phase in relation to the community engagement plan.
- For the construction phase, review the environmental reports prepared by CBGU and provide feedback to the Environmental Monitor in respect of complaints and community engagement

CPB, BAM, Ghella, UGL (CPBU)

- Responsible for all approvals, the Construction Environmental Management Plan, the monitoring required under this plan and all information relating to complaints, including access to the complaints database.
- Oversee the subcontractor's construction works to achieve the environmental outcomes.
- Ensure there is adequate and accurate identification and reporting of any exceedances of quantitative performance criteria, failure to achieve qualitative performance criteria, and failure to implement mitigation measures during construction.
- Auditing of subcontractor works to ensure compliance.
- In consultation with the subcontractor, ensure corrective actions arising from exceedances or failures are implemented as soon as possible.
- Establish and maintain a process for receiving, recording and responding to in a timely way, validated complaints about environmental issues.
- Ensure subcontractors comply with this CEMP for construction works.
- Establish an environmental management register of mitigation measures developed in consultation with Directly Affected Persons.
- Undertake regular monitoring in relation to environmental performance criteria and mitigation measures to ensure the environmental outcomes are being achieved. Validated monitoring results must be reported each month in the monthly environmental reports for the duration of site establishment works. This will inform the basis for the reporting of monitoring results on the Project website each month.
- Ensure there is adequate and accurate identification and reporting of any exceedances of performance criteria, failure to achieve performance criteria, and failure to implement mitigation measures during construction.
- Implement corrective actions arising from such exceedances or failures as soon as possible and in accordance with the CEMP. Non-compliances must be resolved in consultation with Directly Affected Persons. Corrective actions must be reported in the monthly environmental report.
- Establish and maintain open and effective communications, with people living or working near the Project worksites, people relying on the public transport or road transport network likely to be affected by Project construction traffic, and relevant stakeholders affected by the Project Works about:
 - The construction programme
 - The intended scale, timing and duration, and nature of proposed construction works
 - Proposed mitigation measures and monitoring of impacts, for the duration of the construction phase.
- Ensure the Project is carried out in accordance with relevant environmental legislation, policies and guidelines.

Project Responsibilities

- Ensure all site personnel are inducted in and are aware of their environmental and cultural heritage responsibilities and obligations under relevant legislation and the requirements of the CEMP.
- Appoint competent personnel to implement and manage the application of the CEMP.

Subcontractor

- Manage the construction works to achieve the environmental outcomes.
- Implement this detailed CEMP for the duration of the works.
- Maintain at the Project office and at each worksite:
- Maintain a current copy of the endorsed CEMP containing a record of all revisions and updates, the completion of planned actions, monitoring records, and reports which are made available.
- A schedule of all necessary approvals, including development approvals, environmental licenses, workplace health and safety and all other construction-related approvals necessary to undertake the works.
- Ensure the Project is carried out in accordance with relevant environmental legislation, policies and guidelines.
- Ensure that mitigation measures are implemented in accordance with the CEMP.

Queensland Rail – design and construction

- Statutory authority established under the Queensland Rail Transit Authority Act 2013 (Qld) and reports to the Minister for Transport and Main Roads.
- Queensland Rail (QR) discharges its statutory functions through its wholly-owned subsidiary Queensland Rail Limited. Queensland Rail Limited is a Rail Transport Operator (RTO) under the Rail Safety National Law (RSNL) for the south-east Queensland passenger rail network.
- QR will act as the RTO in respect of any Project Activities carried out in Queensland Rail Limited’s land during the design & construct phase, and Maintenance Phase and also all of the Rail Integration Systems (RIS) Works carried out by the RIS alliance.
- Unless the context otherwise requires, QR, together with its subsidiary Queensland Rail Limited, are collectively referred to as “Queensland Rail” for the purposes of the EMP documents

BCC – design and construction

- Liaise with the Authority about:
- Project design issues affecting land use planning intentions;
- traffic management and pedestrian management during the construction phase, particularly in relation to worksites;
- impacts and changes to bus services operated by BCC; and
- the relocation of public utilities.
- Carry out responsibilities in relation to delegated administration of permitting assessment and management of local law requirements, where applicable.
- Liaise with the Authority on relevant matters, such as urban design measures, local management plans and traffic management.

QUU – design and construction

Project Responsibilities

- Liaise with the Authority about:
- Project design issues affecting water and wastewater infrastructure
- The relocation of public utilities (water and wastewater infrastructure)
- Liaise with the Authority on relevant matters.

Where there are roles or responsibilities pertaining to a particular environmental element, they have been detailed within the relevant sub-plan.

4.4 Hours of Work

The following Imposed Condition relating to hours of work must be achieved for the Project.

Condition 10. Hours of work

(a) Construction works are authorised to be undertaken within the hours of work set out in Table 8.

Table 8 Construction Hours

Worksite / Precinct	Standard hours	Extended work hours	Managed Work [^]	Spoil haulage and materials/ equipment delivery
Southern portal	Monday to Saturday, 6:30 am – 6:30 pm	For approved rail possession—80 hrs continuous work (Other extended work) 6:30pm - 10:00pm, Monday to Friday	24 hrs, 7 days	24 hrs, 7 days
Boggo Road Railway station	Monday to Saturday, 6:30 am – 6:30 pm	Monday to Friday, 6:30 pm – 10:00 pm	24 hrs, 7 days	Monday to Friday: 6.30am - 7.30am 9.00am - 2.30pm 4.30pm - 6.30pm Saturday: 6.30am - 6.30pm
Woolloongabba Railway station	Monday to Saturday, 6:30 am – 6:30 pm	Monday to Friday, 6:30 pm – 10:00 pm	24 hrs, 7 days	24 hours, 7 days, except for: Monday to Friday: 7:00am - 9:00am 4:30pm - 6:30pm
Albert Street Railway station	Monday to Saturday, 6:30 am – 6:30 pm	Monday to Friday, 6:30 pm – 10:00 pm	24 hrs, 7 days	Monday to Friday: 6.30 am – 10.00 pm Saturday 6:30am - 6:30pm
Roma Street Railway station	Monday to Saturday, 6:30 am – 6:30 pm	Monday to Friday, 6:30 pm – 10:00 pm	24 hrs, 7 days	Monday to Friday 6.30am - 7.30am 9.00am - 4.30pm 6.30pm - 10:00pm Saturday 6.30am - 6.30pm
Northern portal	Monday to Saturday, 6:30 am – 6:30 pm	For approved rail possession—80 hrs continuous work (Other extended work)	24 hrs, 7 days	Monday to Friday: 6.30 am – 10.00 pm Saturday 6:30am - 6:30pm

Worksite / Precinct	Standard hours	Extended work hours	Managed Work [^]	Spoil haulage and materials/ equipment delivery
		Monday to Friday, 6:30 pm – 10:00 pm		

[^] *Managed work – means Project Work for which either the predicted or monitored impacts meet the performance criteria at a Sensitive Place.*

- (b) *Project Works that are underground, or in a ventilated acoustic enclosure, may be undertaken at any time provided the environmental outcomes are achieved.*
- (c) *Works carried out because of an emergency that:*
 - (i) *Is endangering the life or health of a person*
 - (ii) *Is endangering the structural safety of a building*
 - (iii) *Is endangering the operation or safety of community infrastructure that is not a building*
 - (iv) *Is required to prevent environmental harm, may be undertaken outside the hours set out in Table 8.*
- (d) *The following work may be undertaken during Extended Work Hours as set out in Table 8, subject to compliance with a specific Construction Environmental Management Plan sub-plan in accordance with Condition 4:*
 - (i) *Project Works within rail corridor land*
 - (ii) *Project Works within a road reserve or busway that cannot be undertaken reasonably nor practicably during standard hours due to potential disruptions to peak traffic flows or bus operations*
 - (iii) *Project Works involving the transport, assembly or decommissioning of oversized plant, equipment, components or structures*
 - (iv) *Delivery of "in time" materials such as concrete, hazardous materials, large components and machinery*
 - (v) *Project Works that require continuous construction support, such as continuous concrete pours, pipe-jacking or other forms of ground support necessary to avoid a failure or construction incident*
- (e) *Blasting must not occur on public holidays, and is only authorised to occur during the hours of 7:30am to 4:30pm Monday to Saturday, and not on Sundays or public holidays*
- (f) *Prior to blasting events, at least 48 hours' notice must be provided to persons who may be adversely affected*

4.5 Subcontractor Management

Though CBGU may delegate environmental requirements and responsibilities to subcontractors, CBGU will remain responsible for the compliance with the endorsed CEMP.

All subcontractors are required to attend the General Site Induction where the requirements and obligations of the CEMP are to be communicated at a site and delivery level.

4.6 *Environmental Management Sub-Plans*

Section 4.6 details the sub plans to manage the environment risks as part of the site investigation, establishment, and phase two works.

4.6.1 *Community Engagement Plan*

Stakeholder Engagement will be undertaken in accordance with the *Community Engagement Plan* and/or *Communications and Stakeholder Engagement Management Plan*.

The CRR Project will attract interest from a wide range of stakeholders across the corridor and SEQ throughout the D&C phases including early work, construction, commissioning and precinct development.

CBGU staff and subcontractors will be required to undertake an induction before starting work on the project. The induction will include a specially designed community relations segment that includes:

- Community sensitivities and relevant issues with visual aids
- Communication and consultation policies and procedures
- Expected standards of behaviour when dealing with the community and landholders – grievance management procedure
- Preventing complaints
- Reward and recognition programs to incentivise desirable behaviour.

4.6.2 *Traffic Management*

Traffic management will be undertaken in accordance with the *Construction Traffic Management Plan*.

4.6.3 *Aboriginal Cultural Heritage Management*

4.6.3.1 *Background*

The Delivery Authority previously undertook an assessment of Indigenous cultural heritage within the Roma Street precinct as part of the February 2017 project change application. A search of the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) Aboriginal and cultural heritage database and register undertaken in September 2018 revealed that no new or additional known Indigenous Cultural Heritage sites or places have been recorded for project works (including the additional worksite area) since the last assessment.

The Delivery Authority's assessment noted that whilst this search is not definitive to the existence of Indigenous Cultural Heritage there would be no change to known impacts for Indigenous Cultural Heritage. Further the proponent noted that there is an increased potential for unknown finds within the additional disturbance area.

In accordance with the Aboriginal Cultural Heritage Act 2003, the Delivery Authority has advised that two Cultural Heritage Management Plans (CHMP) for the project have been prepared.

The Delivery Authority has also advised that mitigation measures for Indigenous Cultural Heritage will be provided for in the project's CHMP that will be executed prior to the commencement of works including being reviewed and approved by DATSIP. The site establishment works will be undertaken in accordance with the approved CHMP, with cultural heritage monitors being present throughout project activities.

Potential Impacts

The station precincts are in highly developed areas, thus limiting the potential for ground disturbance to uncover unidentified cultural items of significance.

The project has the potential to impact on cultural heritage values through:

- Disturbance, damage or destruction of Indigenous cultural heritage sites or places
- Potential impact on the visual setting of a heritage place due to the introduction of an inconsistent (new) built form
- Potential adverse impact on the physical fabric of a known heritage place, as a result of vibration and/or settlement caused by construction works.

Site investigation and establishment activities may identify or disturb culturally significant items, in which case, the CHMP (TeamBinder) and the Unexpected Heritage Finds Procedure should be referred to (Appendix E). Mitigation measures to address potential impacts to indigenous cultural heritage items are listed in Section 4.6.3.2.

4.6.3.2 Mitigation Measures

- Works will be conducted in accordance with the approved CHMP. In the instance that there is a discovery of suspected new finds the following procedure should be referred to:
 - a. If a material is discovered during the Project Activities that is or is reasonably likely to be a Find, the Sponsor Personnel on site will bring the discovery of the suspected Find to the attention of the Site Supervisor, who will restrict access to an area within a 3 m radius of the Find and erect such signage and/or take such other reasonable measures as are necessary to ensure that the Find will be avoided while the activities are undertaken
 - b. The Sponsor will notify the Service Provider of any suspected Finds
 - c. If the Cultural Heritage Office, having inspected the Find within the 2 Business Day period, forms the opinion that:
 - ii. The Find is not Cultural Heritage
 - A. The Cultural Heritage Officer will provide written advice to the Sponsor that the Find is not Cultural Heritage no later than 1 Business Day after the inspection
 - B. Any Project Activities that have ceased in the relevant area may resume
 - C. The process will be complete.
 - iii. The Find is Cultural Heritage, the Find will be managed under the Management Arrangements, following which Project Activities may resume.

For more detail, refer to the CHMP in TeamBinder.

- All obligations relating to monitoring, finds processes and anything else described within the Terms of Reference must be followed during site establishment works, where ground disturbance occurs.
- Pre-clearance, post clearance forms and artefact find forms records to be retained to provide a traceable management approach to demonstrate the Project's Duty of Care within the ACH Act has been met.
- Monitoring and reporting on compliance with these requirements will be the responsibility of the CBGU, in line with the broader Environmental Management Framework established for the Project.

- Appropriate induction and awareness training will be implemented to ensure obligations and processes are well understood by all Project personnel.

4.6.4 Non-Indigenous Cultural Heritage Management Plan

4.6.4.1 Background

Heritage assessments have been undertaken to identify potential impacts to current values and recommend mitigation actions to inform detailed design. Heritage assessments have identified that Roma Street, Albert Street, Woolloongabba and Boggo Road precincts have areas of outstanding archaeological potential.

Baseline Conditions

The Archaeological Management Plan (June 2019) indicated that there are 9 zones of archaeological potential at Roma Street Station, 4 at Albert Street, 13 at Woolloongabba and 4 at Boggo Road. This assessment was undertaken to identify potential impacts to current values and recommend mitigation actions to inform detailed design.

The Delivery Authority has assessed the potential impacts of the proposed changes to the project on Indigenous and non-Indigenous cultural heritage values through database searches and targeted field assessments. Targeted preliminary field assessments of the Evaluated Project and Proposed Changes footprint were completed by a Heritage Consultant to identify any changes to impact on non-indigenous heritage values. A physical inspection of the four new railway station areas (Boggo Road, Woolloongabba, Albert Street and Roma Street) was undertaken to verify values and understand current site conditions. The inspection included photography of each key feature within the assessment scope.

Key Heritage places identified as having potential for adverse impacts are listed below:

- Roma Street Precinct:
 - Transcontinental Hotel
 - Roma Street Railway Station
 - Roma Street Railyards
- Albert Street Precinct:
 - Charlotte St, Albert St, Alice St
 - Perry House/ Royal Albert Apartments/ Hotel 167 Albert Street
 - Mooney's Building 130 Mary Street
 - Early Streets of Brisbane
 - Elizabeth street between George and Albert streets
 - Charlotte Street between George and Albert Streets
- Woolloongabba Precinct:
 - St Joseph's Complex 44 Leopard Street
 - St Nicholas Russian Orthodox Cathedral 330 Vulture Street
 - The former Woolloongabba Post and Telegraph Office 765 Stanley Street
 - The Chalk Hotel 735 Stanley Street

- Boggo Road:
 - Boggo Road Gaol

The Department of Environment and Science (DES) is responsible for the management of heritage places that are identified as being of State significance by identifying and protecting them. Heritage places include buildings, structures, cemeteries, archaeological sites, gardens, urban precincts and natural and landscape features. The Brisbane City Central Business District Archaeological Plan endorsed by the Department of Environment and Science (DES), which provides direction with respect to potential archaeological significance for sites within the CBD. As Roma and Albert Street are identified as having outstanding archaeological potential in the Archaeological Assessment of Brisbane CBD, it is the responsibility of the proponent to notify DES if any items of potential archaeological significance are discovered during site establishment works.

Potential Impacts

Whilst the sites have undergone significant modification in the preceding 70 years or more, there remains the potential (low risk) for heritage artefacts to be encountered during excavation in natural ground below sub-grade.

The proposed changes to the project alignment are predicted to reduce the potential impacts of surface settlement on heritage values. The project change application describes that changes to the construction methodology (from box cut excavation to mined cavern construction) will reduce indirect construction activity traffic and dust generation impacts on heritage values in the Central area. The Roma Street station building is identified to be at slight risk of settlement-induced damage. Proximity of the site establishment activities to the local heritage sites will determine the likelihood of impact.

Appendix D specifies continuous vibration goals for heritage structures and requires that vibration does not exceed 2 mm/s PPV. Appendix F (Vibration levels of proposed equipment) demonstrates that some equipment proposed for demolition, vegetation clearing and other ground disturbance will have vibration readings higher than 2 mm/s PPV if within 15 metres of a heritage structure. Therefore, lowest vibration emitting plant and equipment will be selected.

At the Roma Street precinct, all piling activities will occur greater than 5 metres from the Roma Street heritage station building, therefore vibration exceedances from piling equipment are not envisaged. Additionally, although excavation will occur, soldier piling (typically including retaining walls) will mitigate any potential settlement of surrounding surfaces due to the method of piling used. Site-specific mitigation measures are identified in Section 4.6.4.4.

Potential impacts possible to non-Indigenous cultural heritage include:

- Destruction/ uncovering an unexpected find of culturally important site/artefact
- Loss of evidence of past occupation of an area.

Impacts can be caused by demolition works, piling works, construction of temporary buildings and amenities, and an increase in vibration associated with works, earthworks, or excavation.

4.6.4.2 Environmental Outcomes

The following environmental outcomes in relation to non-indigenous cultural heritage are to be achieved for the Project:

- Site establishment activities are managed to maintain cultural heritage values of identified places of historical value, within and adjacent to the construction worksites.

- Site establishment activities are managed to maintain scientific values of any archaeological places uncovered during Project works.
- New infrastructure is sympathetic in design to the aesthetic significance of cultural heritage places in the vicinity.

4.6.4.3 Performance Criteria

- Site investigation and establishment activities do not adversely impact on places of historical heritage value directly, or indirectly through excessive dust deposition, vibration, or settlement
- A Heritage Management Plan is prepared and approved for all places of State or local historical heritage significance, if unable to achieve the construction vibration goals in Condition 11 Table 3 (Appendix D) for the proposed works, prior to these works commencing.
- Any archaeological places newly discovered and uncovered are appropriately managed
- If any archaeology is encountered during site establishment works, CBGU will stop work in accordance with the Environmental Protection (EP) Act, and the Queensland Heritage Act 1992. Any archaeological artefacts that are discovered require reporting to DES and are protected for a period of 20 days. DES will assess the discovery to determine if it is an important source of information about Queensland's history.

The procedure for identification of any archaeological items (if uncovered) will be based on relevant investigative tasks as outlined within the Archaeological Investigations Guideline (2013):

1. An archaeological consultant will be 'on call' during the geotechnical investigation, to review any archaeological items encountered
2. Reporting: All archaeological investigations must be properly documented. Reports can be deposited with the department. This process helps inform future work and ensures information about our history is retained for future generations
3. All archaeological investigations will contain contingency provisions in case results indicate the initial assessment is inaccurate.

4.6.4.4 Mitigation Measures

Site-specific mitigation measures outlined within the Coordinator-General's change report – whole of project refinements 2019 are as follows:

- Albert Street station: The proposed changes to construction methodology for Albert Street station and proposed demolition of 142 Albert Street are not anticipated to increase impact on adjacent heritage-listed places, when compared to the evaluated project. Settlement impacts at the identified heritage places are predicted to be below 5 mm, and surface vibration is not expected to exceed 0.5 mm/s, which is below the heritage threshold of 2 mm/s
- Roma Street station: The proposed underground Roma Street station realignment will result in an increase in maximum surface settlement from 20-25 mm to 0-50 mm at the heritage listed Roma Street station building. As the existing Roma Street station building is identified as having a 'Slight Risk' of damage, the proponent proposes to undertake settlement monitoring in accordance with the Outline Land Management Plan (a sub-plan of the OEMP). In order to avoid impacts to heritage buildings, Vibration levels must be below 2 mm/s PPV, therefore equipment exceeding this must be used as per the modelling results which indicate specific distances from the heritage building.

- Continuous vibrational monitoring undertaken during vibration generating activities at key heritage places where predicted to exceed the heritage building damage threshold in accordance with modelling
- Implementation of management measures to avoid the risk of construction activities damaging the existing fabric of the building or platform of the Roma Street Heritage Station
- State and locally listed heritage places are not to be used as access routes to geotechnical investigation zones or for the storage of any project related equipment or materials beyond essential requirements for worksites.

General recommendations for all heritage places are:

- Ensure that any impacts to the properties are avoided or minimised through site establishment location selection
- Archival (photographic) recording before any accepted impacts occur
- Where required, temporary fencing or other barricading during construction works to minimise risk of inadvertent impacts.

Specific measures for heritage sites near to the works and potentially subject to vibrational impacts:

- Site investigation and establishment works are to be managed to ensure the identified values of such places are maintained. Impacted places of historical cultural heritage value will be managed in accordance with the Heritage Management Procedure.
- Archaeological test pitting is not required to be conducted unless there is an unexpected archaeological find. Under the Archaeological Management Plan, a specific works procedure is to be implemented for unexpected archaeological finds (refer Appendix E)
- To protect places of historical heritage from excessive dust deposition, vibration and settlement, investigation works are to implement noise and air quality management measures. Management measures applicable to the site establishment activities will include hand-held attended monitoring at the start of our activity, on a monthly basis and in response to a complaint
- Routine daily site inspections are to include assessment of effectiveness of any exclusion fencing or signage protecting cultural heritage values if implemented.

4.6.5 Noise and Vibration Management Plan

4.6.5.1 Background

Construction noise and vibration was modelled in the Request for Project Change Report 1 (RfPC-1) and subsequently a further qualitative assessment of noise and operational impacts was completed as part of RfPC-2. Additional modelling was conducted for areas where the project alignment has changed significantly. This section provides a summary of the predicted impacts from which the mitigation measures were developed at sensitive receptors. These parameters are used as a baseline for all site establishment works, along with Coordinator-General imposed conditions outlined in Section 4.6.5.4. Refer to *EIS Change Report 2018: Section 4.3.3* for additional information.

Potential Impacts

Noise and vibration impacts will be generated as a result of site investigation, establishment and phase two works including items listed in section 2. There is potential for scheduling of certain works outside general working hours to minimise the impacts on the traffic networks and operation of adjacent transportation services. Therefore, the potential for some noise impacts at night on surrounding areas has the potential to disturb sleep and cause nuisance, these works will be managed via the *Community Engagement Plan* and/or *Communications and Stakeholder Engagement Management Plan*.

The site investigation works will be located within close proximity to sensitive receptors, including residential properties. Noise and vibration impacts will be generated by drill rigs and utility excavations. There is potential to schedule certain works outside general working hours to minimise the impacts on the traffic networks and operation of adjacent transportation services. Estimated noise and vibration levels at various setback distances from the investigative works have been identified.

The full extent of demolition at Roma Street, Albert Street, and Boggo Road precincts is expected to commence in September 2019. The piling works will commence in December 2019, further project works will commence subsequent to these activities at differing times at each precinct, see section 2 for further details.

Potential noise and vibration impacts may be generated as a result of the following key activities:

- *Site establishment*: clearing of the site adjacent to Hotel Jen, earthworks, construction of a hardstand, fencing and hoarding
- *Internal demolition*: soft strip-out works within the buildings, conducted within the retained façade of the buildings
- *Building demolition*: works involving the removal of the building structures
- *Piling Construction*: works involving the staged installation of piles using excavators and piling rigs (boring)
- *Shaft Excavation*: works involving the removal of spoil material from the shaft and shaft box
- *Stockpile management*: works involving the collection of building debris and sorting into stockpiles and loading material onto haul trucks and haul truck movements
- *Ground remediation*: levelling of the site and compaction of fill
- *Finishing works*: potential construction of new drainage infrastructure.

Noise emissions have been predicted for each of these construction activities except the internal demolition stage, which will be conducted within the façade of the buildings and is therefore not expected to have significant external noise and vibration impacts.

There is a low risk for vibration causing settlement-induced damage from modelling of site establishment, particularly surrounding heritage structures located at the Roma Street precinct, as identified in Section 4.6.4.1. The proximity of the site establishment activities to these heritage structures determines the likelihood of impact. Condition 11 Table 3 in Appendix D specifies continuous vibration goals for heritage structures and requires that vibration does not exceed 2 mm/s PPV. Equipment will be selected based on their vibration emissions, piling and clearing works will remain greater than 15 metres from the heritage structures to avoid settlement damage.

The site establishment works will be located within close proximity to sensitive receptors, including residential properties. The site establishment works are expected to generate the most noise and vibration impacts (particularly from piling activities) and all latter stages of construction are expected to generate a considerably

lower level of construction noise as much of the material will be pre-fabricated off site and effectively put together on site rather than constructed. The site establishment works will be scheduled during standard working hours, however there is potential for scheduling of certain works outside of general working hours to minimise the impacts on the traffic networks and operation of adjacent transportation services. Demolition and piling works would not be scheduled outside of standard hours due to noise and vibration impacts on surrounding areas having the potential to disturb sleep and cause nuisance if not managed. Truck movements are predicted to comply with the Project's noise and vibration goals at all worksites. Estimated noise and vibration levels at various setback distances from the investigative works are identified in Appendix F.

Noise management strategies and mitigation measures outlined in Section 4.6.5.5, are to be implemented during the geotechnical investigation works to ensure the environmental performance criteria noise goals outlined within Section 4.6.5.3 are achieved.

Proposed geotechnical borehole diameters are planned to be 100 mm. Post drilling and excavation the surface is envisaged to be either reinstated to the original surface level, or the installation of surface level pit. Proposed geotechnical borehole locations, additional information and station precinct maps are in Appendix L.

Based on modelling data without mitigation, the site establishment and phase two works, the following properties would experience *potential noise exceedances* at the following locations:

- Roma Street Precinct:
 - Daytime and night time airborne construction goal exceedances:
 - Roma Street (Abbey Apartments))
 - Queensland Police Headquarters and Watch House
 - St Alban Catholic Church
 - Supreme and District Courts
 - Wickham Terrace Residential by up to 3dB(A).
- Albert Street Precinct:
 - 70 Mary Street (Mantra on Mary)
 - 108 Albert Street (Oaks Festival Towers), and the associated ground floor commercial tenancies.
 - Previously identified receptors along Albert Street towards Elizabeth Street would also experience ground borne noise and vibration impacts.
- Woolloongabba Station:
 - Daytime and night time airborne construction goal exceedances:
 - Gabba Central Apartments
 - St Nicholas Russian Orthodox Cathedral
- Boggo Road and Southern Portal:
 - Daytime and night time airborne construction noise goals would be exceeded at:

- Railway Terrace sensitive receptors
 - Sensitive receptors north of Park Road Railway Station (Merton Road to Elliot Street)
 - The Leukaemia Foundation ESA Village
 - The PA Hospital
- Ground-borne noise goals would be exceeded at:
- Sensitive receptors north of Park Road Railway Station between Merton Road and Elliot Street
 - The Leukaemia Foundation ESA Village.

Careful noise management strategies and mitigation measures outlined in Section 4.6.5.5 are to be implemented during the site establishment demolition, clearing, piling works to achieve the environmental performance criteria noise goals (Section 4.6.5.3). Appendix F detail the SPL and vibration levels of equipment to be used.

4.6.5.2 Environmental Outcomes

The following environmental outcomes in relation to noise and vibration are to be achieved for the site investigation and establishment works:

- Site investigation and establishment activities are designed, planned and implemented to maintain human health and wellbeing, to the extent reasonable and practicable
- Site investigation and establishment activities generally are designed, planned and implemented to maintain daily patterns of activity, and to minimise sleep disturbance at night
- Site investigation and establishment activities are managed to avoid vibration-related human discomfort and structural damage on all properties and sensitive plant and equipment.

4.6.5.3 Performance Criteria

The following performance criteria must be achieved throughout the site investigation and establishment works:

- Project works are designed, planned and implemented to achieve the noise goals specified in Section 4.6.5.1 to the extent reasonable and practicable
- Site establishment works must be designed, planned and implemented to achieve the vibration goals specified in Section 4.6.5.1 to the extent reasonable and practicable
- Potentially Directly Affected Persons must be identified and consulted regarding the potential impacts and the mitigation measures proposed to address the impacts. These persons will be identified utilising existing information and additional predictive data in accordance with the *Community Engagement Plan* and *Communications and Stakeholder Engagement Plan*
- Mitigation measures must be developed in consultation with potentially Directly Affected Persons on a 'case by case' basis
- Agreed mitigation measures must be included in a mitigation register and implemented prior to undertaking construction works where appropriate.

4.6.5.4 Coordinator-General Conditions

The following Imposed Conditions must be achieved for the Project, Condition 11 - Construction Noise and Vibration and Condition 12 - Property Damage, see Appendix D for full details of these conditions.

4.6.5.5 Mitigation Measures

Noise

- As per Condition 11 (f) Initiate on-going and early consultations with potentially Directly Affected Persons in accordance with *Community Engagement Plan* and/or *Communications and Stakeholder Engagement Management Plan* to notify them of the proposed works and to determine suitable mitigation measures and implement the CEMP to achieve the outcomes developed in consultation with the potentially Directly Affected Persons
- Operators of construction equipment to be made aware of the potential noise/ vibration problems and of techniques to minimise emission through a continuous process of operator education. This will include regularly training staff and subcontractors (i.e. via toolbox talks) through to using equipment in ways to minimise noise
- Enclose equipment that generates higher levels of noise, subject to confirmation of noise levels in accordance with modelling
- Provide noise attenuation screens as required by modelling
- Maintain plant and machinery in good working order, in accordance with CPB CMS management system and operate mobile plant and power tools in a quiet and efficient manner
- Demolition and piling works to occur within the period of 6.30 am to 6.30 pm Monday to Saturday (excluding public holidays). Works to occur outside of those hours will need prior assessment and approval
- Scheduling noisy work such that it will coincide with high levels of ambient noise, for example during peak hour traffic periods, so that construction noise is partially masked
- Substitution of noisy demolition practices with quieter ones, for example, using saw cutting in place of breaking
- Lowest noise/vibration emitting plant and equipment that can economically undertake the work should be selected, wherever possible
- Machines/ tools found to produce excessive noise/vibration compared to industry best practice should be removed from site or stood down until repairs or modification can be made; if repairs or modification are not possible then a suitable replacement should be found
- During piling works, work will only take place during dayshifts, with hoardings/noise walls to be in place prior to piling
- Removal of glass panels as complete panes, rather than breaking during removal
- Plan construction to undertake the following measures:
 - Early installation of acoustic screens around potential noise sources
 - Using the quietest plant and equipment reasonably expected to undertake each component of work

- Minimise the coincidence of noisy plant and equipment working simultaneously near sensitive receptors.
- Use of pre-fabricated materials for construction where possible
- Provide noise attenuation screens, hoarding or other portable noise barriers in accordance with modelling. Noise controls including hoardings/noise walls will be considered based on specialist advice and incorporated into the precinct designs. The effectiveness of these treatments will be demonstrated through noise monitoring required by this plan.
- Switch plant and equipment off when not in use
- Locate generators and other 'fixed' sources as far as practical from adjacent receptors. Procure 'low noise' generators and other 'fixed' sources. Fit engine covers to all plant
- Fit effective residential class silencers to all engine exhausts
- Based on predictive modelling and drill equipment specifications, provide CBGU Stakeholder and Communications Team with notification of scheduled high noise construction activities prior to allow for pre-notification to Directly Affected Persons in accordance with *Community Engagement Plan* and/or *Communications and Stakeholder Engagement Management Plan*.
- Undertake inspections to identify any sources of unnecessary or excessive noise for which there are no registered mitigation measures
- Undertake noise monitoring at the start of high sound power activities, and in response to a complaint with hand held monitoring apparatus
- Project Works predicted to, or monitored as, generating noise levels more than 20dBA are authorised to occur only when advance notification and consultation has been undertaken with Directly Affected Persons and where mitigation measures have been developed on a 'case by case' basis and are incorporated in a mitigation register. These works can occur between the hours of 7:00am and 6:00pm Monday to Friday, with a respite period between 12:00 noon and 2:00pm each day
- Where all reasonable and practicable measures are implemented and noise and vibration impacts are unavoidable and significant, respite measures may be used. The provision of respite periods involves scheduling work during periods when people are least affected to minimise exposure
- In accordance with the *Community Engagement Plan* and/or *Communications and Stakeholder Engagement Management Plan*, if necessary:
 - the environment team will set up a noise monitor to measure noise levels, determine if they are within operational requirements and inform the stakeholder if they are compliant.
 - if a neighbouring stakeholder is severely affected by noise above the performance criteria and therefore constitutes being a Directly Affected Person, the CRT team will work with the environment and construction teams to consider an individual noise treatment program, which may include changes to construction methodology/timing, architectural treatments or, as a last resort, temporary relocation.

Vibration

- Selection of equipment to minimise vibrational impacts, where possible.

- Vibration levels at locations with potentially vibration sensitive building contents have been modelled and found to be well below the vibration compliance guideline for damage of less than 3mm/s in some instances as low as 0.5 mm/s, of note the Princess Alexandra Hospital (Sensitive building contents) vibration levels during the site establishment works were modelled at 0 mm/s
- Where the works in a locality have potential to exceed the vibration goals nominated:
 - Surveys conducted as part of the EIS and Project Change Notices identify residential properties and other places especially sensitive to sleep disturbance (e.g. hospitals, nursing homes and child care centres)
 - Demolition activities will have mitigation measures developed in consultation with Directly Affected Persons (this process is detailed below)
 - When required surveys will be conducted in the locality to identify residential properties and other places especially sensitive to sleep disturbance (e.g. hospitals, nursing homes and child care centres)
 - Where required conduct surveys in the locality to identify and determine the specifications for building equipment known to be sensitive to vibration, such as computers, microscopes, surgical equipment
 - Implement practical and reasonable mitigation measures that would achieve the environmental outcomes or achieve alternative outcomes developed in consultation with Directly Affected Persons. These include:
 - Substitution of alternate demolition methods
 - Consideration of materials handling measures including the use of damped receptacles and avoiding the dropping of material from heights.
- Ensure ground vibration levels transmitted from operating items of plant in the vicinity of buildings do not exceed levels that are close to the lower level of human perception inside the premises or cause structural damage to the buildings and other structures, through:
 - Utilise existing baseline condition measurements already undertaken by CRRDA before commencement of the works.
 - Progressively monitoring during the works to confirm conformance with approval conditions.
- Where ground-borne vibration monitoring indicates either the vibration goals relative to human health and wellbeing would be exceeded, inform and consult, with the CRRDA Community and Stakeholder Engagement Team, the Directly Affected Persons to develop mitigation measures as per the *Property Damage Management Plan*, and *Community Engagement Plan* and/or the *Communications and Stakeholder Engagement Management Plan*.

4.6.6 Air Quality Management Plan

4.6.6.1 Background

Albert Street is a fully developed urban environment within the Brisbane CBD. The Woolloongabba Precinct is a remediated and cleared site open to the surrounding urban environment on all sides. Roma Street and Boggo Road precincts are operational rail facilities. A qualitative assessment of the potential air quality impacts associated with the proposed changes to the project was completed to determine which changes would potentially result in material impacts. Further quantitative assessment (dispersion modelling) was

undertaken for the locations that material air quality impacts were considered likely, in particular worksites/precincts.

Updated dispersion modelling was undertaken to assess the site investigation phase air quality impacts at the following worksites:

- Woolloongabba station
- Roma Street station (including the works for the integration of the Inner Northern Busway (INB))
- Southern Portal and Boggo Road station (sites were assessed cumulatively as the worksites would be close together and works would occur at the same time).

Fugitive dust emissions may result from the following site investigation and establishment activities:

- Drilling
- Demolition
- Excavating spoil
- Loading material on trucks
- Rock breaking and piling
- Wind erosion from disturbed paces
- Wheel generated dust from machinery on unpaved surfaces.

Air quality impacts during investigations are predicted to be consistent with the evaluated project. For the worksites of Southern Portal and Boggo Road station, the assessment initially identified potential for increased air quality impacts due to a filter fabric enclosing the site to control dust emissions no longer being used in the changed project. In this case, the control measures were reviewed and tested in an additional mitigation scenario to adequately mitigate potential air quality impacts.

Construction air quality impacts for CRR Project were originally assessed in the *EIS in Volume 3, Technical Report 8 – Air Quality*. A further assessment of air quality impacts specifically for the site investigation works was completed. This assessment used a qualitative approach to determine any potential material changes to the predicted air quality impacts detailed in the 2011 EIS and RfPC-1. This section provides a summary of the baseline conditions and predicted impacts from these assessments from which the mitigation measures were developed. Refer to *EIS Change Report 2019: Section 8.3* for additional information.

Baseline Conditions

The key sensitive receptors potentially impacted by the works include local residents, transient local community members and public transport passengers. Each of these receptors are currently subject to existing air emissions.

Background air quality information shown in the previously approved RfPC's and summarised in Table 9 was established based on data from four monitoring stations (Cannon Hill, Brisbane CBD, South Brisbane, Rocklea). The data indicates that background concentrations are well below their respective air quality goals within the CRR Project Imposed Conditions. Since the CG approval for the coach terminal relocation (August 2018), baseline air quality monitoring has commenced at the Roma Street area.

Table 9 Baseline Air Quality and Goals

Air Quality Indicator	Averaging Period	Units	Goal	Background Concentration
Total Suspended Particulates (TSP)	1 year	µg/m ³	90	24
Particulate matter (PM ₁₀)	24 hours	µg/m ³	50	17
	1 year	µg/m ³	25	14.5
TSP	24 hours	µg/m ³	80	26
Deposited Dust	30 days	mg/m ² /day	120	60

Potential Impacts

Close consultation with sites adjacent to the precincts will allow individual property mitigation measures to be tailored with consideration of actual dust measurements and particular circumstances at the time. Standard dust mitigation measures are likely to mitigate any potential dust impacts to surrounding sensitive receptors to acceptable levels.

The site investigation and establishment activities may increase potential for air quality impacts primarily due to dust generation from demolition works, removal of pavement and pavers, movement of equipment, vegetation clearing, earthworks, material haulage resulting in increased truck movements and wheel and wind generated dust from any exposed areas and vehicle emissions. Other impacts to air from construction result from vehicle and plant emissions. Any potential impacts will be temporary and minor in nature.

During the site investigation and establishment period, the following sources have the potential to emit dust and pollutants and impact air quality:

- Worksite establishment and demolition activities
- Spoil removal and replacement
- Construction of buildings and amenities
- Installation of piling
- Wind erosion from disturbed locations
- Wheel-generated dust from truck movements on unpaved surfaces
- Power source emissions from construction equipment, generators and other plant.

4.6.6.2 Environmental Outcomes

- Nuisance from dust, odour and emissions arising from site establishment activities is minimised at nearby sensitive receivers
- Nominate the monitoring and reporting requirements in relation to air quality
- Manage the impact on the local community and sensitive receptors in terms of air quality from site establishment works
- Monitor the effects of management and mitigation measures.

4.6.6.3 Performance Criteria

The following performance criteria must be achieved throughout the site establishment works:

- Emissions are within the air quality goals as set out in the Coordinator- General’s Imposed Condition 13: Air Quality
- Minimise complaints from dust generation
- Where emissions are predicted to exceed the air quality goals, mitigation measures are designed and implemented to mitigate the impacts for nearby sensitive receivers.

4.6.6.4 Coordinator-General Conditions

The following Imposed Condition must be achieved for the Project, Condition 13 - Air Quality see Appendix D for full details of these requirements.

4.6.6.5 Mitigation Measures

The following mitigation measures may be implemented to achieve the nominated environmental outcomes and performance criteria. Additional or different mitigation measures may be applied to achieve the environmental outcomes and performance criteria.

- At investigation and establishment work sites, monitor meteorological conditions, particularly wind speed and direction. When adverse meteorological conditions are experienced (Weather warnings and wind speeds above 40 km/hr (considering the sheltered urban nature of the sites) to be reported to the Site Supervisor and Construction Teams) at worksites, such as dry windy conditions, take measures to avoid impacts of unreasonable dust or odour on adjacent properties. Such measures may include:
 - Modification of methods
 - Increase in dust suppression measures.
- When no other reasonable or practical measure is available, cessation of work until the meteorological conditions improve and the environmental outcome can be achieved
- If monitoring shows exceedances during site investigation and establishment works, additional mitigation measures may be required, such as limiting dust generating activities during dry, windy conditions, increasing watering rates during dry periods, and undertaking targeted consultations with potentially Directly Affected Persons.
 - In accordance with the *Community Engagement Plan* and/or *Communications and Stakeholder Engagement Management Plan*, environment team members will set up a measuring device to monitor air quality for that area.
 - Other potential solutions such as increased water truck patrols or house/vehicle washing to mitigate the dust will be investigated and implemented if feasible.

Dust

- Site specific dust mitigation methods have been tested to identify adequate mitigation of potential air quality impacts. The control methods and factors are identified in Table 10.

Table 10 Control Methods for Site Specific Investigation and Establishment Activities

Precinct	Activity	Control Method	Control Factor
Southern Portal / Boggo Road	Drilling	Water spray	70%
Roma St and Albert St	Demolition	Water spray	50%
Woolloongabba and Roma Street Station	Drilling	Acoustic enclosure, water spray	91%
All Precincts	Vehicle Movements	Water spray	70%

- Ensure appropriate dust controls are used for any dust generating activities to ensure dust from project works does not move beyond worksite boundaries. Mitigation measures may include:
 - Managing dust-creating works according to meteorological conditions
 - Water sprays and covering loads of material transported from the worksites.
- Visually monitor vehicle movements on a regular basis to: prevent queuing in streets prevent queuing vehicles idling
- The site shall be visually monitored daily for excessive dust generation and corrective actions undertaken to minimise dust where possible
- Where appropriate undertake ambient odour inspections for potential odour-generating activities (e.g. excavation of contaminated soils) on a daily basis
- During piling works, hoardings will be installed as appropriate for dust control (acting as wind breaks), rock piling pads will be used, with appropriate onsite water control measures
- All complaints regarding dust are to be dealt with in accordance with the complaints management procedure as outlined in the *Community Engagement Plan* and/or *Communications and Stakeholder Engagement Management Plan*. (Section 4.6.1).

Exhaust Emissions

- Manage the movement of vehicles to avoid queuing near residential receivers
- Adopt traffic management procedures in accordance with the *Construction Traffic Management Plan* (Section 4.6.2) to avoid vehicles idling for excessive periods if required to queue to enter the worksite
- Where feasible, collect and direct exhaust emissions from stationary plant away from sensitive receivers
- For stationary plant and equipment, ensure all diesel motors are fitted with emission control measures and that these are regularly maintained to manufacturers' specifications.

Greenhouse Gases

- Maintain equipment and vehicles in good working order to maximise the fuel efficiency of equipment
- Procure energy efficient equipment, when appropriate
- Use mains electricity where practicable to minimise the use of generators.

4.6.7 Visual Amenity and Lighting Management Plan

4.6.7.1 Background

Predicted Impacts

During the site establishment works of the Albert Street, Boggo Road, Roma Street and Woolloongabba Precincts the following sources have the potential to impact the visual amenity and lighting within and around the precinct footprint:

- Worksite establishment and demolition activities
- Spoil removal and replacement
- Relocation of utilities and protection of utilities within site area and access/egress points
- Construction / establishment of site buildings, sheds, fencing and amenities
- Lighting towers used to illuminate night works
- Vegetation clearing.

Excessive and offensive lighting, as well as unmanaged impacts on local residents and businesses due to construction of the Project have the potential to impact the visual amenity within and around the Project. Construction will be predominantly completed in the standard hours, thus reducing the volume and hours lighting will be required. The lighting can be managed and incorporated into the design to minimise any impacts.

Vegetation removal is required during site establishment activities therefore reducing landscape quality of the precincts. Vegetation clearing will occur due to new road alignments, inclusion of spoil handling area, site offices and parking, for site vehicle access and to install the noise walls/hoarding. Noise controls including noise walls/hoardings will be considered based on specialist advice and incorporated into the precinct designs. The effectiveness of these treatments will be demonstrated through noise monitoring required by this plan.

An increase in signage, demarcation and vehicles along the shared use zones will diminish the character of the precincts. During site establishment the visual amenity will be temporarily reduced, however the final precincts have been designed with urban design objectives and integrated into the surrounding urban environment. Integrated landscaping will improve the general site appearance.

4.6.7.2 Environmental Outcomes

The following environmental outcomes in relation to visual amenity and lighting are to be achieved for the site establishment works:

- Construction activities minimise and mitigate impacts on the visual and landscape environment
- Surface construction works do not extend beyond designated worksite boundaries.

4.6.7.3 Performance Criteria

- Impacts of construction works, including the worksite and spoil handling facilities, on existing visual amenity are minimised through the design and siting of screens and barriers, plant and equipment, buildings and other structures, and lighting and telecommunications infrastructure
- The construction worksite is rehabilitated progressively, and as soon as practicable, following construction works

- Construction lighting is designed, constructed and operated to comply with the relevant standard such as AS4282-1997: Control of the obtrusive effects of outdoor lighting
- Avoid nuisance from construction lighting on sensitive receivers and onto nearby roads, pedestrians, cycle paths and parklands
- Surface construction works do not extend beyond designated worksite boundaries.

4.6.7.4 Mitigation Measures

The following advisory mitigation measures may be implemented to achieve the nominated environmental outcomes and performance criteria. Additional or different mitigation measures may be applied to achieve the environmental outcomes and performance criteria.

Visual Amenity

- Integrate urban design objectives with the changes in the precinct
- Traffic management plan for the construction phase to include for safe pedestrian access
- Design roof and select materials which do not produce glare for the residences
- Careful integration of signage into the precinct and ensure suitable wayfinding
- Hoardings will be installed around site boundaries during piling works in accordance with modelling
- Ensure that the design and siting of construction worksites considers topography, vegetation, scale, character of construction and construction materials, proximity to surrounding sensitive land uses and the duration of its use
- Provide noise barriers and hoardings around construction worksites to mitigate the views of construction works. Where appropriate, these are to incorporate landscaping and urban design measures to minimise the visual impact of the barriers and should be regularly maintained.

Lighting

- Where possible, external night time construction activities and traffic movement within the worksites will be minimised
- Program and schedule the construction phase of works to minimise night-time impacts of lighting, including from traffic movement, on residential properties
- The use of existing light poles or small mobile lights will be used during site establishment works, when nightworks are required
- To minimise light spill, the temporary lighting is proposed to be focused on project elements and points of interest
- Ensure all operational lights are located under a roof structure, as far as is practicable, to minimise spill up to the residences
- Project lighting to be designed in accordance with the relevant standard such as AS 4282-1997: Control of the obtrusive effects of outdoor lighting and the Rail Infrastructure Manager's requirements e.g. Queensland Rail's Lighting Standard for Railway Stations guidelines
- Construction phase works to minimise night-time impacts of lighting on residential properties where practicable. Place hoarding and visually impermeable barriers around worksites to minimise views of

stockpiles and construction activities, particularly where worksites are visible to residential or recreational users

- Where appropriate, use directionally-controlled, shielded lights that are mounted at a sufficient height to minimise light spill to surrounding properties, maintain safe driving conditions for motorists on adjacent roads and minimise impacts on local fauna
- Weekly inspections of lighting during night works are to be conducted to ensure that construction lighting has been installed and operated in accordance with the relevant standard such as AS4282-1997.

Landscape

- Where possible, adopt pruning and selective trimming of mature trees in preference to their removal
- Where possible, fence and protect trees of particular significance that fall within construction worksites and laydown areas
- A suitably qualified arborist should be consulted regarding the management of mature vegetation to be retained
- During worksite establishment and subsequent construction, maintain daily site inspections of protective measures for designated significant trees and vegetation, and temporary visual barriers and hoardings for damage or graffiti
- Restore, rehabilitate and where appropriate, enhance open space and public areas disturbed or damaged by construction as soon as practicable following construction
- Rehabilitation works provide for:
 - Where practicable, replacement of cleared mature trees with plantings of advanced individuals
 - Regrading of the surface to facilitate surface runoff without erosion, and to create a landform suitable for use consistent with City Plan designations
 - Reinstatement of paths, including the bicycle path, street or park furniture, signage equipment and lighting
 - Reinstatement of grassed areas and paved surfaces where practicable
 - Introduction of interpretive signage relating to cultural heritage, historic heritage and way finding measures.

4.6.8 Water Management Plan

4.6.8.1 Background

Baseline groundwater, surface water and flood condition and impacts for CRR Project were originally assessed in the EIS April 2019 in Volume 3, Technical Report 7 - Hydrology. Subsequently, the Delivery Authority has commissioned baseline surface water quality and groundwater monitoring for the CRR Project. Baseline surface and ground water monitoring will be carried out over a 12-month period from August 2018 to August 2019.

Potential Impacts

It is unlikely that activities will have significant impacts on either groundwater or surface water environmental values. Results from proposed water monitoring holes (refer Table 11) will be analysed and reviewed by a suitably qualified person (SQP).

Site establishment activities will consist of the relocation of utilities and services, demolition of structures, piling, excavation and material haulage of waste generated. Piling and excavation activities have the potential to intercept groundwater at the following locations:

- Boggo Road:
 - Groundwater level expected at RL 22 metres
 - Piling depth of 15 – 21 metres
- Albert Street:
 - Groundwater level expected at RL 0.0 metres (natural ground level of RL 4.55 metres)
 - Piling depth of 11 – 13 metres
- Roma Street:
 - Groundwater level expected at RL 1.5 metres (natural ground level of RL 13 metres)
 - Piling depth of 4 metres
- Woolloongabba:
 - Groundwater level expected at RL 5.0 metres
 - Piling depth of 5 metres

If groundwater is intercepted during piling activities, the water, will undergo testing for contamination in accordance with Appendix G – Contamination Management Procedure. Depending on the quality of groundwater, the water may be captured on site in a bunded area, treated if required, and if appropriate re-used for dust suppression purposes on site (in accordance with the Soil and Water Management Procedure – Appendix H). If surplus non-contaminated water requires discharge, this will be undertaken in accordance with the Dewatering and Discharge Procedure (Appendix I).

Disposal of groundwater and other waste water can include direct release to sewer. The *Water Supply (Safety and Reliability) Act* was amended in 2011 to provide for the release of trade waste and seepage water to sewer. This requires consultation and agreement with Queensland Urban Utilities (QUU) and key considerations are the quality and quantity of flows discharged. The QUU sewer network requires sufficient capacity and the level of contaminants needs to be assessed to not impact the downstream sewage treatment process.

Provision should be made for water storage and alternative disposal should maintenance be required on the downstream QUU infrastructure or outlet pipework and any of the monitoring/ sampling equipment. Water quality standards and flow rates should be agreed with QUU. It is assumed that discharge to the sewer network can occur at Woolloongabba precinct.

During site establishment works there is the potential for sources of pollutants to enter waterways from litter, spills, heavy metals, oils and hydrocarbon and chemicals/ hazardous substances and from surface run-off from tracks, demolition works, stations and paved surfaces. Intense and/or frequent rainfall may also have the potential to mobilise sediment from exposed soil areas which can lead to increased sedimentation of local

waterways. Surface water quality will be regularly monitored and, if necessary, managed in accordance with Appendix H. Results from proposed water monitoring bore-holes will be analysed and reviewed by a suitably qualified person (SQP) in accordance with the: Contamination Management Procedure (Appendix G) and reported in the Monthly and Annual Reports as detailed in Section 7.5.

4.6.8.2 Environmental Outcomes

Surface water

- Construction activities are managed in accordance with the Dewatering and Discharge Procedure (Appendix I) to avoid the transportation of contaminants that might otherwise be released to waters
- Environmental values of surface waters immediately downstream of the construction worksite are not adversely affected by the site establishment works during and post construction.

Groundwater

- Groundwater inflow to the construction worksite is minimised
- Groundwater quality surrounding the precinct is generally comparable with preconstruction levels
- Discharge of groundwater from the site establishment works does not adversely impact the environmental values of receiving waters.

Flood management

- The construction worksite is designed to provide for safe evacuation of worksites and to avoid disruption of evacuation routes for adjacent properties in the event of flooding.

4.6.8.3 Coordinator-General Conditions

The following Imposed Conditions must be achieved for the Project; Condition 15 - Water quality and Condition 16 - Water Resources, see Appendix D for further details.

4.6.8.4 Mitigation Measures

The discharge points for waters are nominated as ponded waters/basins and water treatment plants, these will be sampled as per Dewatering and Discharge Procedure (Appendix I), only waters that satisfy the discharge criteria will be discharged to the nearest stormwater drain.

Table 11 identifies the proposed groundwater monitoring wells that will be implemented at Albert Street and Woolloongabba precincts during site investigation works. Monitoring of these wells will continue throughout site establishment works

Table 11 Proposed Monitoring Wells

Location	ID	Depth (m BGL)	Purpose
Woolloongabba Precinct	Monitor 2	12	Groundwater monitoring at Woolloongabba station
	Monitor 3	12	
	Monitor 4	12	
	Monitor 5	12	

Location	ID	Depth (m BGL)	Purpose
Albert Street	Monitor 8	15	Groundwater monitoring at Albert Street Station
	Monitor 9	40	

- Develop and implement storage and handling procedures for fuels, chemicals and other hazardous materials, including procedures to prevent or contain spills
- Ensure that accidental spills are cleaned up and appropriately remediated to avoid contamination of groundwater seepage. This will be completed in accordance with Contamination Management Procedure
- Spill kits and SDS registers to be maintained onsite in areas where chemical storage or handling occurs;
- Prior to commencement of works, develop and implement practices and procedures for waste handling, storage and disposal of slurry and potential contaminated material.
- Surface drainage measures are implemented at construction worksites and work areas to effectively manage stormwater runoff
- Surplus dirty water collected on site will be re-used for dust suppression as per the Soil and Water Procedure
- Groundwater is discharged in accordance with the Dewatering and Discharge Procedure
- Stockpiles of excess material are to be located away from drainage areas and flood affected areas
- During routine daily site inspections and immediately following any rainfall event causing runoff from the worksite, a visual assessment is to be conducted of all drainage areas within and adjacent to the worksite to determine the presence of litter, sediment, chemical plumes or other toxicants
- Implement erosion and sediment controls (ESC) in accordance with the Manage Soil and Water Procedure
- Immediately following any rainfall event causing runoff from the worksites, a visual inspection of all erosion and sediment control measures and bunding is to be conducted to assess any damage or maintenance requirements and to review effectiveness
- Plant risk assessments to be completed for all machinery bought to site to ensure that the machine is functional, free of damage and / or contaminants.

4.6.9 Land Management Plan

4.6.9.1 Background

Baseline land conditions for the sites were originally assessed in the *EIS in Volume 2, Chapter 6 – Soils, Topography and Geomorphology and Chapter 7 – Land Contamination*. Roma, Albert, and Boggo Road precincts are considered low-medium risk for land contamination. However, standard land contamination procedures will be followed for all activities within these precincts and within the rail corridor as identified in Section 4.6.9.5. Further assessment was carried out in the *EIS in Volume 3, Technical Report 4 – Soils, Geology and Geomorphology*. This included the following:

- Desktop review of soil types along the new alignment to determine:
 - Soil erosivity

- Determine the potential presence of Potential Acid Sulphate Soils (PASS) or Actual Acid Sulphate Soils (AASS).
- A review of previous contaminated land assessments completed for the Evaluated Project
- A review of the Environmental Management Register (EMR) and Contaminated Land Register (CLR) was undertaken for the proposed changed alignment which were outside of the PSI footprints
- Preliminary Site Investigations (PSI) completed for the Evaluated Project footprint and areas for the Proposed Changes.

Further preliminary contaminated land investigations have subsequently been conducted, specifically for the Roma Street area. This investigation provided a preliminary indication of the contamination status of the precinct to facilitate investigation/construction/redevelopment works required to be undertaken. A Suitably Qualified Person conducted the investigation and preparation of the Contaminated Land Investigation Document in accordance with the Environmental Protection Act 1994, Queensland Auditor Handbook for Contaminated Land. This investigation consisted of historic and desktop information. Contamination assessments will also be undertaken for the Roma Street, Albert Street, Boggo Road and Woolloongabba precincts as part of these site investigation works.

- Roma Street precinct is considered low-medium risk. Assumed contamination includes:
 - The BTC Towers are listed on the EMR for petroleum products and oil storage, potential for hydrocarbon contamination
 - The adjoining Roma Street Parklands (the former Roma Street rail yards) has been remediated and redeveloped but remains on the EMR, the parklands has a containment cell housing contaminated material approximately 200 m north of the proposed Roma Street Station.
- Albert Street precinct is considered low-medium risk. Assumed contamination includes:
 - Properties within Albert Street adjacent to the Albert Street Station are listed on the EMR for petroleum products and soil storage
 - There is a possibility of intersecting with uncontrolled fill within the CBD
 - Demolition of buildings may uncover asbestos material
 - There is potential to intersect with Acid Sulfate Soil.
- Boggo Road precinct is considered low risk. Assumed contamination includes:
 - Arsenic residue in rail corridor from historical herbicide/pesticide spraying
 - The PA Hospital (adjoining rail corridor) listed on the EMR for petroleum products and oil storage
 - QR buildings and structures may contain asbestos
 - Potential for temporary increase in groundwater drawdown and potential increase in contamination of groundwater from worksites and surface water interaction. This risk was identified as low through the project EIS and the site investigation and establishment works are being conducted (in part) to enable further groundwater monitoring as recommended. The site investigation and establishment is not predicted to require dewatering.

Potential Impacts

Loss of sediment offsite into waterways may occur during excavation and stockpiling of soil materials. The site is drained through council stormwater and release of sediment laden waters could see impacts to the Brisbane River where the stormwater is discharged.

While the risk is generally low, ASS may be present in localised zones (ARUP, 2018). There is potential to intersect with ASS at the Albert Street precinct. At the other underground station locations, including Boggo Road, Woolloongabba and Roma Street, the potential for exposure of ASS from excavation is considered low. ASS disturbance could result from a number of construction-related activities including:

- Excavation of ASS material
- Sediment movement into waterways and overland flow paths
- Downward loading pressure on unconsolidated sediments from stockpiles, placement of fill material and the placement of structures such as footings, piers, piles and road and rail infrastructure construction
- Groundwater drawdown
- Changes for surface and subsurface flow regimes and pathways.

A desktop review was undertaken to identify additional potentially contaminated sites that may be directly or indirectly impacted by the Proposed Changes. Additional land parcels were identified within and adjacent to the changed alignment that were listed on the EMR as a result of registered notifiable activities. Notifiable activities are prescribed under the *Environmental Protection Regulation 2008* and are those that have been identified as being likely to cause land contamination. The 2011 EIS identifies 2,972 land parcels listed on the EMR. Of these, 506 are located in the study corridor. A summary of potential contamination at the precincts is identified in Table 12.

Table 12 Potential Land Contamination at Precincts

Area	Land Impacts
Roma Street Station	Limited environmental assessment conducted as part of the works presented in the CRR Geotechnical Investigation Report (DTMR, March 2018) reported elevated concentrations of PAH and total recoverable hydrocarbons (TRH) in soils along with elevated concentrations of TRH in groundwater. The notifiable activity for this site remains as petroleum products/oil storage and railway yards.
Albert Street Station	Additional sites nominated on Mary Street and Charlotte Street for minor road works and Elizabeth Street for construction of northern access to the new station. These land parcels are not listed on EMR.
Woolloongabba Station	Stage two contaminated land investigation completed for this site identified soils having elevated concentrations of heavy metals, total recoverable hydrocarbons, polycyclic aromatic hydrocarbons, per- and poly-fluoroalkyl substances (PFAS) and asbestos above the adopted NEPM assessment criteria for protection of human health and the environment. Groundwater is also locally impacted with heavy metals. Remediation of this site is underway with the intention to remove the site from the EMR. The notifiable activity for this site now includes railway yards, hazardous contaminant and petroleum products or oil storage.

Area	Land Impacts
Boggo Road	Additional land parcels on Peter Doherty Street, Joe Baker Street and Boggo Road (road reserve). These land parcels are not listed on the EMR.

4.6.9.2 Environmental Outcomes

- Site investigation and establishment works minimise soil erosion and sedimentation and avoid adverse impacts on the environmental values of receiving waters
- Site investigation and establishment works minimise the impacts of ground settlement from construction works
- Site investigation and establishment works avoid or minimise environmental and public health risks associated with disturbance of potential ASS encountered during construction works
- Site investigation and establishment works do not impact on the environmental values of the Brisbane River and other waterways.

4.6.9.3 Performance Criteria

- Site investigation and establishment works do not result in the mobilisation of soil or water contaminants, including sediment movement beyond the boundaries of the worksite. Soil erosion within the worksite is to be rectified as soon as practicable after a rainfall event to prevent the release of sediment offsite
- Runoff from the worksite complies with the environmental objectives established in the Environmental Protection (Water) Policy 2009 (EPP (Water))
- ASS is avoided, or if intercepted, is managed to avoid adverse impact to environmental values, infrastructure, equipment, personnel or the public.

4.6.9.4 Coordinator-General Conditions

The following Imposed Conditions must be achieved for the Project, Condition 18 - Erosion and sediment control and Condition 19 - Acid sulphate soils, refer to Appendix D for full detail of these conditions.

4.6.9.5 Mitigation Measures

Erosion and Sediment

To inform detailed design and planning, undertake soil sampling at worksites as part of further geotechnical investigations, to identify and characterise vulnerable soils in areas of surface works. Characteristics of interest include confirmation of soil landscapes, soil depth, presence of fill and soil chemical properties

- Manage erosion and sediment in accordance with the guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and TMR’s Technical Standard MRTS52 Erosion and Sediment Control
- CBGU to reduce the risk of erosion during site establishment works by:
 - Avoiding disturbance of vulnerable surface and subsurface soils
 - Minimising worksite clearing and the extent and duration of soil exposure
 - Identifying proposed spoil storage locations at establishment sites

- Diverting clean waters around disturbed surfaces and spoil storage locations
- Monitoring the effectiveness of installed control measures
- Progressive stabilisation and revegetation of disturbed areas, using stored topsoil where practicable.
- Any damaged erosion and sediment control measures will be repaired or replaced following rainfall events in line with the Erosion and Sediment Control Procedure
- Stockpiles located away from drainage areas and flood affected areas. Locate spoil placement sites away from creek banks and provide adequate bunding to prevent sediment run-off into waterways or stormwater drains or inundation in a 1 in 5-year flood event
- Erosion and sediment control measures must be maintained in good working order, with any damaged or ineffective measures repaired or replaced following rainfall events or otherwise as required.

Acid Sulphate Soils

- Characterisation of the ground in areas of potential disturbance is essential to quantify the quantity of sulphides and the neutralisation required in order to mitigate risk of AASS production. This will be done in accordance with the Acid Sulphate Soils Procedure
- Low level of treatment – Category L for disturbances of ASS requiring treatment with less than 0.1 tonnes of fine CaCO_3 , the management should ensure that:
 - Soils are treated with an amount of neutralising agent that will counter their existing plus potential acidity (up to the equivalent of 0.1 tonnes of fine CaCO_3 , e.g. 5 x 20-kilogram bags of fine aglime, available from hardware or agricultural supply stores)
 - Site run-on, runoff and infiltration is managed (any bunding must be made from non-ASS materials).
- Medium level of treatment – Category M for disturbances of ASS requiring treatment with 0.1 to 1 tonne of fine CaCO_3 the management should ensure that:
 - Soils are treated with an amount of neutralising agent that will counter their existing plus potential acidity (up to the equivalent of 1 tonne of fine CaCO_3)
 - The neutralising agent is thoroughly mixed with the soil
 - Site run-on, runoff and infiltration is managed (any bunding must be made from non-ASS materials).

Contaminated Land

- For sites where contamination is known or suspected to occur onsite (i.e. listed on the EMR) or is unexpectedly encountered during excavation/construction activities refer to the Contamination Management Procedure for mitigation measures
- Design to minimise and limit ground disturbance
- During the first disturbance of potentially odorous soils, implement reasonable and practicable measures to avoid or mitigate and manage impacts of odours on adjacent properties. Such measures may include:
 - Ensuring clean cover materials (e.g. clean fill) is on hand to immediately cover odorous spoil materials that are resulting in off-site impacts

- Identifying and determining the potential for odour impacts at off-site sensitive receivers based on preliminary information on the scale and nature of any known contamination, the distance from the contamination area to sensitive receivers, and the prevailing meteorological conditions
 - Conducting works with odorous soils when wind directions are unlikely to affect sensitive receivers
 - Covering odorous, excavated soil stockpiled on a construction site or a spoil placement site to reduce odour impacts.
- Observations during any soil disturbance for the presence of fill or soil staining. If suspect material is encountered, sampling is to be undertaken to verify any contamination. Suspect material to be stored in sealed container or covered stockpile, flagged as a no go area
 - Any surplus soil or fill material required to be removed from site, must have verification soil testing completed prior to removal. Where soils are contaminated, obtain a soil disposal permit prior to removal off site
 - Implement measures to minimise the exposure of humans and the environment to potentially contaminated soils during excavation activities, in accordance with guidance from the SQP
 - Weed management and control practices are to be implemented throughout the site investigation precincts to minimise the risk of spread of weed species into, out of the project area and between construction sites. This will be in accordance with the Weed Management Procedure

4.6.10 Waste Management Plan

4.6.10.1 Background

The sites are located in Brisbane Metro area where there are numerous waste collection and recycling opportunities available for waste management. The CBGU *Construction Traffic Management Plan* identifies the application of shake down pits or other approved facilities at site entry points to minimise the transfer of waste and dust from the site to other roads. Requirement for the establishment of waste management and materials recycling arrangement, including minimisation of waste creation, recycling of used materials as far as possible and responsible disposal of waste (as per the *Environmental Protection Act 1994*) is also identified.

Potential Impacts

The site investigation works are expected to generate minimal waste products. The primary waste stream expected is slurry generated from drill works. Waste from utility excavations is expected to include overburden, this will be contained using hydro-excavation equipment. Contamination investigations will occur in conjunction with the geotechnical drilling. Contaminated soil will be disposed offsite in accordance with a Disposal Permit.

The site establishment and phase two works are not expected to generate significant waste products and any associated impacts would generally occur through poor waste management actions. The primary waste stream expected is demolition waste, site establishment waste, spoil and scraps or waste from contamination encountered. The primary impacts include:

- Dust generation from inappropriate handling and disposal of excavated material
- Soil and water contamination from material spills during handling and haulage
- Soil and water contamination from inappropriate handling of solid and liquid waste and material separated for recycling, re-use and recovery

- Soil and water contamination from inappropriate handling of waste materials from a site listed on the EMR.
- Increased prevalence of vermin, insects and pests
- Inefficient use of resources and inappropriate procurement of resources.

4.6.10.2 Environmental Outcomes

- Activities, including demolition, are designed planned and implemented to minimise the generation of waste materials
- Storage, handling, transportation and disposal of waste materials generated during establishment works are carried out to avoid breach of environmental legislation, cause potential environmental harm and or adverse impacts on communities
- Reuse and recycling of waste materials generated by site establishment activities is optimised, for example spoil from excavation at Woollongabba has the potential to be used as fill in other areas on the site

4.6.10.3 Performance Criteria

- Site investigation and establishment activities are conducted in accordance with the following:
 - Waste management principles (avoid, reduce, reuse and recycle) and sustainable disposal strategies are implemented
 - Targets to recover and re-use waste, for all classes or categories of waste
 - Taking all reasonable and practicable steps to minimise the impacts of handling and disposal of waste at the worksites, and at the disposal sites.
- Hazardous waste is handled and disposed of in accordance with the approved disposal methods in the Waste Management Procedure, the QLD Soil Management Guidelines, and Workplace Health and Safety Queensland
- Waste generated is managed in accordance with the requirements and recovery targets set out in the Queensland Governments Waste - Everyone's Responsibility Queensland Waste Avoidance and Resource Productivity Strategy (2014- 2024)
- Inert and non-hazardous demolition wastes will be recycled at a minimum of 90% as per the ISCA requirements for the project. This recycling will be managed through the demolition contractors (via contracts)
- Any regulated and contaminated waste to be disposed of in accordance with the Environmental Protection Act 1994.

4.6.10.4 Mitigation Measures

- Site management to ensure that there are adequate waste bins for the site area
- Waste materials to be separated on site and recycled wherever possible
- Allocate sufficient waste storage for the entire worksite
- Remove all waste and/or unnecessary equipment and facilities

- Inductions to cover site rubbish disposal. No rubbish to be left / dumped on site by CBGU staff and/or subcontractors
- Train CBGU staff and subcontractors to identify opportunities for reuse, where practicable
- Potential soil and water contamination from sites listed on the EMR will be disposed offsite in accordance with a Disposal Permit (see Appendix J for Environmental Constraints Mapping)
- Consider using materials and products that have a recycled content wherever cost/performance competitive, and where environmentally preferable to the non-recycled alternative
- Identify and implement strategies for the reuse of waste products generated during site establishment works. Where reasonable and practicable, provide for the re-use of excavated or salvaged materials in construction material including:
 - Segregated and labelled bins for different waste streams
 - Transfer kerb and pavement materials (concrete, asphalt) to crushing and recycling plants
 - Chip and mulch vegetation cleared for the Project and re-use mulched material for landscaping purposes when feasible
 - Collect empty oil and fuel drums and other containers for return to licensed recycling facilities by a licensed waste contractor.
- Waste unable to be re-used, recycled or recovered must be disposed of in appropriately licensed commercial landfill sites and sewage treatment systems
- Investigate the availability of treated wastewater, stormwater runoff or groundwater inflow for site activities such as dust mitigation, wash-down uses or watering landscape works
- Ensure that sufficient loading / unloading space is provided at the worksite to allow waste materials to be sorted for recycling and reuse
- Ensure the movement of hazardous materials and regulated wastes occurs at non-peak times to minimise the possibility of traffic conflicts and associated risks
- Transportation of hazardous wastes, regulated wastes and contaminated soils must be undertaken by a suitably licensed waste contractor and in accordance with relevant Australian standards, legislative requirements and guidelines
- Safety Data Sheets (SDS) are required to be kept at the storage location of all waste hazardous materials and dangerous goods
- Prepare and implement spill response measures in relation to waste hazardous materials and dangerous goods procedure
- Any waste materials suspected of containing asbestos will be disposed to an appropriately licensed landfill by a certified asbestos waste contractor, in accordance with the Asbestos Management Procedure
- Ensure provision of bins at worksite common areas, fitted with lids and serviced prior to being filled to capacity
- Routine daily site inspections are to include monitoring capacity of waste storage facilities and arranging collections as required, monitoring for the presence of vermin or odours in association with waste storage or handling and monitoring for the presence of litter and general worksite tidiness.

4.6.11 Nature Conservation Management Plan

4.6.11.1 Background

The objectives of this Nature Conservation Management Plan (NCMP) are to achieve the environmental outcomes stated in the OEMP and the CEMP through the implementation of site-specific mitigation measures. It also:

- Nominates the Project’s monitoring and reporting requirements in relation to flora and fauna (Section 7) as part of the overall project reporting requirements
- Ensures controls and procedures are implemented during site investigation and establishment activities to avoid, minimise or manage potential adverse impacts to fauna and flora within and adjacent to the Project;
- Ensures appropriate measures are implemented to comply with all relevant legislation; and
- Monitors the effects of management and mitigation measures.

A flora and fauna monitoring programme be developed and implemented at each worksite where appropriate so that the Project-related impacts on local stakeholder and the environment can be avoided, or minimised and managed, see Appendix K for Vegetation Retention Maps.

4.6.11.2 Environmental Outcomes

The following environmental outcomes in relation to nature conservation are to be achieved for the Project:

- Ecological, habitat and natural asset values of open space areas near Project Works are maintained
- No net loss of habitat occurs as a result of the design and construction of the Project
- Construction activities do not cause the introduction of spread or pest species; and
- General Biosecurity Obligations must be met pursuant to the *Biosecurity Act 2015*.

4.6.11.3 Performance Criteria

The following performance criteria must be achieved throughout construction of the Project:

- Habitat for significant vegetation removed during construction is restored and rehabilitated to the extent reasonable and practicable, consistent with a rehabilitation plan developed in consultation with BCC
- Clearing permits or and other relevant permits or approvals for vegetation clearing are obtained from DES as required, and clearing is undertaken in accordance with the conditions of these permits or approvals;
- Pest species declared under the *Biosecurity Act 2015* are not spread or introduced during construction;
- Rehabilitation and landscape plans incorporate species appropriate for the surrounding landscape and infrastructure, and, where practicable, uses endemic plants;
- Species management plans should be developed where required and vegetation clearing and construction is undertaken in accordance with the conditions of approved plans and permits; and Contractor to meet requirements and obligations under the Biosecurity Act 2015.

4.6.11.4 Mitigation Measures

- The following approvals and exemptions have been identified for the works:

- The works are located outside of the high-risk trigger area for Protected Plants and the vegetation and flora assessment identified a single endangered, vulnerable or near threatened (EVNT) species located within proximity to the works area. The EVNT species is a single Plunkett Mallee (*Eucalyptus curtisii*) which has been planted as part of site landscaping and will be retained for the works. As such a clearing a clearing permit and exempt clearing notification is not required.
- Under the Planning Regulation 2017, the works are exempt for clearing native vegetation (Schedule 21, Part 1, section 1, Clause 14(b)).
- The Coordinator General’s Project Change report (June 2019) project approvals indicate that the works are exempt from Natural Assets Local Laws 2003 with offsets developed in consultation with Brisbane City Council. Consultation with Council has resulted in an agreed approach to offsets based on the site clearing plans.
- Clearing several trees will occur within the Woolloongabba Priority Development Area. There is an overall exemption under Schedule 1 of the Woolloongabba Development Scheme being for the development of a utility installation. This exemption relates to all aspects of development. Disturbance to significant vegetation and habitat during construction will be minimised, by clearly marking and mapping vegetation to be retained and marking boundaries of work areas. In particular, disturbance to and the loss of significant mature trees, including figs, must be minimised.
- As part of the Project induction process, it will be communicated to construction staff that all native flora and fauna is protected and must not be intentionally harmed and must not be handled except with a relevant permit.
- Clearance or trimming of native vegetation to that necessary for construction to avoid unnecessary impacts will be minimised, to reduce rehabilitation costs and minimise exposed surfaces that could lead to erosion and sediment issues.
- Where reasonable and practicable, construction site infrastructure will be located, such as site offices, vehicle access and parking, material storage and clearing areas for plant and equipment, away from large trees and their drip zones.
- Site management procedures will be implemented to avoid or minimise potential for harming native fauna and respond to incidents when fauna enter construction worksites.
- A qualified fauna spotter/catcher will be present prior to and during the removal of any habitat trees to capture and relocate any fauna that is disturbed. The fauna spotter/catcher will be registered with DES and hold applicable licences and permits.
- A suitably qualified and experienced person will undertake a pre-construction fauna survey within and around work sites to identify any fauna.
- Lighting associated with night works will where possible incorporate fittings to limit dispersion of light outside the target area and avoid the use of mercury lamps, to limit insect associated problems such as encouraging fauna to enter close to construction activities and traffic areas. Where safety considerations allow, lighting will not extend up into the canopy of any surrounding trees.

5 Training

5.1 Environmental Induction

All CBGU staff, subcontractors and visitors to worksites must attend general induction training that covers general environmental management requirements, site-wide controls and site-specific and work specific risks and mitigation measures. At a minimum, the inductions should cover the below information:

- Relevant legislation
- General environmental duty
- Non-Indigenous cultural heritage
- Key sensitive areas
- Water quality requirements
- Erosion and sediment control
- Contaminated land and hazardous substances
- Waste removal
- Incidents including definition, management and reporting requirements
- Environmental management requirements
- Cultural heritage & cultural heritage duty of care
- Duty to notify
- Environmental No Go Areas
- Air, noise and vibration requirements
- Flora & fauna
- Spill management procedure
- Requirements of other agencies
- Staff code of conduct and behaviour

The site induction should also include general duties under contractual requirements and measures established in the CEMP.

An induction register is maintained by CBGU to record induction attendance for all staff, subcontractors and visitors.

5.2 Environmental Training

CBGU developed specific environmental and cultural heritage training required for various roles and personnel as part of their CEMP (refer to Training Management Plan). A training register is to be maintained by CBGU to record attendees at the training sessions.

5.2.1 Toolbox talks

Toolbox talks are used as a method of raising awareness and educating personnel on issues related to all aspects of construction works including environmental issues. Toolbox talks are used to ensure environmental awareness continues throughout the construction works and remains relevant to the particular environmental risks and values at each site and stage of construction.

Toolbox talks will be tailored to specific environmental issues relevant to upcoming works and will address relevant environmental issues including, but not limited to:

- Hours of work, including management strategies to be implemented for out of hours works

- Noise minimisation measures
- Erosion and sediment control
- Emergency and spill response
- Construction traffic and parking
- Cultural heritage
- Weed management
- Dust control
- Flora and fauna and threatened species protection
- Sustainability measures.

Other matters that will be addressed include:

- The day's activities and potential impacts of same on the environment
- Safe work practices
- Environmental protection practices
- Work area restrictions
- Activities that may affect the works
- Hazards or other information that may be relevant to the day's work.

6 Incidents and Emergencies

6.1 Incident Notification

The immediate response to all incidents is to make the area safe and undertake measures to prevent further environmental harm. The Environment and Sustainability Manager and Project Director should be notified immediately in the event of an environmental incident.

Incidents that occur during the Project include a non-compliance event (NCE) with an Imposed Condition including the CEMP or OEMP, a validated complaint from stakeholders of an environmental nature that is not authorised by Imposed Conditions, or an incident that causes or threatens unlawful material or serious environmental harm.

All CBGU and subcontractor personnel will report all environmental incidents and near misses to their supervisor and notify CBGU’s Environmental Team. If the incident is classed as an NCE, CBGU in consultation with the Delivery Authority will complete all reporting requirements for the CG, DES and any other regulatory agencies who require notification. The incident or near miss will be recorded using processes outlined in this CEMP, the minimum requirements for reporting incidents are in Section 6.1.3. The initial non-conformance report to be used to investigate and describe a non-conformance has been provided as Appendix C.

6.1.1 Notification to DES and other Regulatory Agencies

The Project has obligations under the *Environmental Protection Act 1994 (Qld)* (EP Act) to notify the Chief Executive, Department of Environment and Science (DES) of incidents that cause or threaten unlawful 'material or serious environmental harm' as defined by the EP Act. Notification must be made to DES within 24 hours of becoming aware of a NCE. The Project also has obligations to other Regulatory Agencies, DTMR, Queensland Rail (QR) and other stakeholders depending on the scale and type of incident.

6.1.2 Notification to CG, Delivery Authority and Environmental Monitor

The Imposed Conditions impose obligations to notify the Environmental Monitor and the CG in writing of a NCE in relation to the Imposed Conditions (including the CEMP or COEMP as relevant). The reporting timeframe for notification to the CG and Environmental Monitor is 48 hours after becoming aware of a non-compliance event. Section 6.1.3 has been developed to detail the minimum requirements for the timely management, classification and reporting of environmental incidents.

6.1.3 Internal Incident Notification

Internal Incident Notification shall occur in accordance with the CPB Contractors Environmental Management System, Manage and Report SHE Incidents Procedure. Where necessary, the Project Director or delegate will also notify the joint venture parent companies, CPB Contractors Pty Ltd, BAM International Australia Pty Ltd, Ghella Pty Ltd and UGL Engineering Pty Ltd

6.2 Incident Types

Incidents include, but are not limited to:

- Any breach of the legislation or an approval condition or the Co-ordinator General Conditions (NCE)
- Unauthorised harm or desecration to Aboriginal objects or Aboriginal places

- Unauthorised damage or contrary interference to threatened species, endangered ecological communities or critical habitat
- Unauthorised damage or destruction to any State or locally significant relic or Heritage item
- Unauthorised discharge beyond the approved water criteria from sediment basins or other containment devices
- Unauthorised clearing or clearing beyond the extent of the Project footprint
- Unauthorised habitat damage
- Failure of temporary ESC resulting in downstream impact
- Contamination of waterways or land
- Contamination of groundwater
- Uncontrolled fire
- Unauthorised dumping of waste
- Spills of fuel, oil chemical or other hazardous material (>20 l).

6.3 Incident Classification and Procedure

In addition to the requirements under the OEMP, all CBGU and subcontractor personnel will report all environmental incidents and near misses in accordance with processes in Section 7.5.3 and Figure 5.

The CPB CMS procedure - Synergy Event Classification Matrix is used to classify Safety Health and Environment Incidents, this matrix detailed in Appendix M.

6.4 Incident Prevention Management

Key effective incident prevention is undertaken by continual environmental inspections and monitoring for the duration of commissioning. During construction works the following preventative strategies will be implemented:

- Daily informal visual inspections of active work sites
- Completion of the Project's Environmental Checklist Timely close out of corrective actions as identified in the Project's Environmental Checklist
- Prompt maintenance and repairs identified by daily visual checks of corrective actions as identified in the Project's Environmental Checklist
- Environmental training identified in the CEMP as being required
- Environmental audits as identified in the CEMP.

Preventative or corrective actions will be identified in response to an environmental incident, during daily visual inspections or through the Project's Environmental Checklist (Appendix C).

6.5 Incident Investigation

Where a significant incident (Appendix M) has occurred, an incident investigation must be undertaken, with the following elements to be considered:

- Identify the extent and cause of the incident
- Identify the immediate corrective actions taken to prevent the impact from continuing including the personnel responsible for undertaking these actions
- Identify corrective actions to remediate the impacted area including the personnel responsible for undertaking these actions
- Undertake a root cause analysis
- Assess risk of reoccurrence
- Identify procedural deficiencies
- Implement investigation recommendations from root cause analysis or procedure deficiencies
- Report findings to the Delivery Authority

Where appropriate, provide any training that may assist staff and subcontractors in preventing reoccurrence of an event of a similar nature in future.

6.6 Complaint Management

All complaints are to be dealt with in accordance with the complaints management procedure outlined in the *Community Engagement Plan (CEP)* and/or *Community and Stakeholder Engagement Plan (CSEP)* to ensure complaints received by the community and stakeholders are managed appropriately and consistently, as per the Complaints flow diagram below.

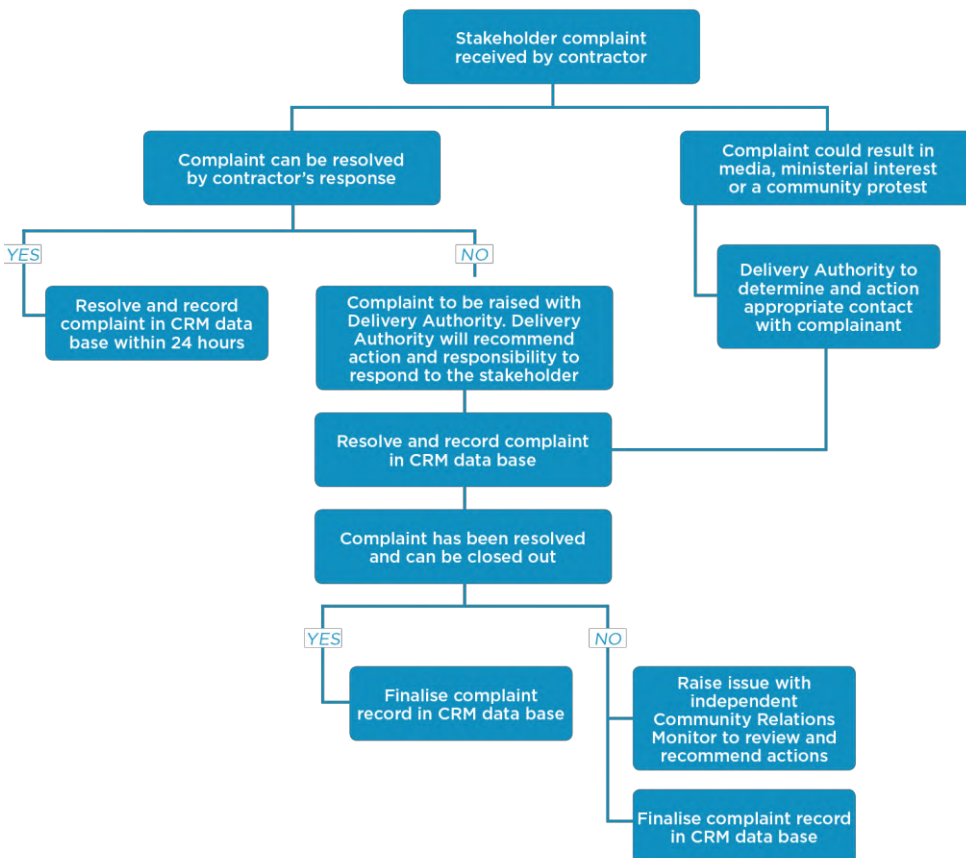


Figure 4 Complaints management process

7 Inspections, monitoring and auditing

This section outlines the compliance processes that have been adopted by CBGU to ensure compliance with the Coordinator-General Conditions and any other legislative requirements.

7.1 Environmental Inspections

CBGU will undertake environmental inspections to develop and evaluate the effectiveness of environmental controls.

The following inspections will be undertaken for the duration of the construction works.

Table 13 Project Environmental Inspection Requirements

Type of Inspection	Frequency	Form of Record
Informal inspection of active work sites	Daily	Diary Notes
Formal inspection of active work sites	Weekly	Project Environmental Checklist
‘Serious Environmental Harm’, ‘Material Environmental Harm’ as defined by the Environmental Protection Act 1994 (Qld).	Incident	Incident Report
Non-conformance	Event	Non-conformance Report

The project’s Environmental Checklist and Non-conformance report has been provided as Appendix C.

7.2 Environmental Monitoring

Environmental performance will be monitored by the CBGU for each environmental element throughout the Project phases. Monitoring will address performance in relation to the environmental outcomes and the performance criteria, and implementation of the mitigation measures needed to achieve the environmental outcomes.

The specific monitoring actions for each environmental element have been outlined in the relevant sub-plan.

Broadly the requirements for monitoring during the construction phase may include:

- Collection, measurement and analysis of specified data at the locations and frequencies required by the sub-plans according to recognised and accepted scientific methods by suitably qualified people
- Daily visual environmental site inspections at each worksite, including inspections of environmental control measures and environmental impacts of construction activities
- Targeted monitoring of key parameters in response to an incident or failure to comply with the Imposed Conditions, the CEMP or one of the sub-plans.
- Closest sensitive receptors at the beginning of activities that possesses higher potential to generate impact (noise, vibration, dust)
- To validate noise/vibration predictions
- Properties or addresses identified in the deed or other approvals.

All monitoring equipment is to be calibrated regularly and the results of the calibrations recorded. All monitoring and sampling undertaken is to be in accordance with applicable guidelines or Australian Standards. All analytical testing performed is to be undertaken in accordance with National Association of Testing Authorities (NATA) approved procedures or if this is unavailable, be performed to the most relevant standard. New technologies or materials may be used provided standards and outcomes are equal to or exceed current recognised standards.

7.2.1 Baseline Monitoring

The initial baseline assessment documented in the EIS is based on previous assessments, and the EIS phase desktop and selected field studies. The additional site investigations to be undertaken will provide additional information for use in determining project-specific performance criteria and an indication of the likelihood of achieving compliance with the existing environment conditions.

To obtain adequate baseline data, monitoring was carried out for at least twelve (12) months (where practical) commencing in August 2018. In addition, this baseline monitoring will continue, where not impacted by the site establishment activities, and will be used to also monitor performance.

Baseline monitoring, completed for each relevant environmental element has been further detailed in the respective sub-plan.

7.3 Auditing

Auditing will be undertaken to verify compliance with the Imposed Conditions, the CEMP and associated sub-plans. The audits will include review of prior audits and the impacts of associated corrective actions. The auditing requirements for the project have been outlined in Table 14.

Table 14 Project Auditing Requirements

Description	Frequency	Parties Involved	Reporting Requirements
AS/NZS ISO 14001 Audit	Annually	External	Environmental Monitor, CBGU
CG Imposed Conditions	Monthly*	Internal	Environmental Monitor, CBGU
CEMP and Sub-plans	Monthly*	Internal	Environmental Monitor, CBGU

* These monthly audits can be satisfied through weekly inspections or document review.

External auditing will be undertaken by an environmental auditor independent of the Cross River Rail (TSD) package in accordance with ISO19011:2003 – Guidelines for Quality and or Environmental Management Systems Auditing.

The CBGU and Environmental Monitor must maintain appropriate audit records, and these are to be reported on in the Monthly and Annual Reports.

7.4 Corrective Actions

Corrective actions must be undertaken where monitoring or validated complaints indicate the environmental outcomes or Imposed Conditions are not achieved in relation to particular works, either because the

performance criteria have not been met, or mitigation measures have not been implemented. Where corrective actions become necessary, the works that do not achieve the environmental outcomes or meet the Imposed Conditions must cease until the corrective actions have been developed and implemented.

Corrective actions must be developed by CBGU in consultation with the Delivery Authority and Directly Affected Persons where deemed necessary. These corrective actions may be developed using a root cause analysis approach to ensure the underlying causes area addressed and not just the presenting causes.

Corrective actions must be initiated by CBGU as soon as practicable after it becomes evident, through monitoring or validated complaints, that the environmental outcomes for the relevant works are not being achieved.

CBGU must demonstrate that the corrective actions have been implemented and appropriately communicated within their organisation (and supply chain, if relevant) to prevent reoccurrence.

7.5 Reporting

7.5.1 Monthly Report

To ensure compliance with Coordinator-General Condition 6 and where relevant the OEMP, CBGU will prepare and submit a monthly report within 6 weeks from the end of the month to the Delivery Authority, which includes the following information:

- Monitoring data required by the Imposed Conditions or CEMP undertaken for the period and, where required, an interpretation of the results;
- A schedule of all validated monitoring results. Validated monitoring results must be produced for the preceding month's monitoring programme (OEMP p 33);
- Details of any non-compliance event, including a description of the incident, resulting effects, corrective actions, revised construction practices to prevent a recurrence, responsibility and timing;
- Reporting of complaints, including the number of complaints, description of issues, responses and corrective actions, maintaining appropriate confidentiality (in accordance with Condition 9(f)(vii)).

A copy of the Monthly Environmental Report must be submitted to the Authority and the Environmental Monitor and be provided to the Coordinator-General and posted on the project website in accordance with the Imposed Conditions.

7.5.2 Annual reporting

In accordance with the OEMP, the Annual Environmental Report must be prepared by an independent (OEMP p 34), suitably qualified person, endorsed by the Environmental Monitor (OEMP p 34) and submitted to the CG no later than 31 July in any year during the construction phase. The report must address the previous 12 months activities (1 July to 30 June) and must be posted on the Project website for the duration of the construction phase.

The Annual Environmental Report must include (OEMP p 34):

- An evaluation of environmental management in relation to achievement of environmental outcomes, satisfaction of the performance criteria or where not satisfied, implementation of mitigation measures. The evaluation must extend to the effectiveness of mitigation measures for particular environmental elements and localities

- An overview and evaluation of the implementation of the complaints handling and response process and procedure. The evaluation, in part, must refer to the number of complaints and the significance of the issues raised in complaints, together with closing out of the complaints to the satisfaction of the complainants
- An overview and evaluation of the environmental record achieved during the reporting period. The environmental record must address, in part, the number and significance of environmental incidents and non-compliances with the CG's Imposed Conditions and CEMP
- An evaluation of the effectiveness of the community information and engagement system for the Project. The evaluation must include, in part, the system for advanced notice of construction works and the availability of relevant, comprehensible information about the programme of works and the nature, scale and intensity of work packages
- A summary of key issues and significant reoccurring issues for community relations. The overview must include an analysis of each issue to identify any common cause, successful mitigation measures and opportunities to resolve and close out such issues
- Identification of aspects for improvement in environmental management and community relations, and proposed actions to achieve such improvements).

7.5.3 Incidents and Non-Compliance Event Reporting

Environmental incidents meeting the criteria of an NCE shall be notified verbally (OEMP p33) as soon as practical and in writing within 48 hours of becoming aware of an incident occurring to the Development Authority. Notification will generally be undertaken by the Environment and Sustainability Manager or a member of the CBGU environment team. Additional notification of the incident to the relevant authorities, EM and parent companies will also be undertaken as required (see Figure 5).

Should the IEM or Delivery Authority not be contactable by telephone, within 5 minutes of the incident occurring, CBGU will contact them by:

- a. leaving a voice message;
- b. sending a text message;
- c. sending an email; and
- d. making direct contact with nominated back-up personnel in person or by telephone.

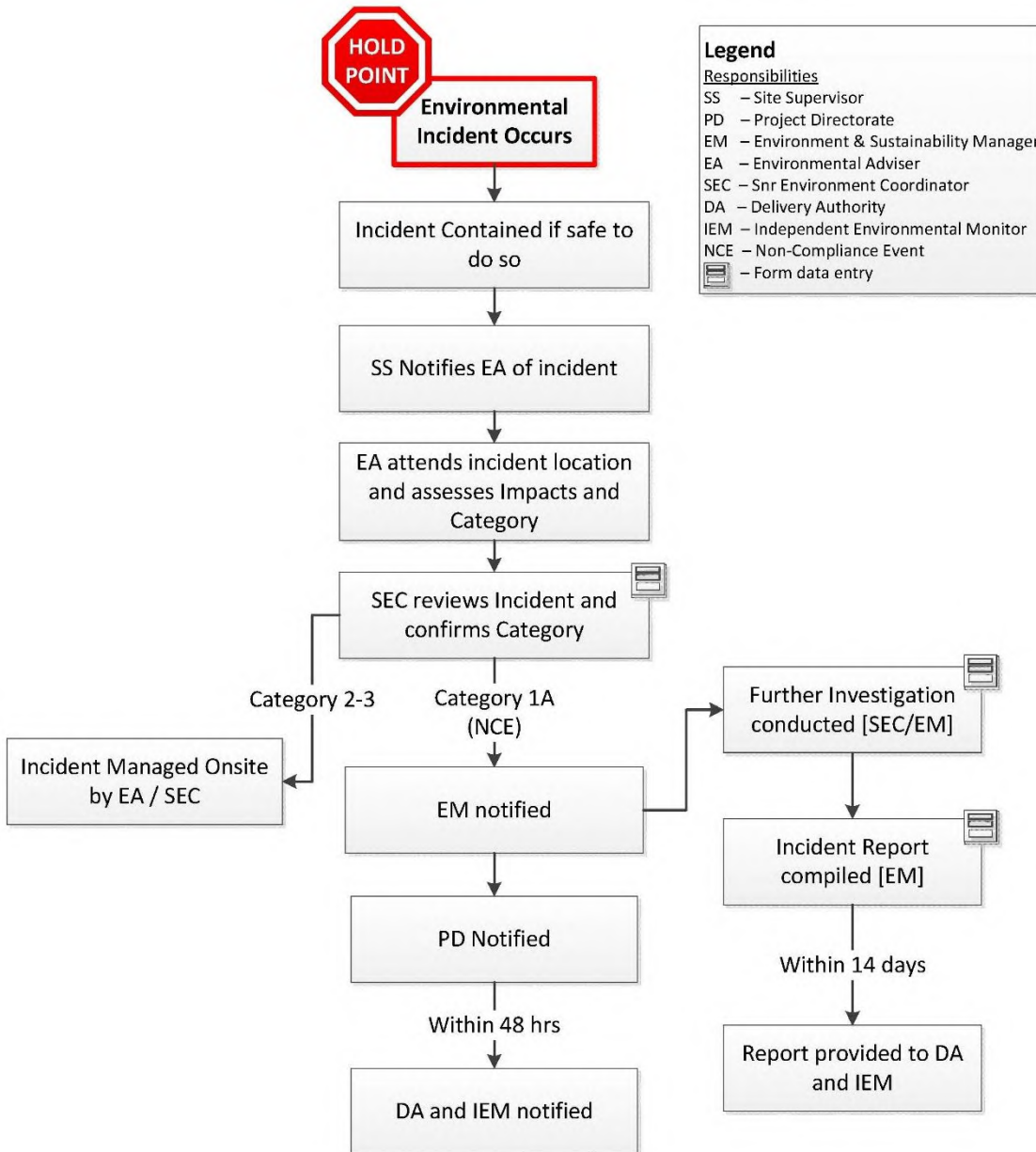


Figure 5 Incident Notification and Reporting

7.5.3.1 Non-Compliance Event Notification – Development Authority

In addition to any statutory requirements, within 48 hours of an NCE being identified, the Environmental Monitor and the CG must be notified of the non-compliance and initial response in accordance with Imposed Condition 5(a) and 5(b) will be prepared by CBGU and provided. This notification will include the following information:

- A description of the Non-Compliance Event, detailing; the location; date; and time of the event
- Name and details of the designated contact person
- An outline of any actions taken or will be taken to respond to the Non-Compliance Event.

7.5.3.2 Incident (NCE) Report – Development Authority

Within 14 days following the notification of an NCE, written advice detailing the following information will be provided to the Environmental Monitor and the CG:

- A description of the non-compliance event including details of the location, date and time of the noncompliance event
- The name and contact details of a designated contact person
- The circumstances in which the non-compliance event occurred
- Details of any complaint in relation to the non-compliance event
- The cause of the non-compliance event
- A description of the environmental effects of the non-compliance event
- The results of any sampling or monitoring performed in relation to the non-compliance event
- Actions taken to mitigate the environmental effects of the non-compliance event
- Proposed actions to prevent a reoccurrence of the non-compliance event, including timing and responsibility for implementation.

The report will accompany the next monthly environmental report. These Non-Compliance Events will be made available on the project website for the duration of the construction phase of the project.

7.5.3.3 Internal Incident Report

Internal Incident Notification shall occur in accordance with the CPB Contractors Environmental Management System. Where necessary, the Project Director or delegate will also notify the joint venture parent companies, CPB Contractors Pty Ltd, BAM International Australia Pty Ltd, Ghella Pty Ltd and UGL Engineering Pty Ltd.

7.5.3.4 Regulatory Incident Report

In consultation with the Delivery Authority, CBGU will complete all reporting requirements for the CG, DES and any other regulatory agencies who require notification.

8 Documentation & Communication

8.1 Environmental Records

CBGU is responsible for maintaining all environmental management documents and records associated with conditions as outlined in the CEMP. Types of records will include, but are not limited to:

- Monitoring, inspection and compliance reports/records
- Correspondence with regulatory agencies
- Correspondence with the public and stakeholders
- Induction and training records
- Reports on environmental incidents, other environmental non-conformances, complaints and follow-up action
- Community engagement information

A range of other records shall be created and maintained in accordance with each relevant sub-plan and as detailed within same. These may include, for example:

- Records of the following waste and regulated waste tracking, as a minimum, are to be kept throughout the construction phase:
 - Resource use and waste generated from construction works
 - Waste recovered and re-used
 - Waste disposed to landfill
 - Waste transporter or waste contractor details (including company name, licensed operator name and license number).
- Document all contaminated material during transport operations (including the descriptions of processes, personnel and organisations involved in the removal, transportation and placement of contaminated material)
- Documented records of contaminated material movement and disposal
- Soil disposal permits will be maintained on register
- Archival recording will be carried out in accordance the DES's guideline on Archival Recording of Heritage Places.

8.2 Document Control

A register will be retained of all licenses, permits, approvals and any other agreements pertaining to the works.

Project documents, including the monthly environmental reports and incident reports, are maintained and are made available for inspection on request by the Delivery Authority and by any agency with relevant regulatory responsibilities. All monthly environmental reports and incident reports are kept for a minimum of at least five

years after completion of construction or otherwise in accordance with applicable legislation or the regulator's requirements.

A system (Teambinder) has been established for registering all in-coming and out-going correspondence regarding environmental matters during the design, construction and commissioning phases of the site investigation and establishment works. The document management system must also include:

- All environmental documents and plans, including all versions of the CEMP, monitoring results, and environmental reports
- All approvals, permits and licenses necessary to conduct the works
- Technical investigations and studies
- Photographic and other visual records
- Complaints and responses
- General correspondence.

8.3 Review and Improvement

CBGU will coordinate the preparation, review and distribution as appropriate, of the environmental documents, including on the project website. All environmental management documents are subject to ongoing review and continual improvement.

CBGU will implement a document control procedure to control the flow of documents within and between CBGU, Regulatory Agencies, the Delivery Authority and relevant stakeholders and subcontractors. This will include a process for regular review and if required updating of the CEMP, including a process to review and implement additional or different mitigation measures in response to monitoring results.

Updates to the CEMP that include new or additional Relevant Project Work will be endorsed by the Environmental Monitor as being consistent with condition 4 (g) before Relevant Project Work proceeds.

8.3.1 Construction Environmental Management Plan Review

Revisions to this CEMP may be required during the project to reflect changing circumstances or identified deficiencies. Revisions may result from:

- Annual review
- Management Review
- Audit (either internal or by external parties)
- Complaints or non-conformance reports or
- Changes to the Company's standard system.

Revisions shall be reviewed and approved prior to issue. Updates to the CEMP are numbered consecutively and issued to holders of controlled copies.

8.4 Communication

All internal and external communication with all stakeholders including the public, Coordinator-General, government agencies and the Delivery Authority must be done in accordance with *the* CEP and/or CSEP.

As per condition 4 (f) of the CGCR #4 the CEMP will be made available for the public on the project website for the duration of the construction phase.

Appendix A

Project Approvals Register

Approval / Permit / Licence	Regulatory Authority	Responsibility / Timeframe	Items approved
Heritage Exemption Certificate	Department of Environment and Science (DES)	Environment and Sustainability Manager 36 BD	Working on a Queensland heritage place
Cultural Heritage Management Plan	DATSIP	CRR DA	Working on a project requiring an EIS
Soil disposal permit	DES	Environment and Sustainability Manager 15 BD	Removal of contaminated material from site
Waste Levy Exemption	DES	Environment and Sustainability Manager 35 BD	Disposing of hazardous waste and reduction in levy based on waste present prior to 1992

Appendix B

Project Environmental Risk Assessment

Environmental Risk Register

The CBGU environmental risk register identifies the environmental aspects of the project, the associated potential environmental impacts, and a risk rating for that impact. Applicable management measures are nominated within the environmental management plan identified in the table. Management measures may include physical controls, procedures, forms, checklists, monitoring requirements, permits, etc. A revised risk rating, assuming the controls nominated within the environmental management plans are implemented, is also included in the table.

The risk rating (refer Table 17) is based on the likelihood of the event occurring (refer Table 15) and the consequence (refer Table 16).

Table 15 Likelihood criteria

Probability (likelihood)	Description (1)	Description (2)	Description (3)
Almost certain (5)	Common /Frequent Occurrence	Can be expected to occur 75% – 99%	More than 1 event per month
Likely (4)	Is known to occur or “It has happened regularly”	Can quite commonly occur 50% - 75%	More than 1 event per year
Possible (3)	Could occur or “I’ve heard of it happening”	May occasionally occur 25% - 50%	1 event per 1 to 10 years
Unlikely (2)	Not likely to occur very often	May infrequently occur 10% - 25%	1 event per 10 to 100 years
Rare (1)	Conceivable but only in exceptional circumstances	May occur in exceptional circumstances 0% - 10%	Less than 1 event per 100 years

Table 16 Consequence criteria relevant to environment and heritage

Consequence (impact)	Description
Negligible (1)	Short term ecological damage
Minor (2)	Limited but medium term ecological damage
Moderate (3)	Major but recoverable ecological damage
Major (4)	Heavy ecological damage, costly restoration
Substantial (5)	Permanent widespread ecological damage

Table 17 Risk rating

		Consequence				
		Negligible (1)	Minor (2)	Moderate (3)	Major (4)	Substantial (5)
Likelihood	Almost certain (5)	Low (5)	Moderate (10)	Very High (18)	Extreme (23)	Extreme (25)
	Likely (4)	Low (4)	Moderate (9)	Very High (17)	Very High (20)	Extreme (24)
	Possible (3)	Low (3)	Moderate (8)	High (13)	Very High (19)	Very High (22)
	Unlikely (2)	Low (2)	Low (7)	High (12)	High (15)	Very High (21)
	Rare (1)	Low (1)	Low (6)	Moderate (11)	High (14)	High (16)

Table 18 CBGU Environmental Risk Register

Note: Risk ratings are identified as extreme (E), very high (VH), high (H), moderate (M), and low (L). Applicable management measures are nominated within the environmental management plan identified in the table. Management measures may include physical controls, procedures, forms, checklists, monitoring requirements, permits, etc.

Environmental aspect (Significant Environmental Hazard)	Potential Environmental Impact (risk)	L	C	Risk ranking	Environmental management	L	C	Risk ranking
Vegetation clearance / grubbing / demolition	Clearing outside of approved area	5	2	M10	• FFMP	1	2	L6
	Impacts on unexpected threatened species	2	4	H15	• FFMP	1	4	H14
	Displacement of, or injury to fauna	3	2	M8	• FFMP	2	2	L7
	Spread of noxious weeds via personnel, plant / equipment, topsoil/mulch	3	2	M8	• FFMP	2	2	L7
	Generation of dust leading to amenity, community nuisance	5	3	VH3	• AQMP	3	3	H13
	Loss of screening for heritage properties or impacts to heritage curtilage (beyond approved impacts)	3	4	VH19	• ICHMP • NICHMP	1	4	H14
	Complete / partial loss of heritage value for future generations due to insufficient archival recording	5	2	M10	• ICHMP • NICHMP	1	2	L6
	Erosion and sedimentation impacts on downstream waterways due to exposed land, inadequate controls or failure of controls	5	2	M10	• WQMP • ESCMP	3	2	M8
	Inappropriate disposal of waste including demolition, vegetation and hazardous or special waste, including asbestos	3	4	VH19	• WMP • Sustainability Management Plan	3	2	M8
	Missed opportunities to maximise beneficial re-use of wastes	4	1	L4	• WMP • Sustainability Management Plan	3	1	L3
Earthworks and excavation	Generation and mobilisation of dust from construction sites and spoil removal trucks impacting receivers including residents, businesses, and vegetation	5	2	M10	• AQMP	3	2	M8

Environmental aspect (Significant Environmental Hazard)	Potential Environmental Impact (risk)	L	C	Risk ranking	Environmental management	L	C	Risk ranking
	Disturbance or damage of unidentified Aboriginal heritage artefact	1	4	H14	<ul style="list-style-type: none"> • ICHMP 	1	3	M11
	Disturbance or damage of non-Aboriginal heritage item	4	3	VH17	<ul style="list-style-type: none"> • NICHMP 	2	3	H12
	Noise and vibration impacts on nearby receivers	5	2	M10	<ul style="list-style-type: none"> • NVMP 	3	2	M8
	Erosion and sedimentation impacts on downstream waterways due to exposed land, inadequate controls or failure of controls	5	3	VH18	<ul style="list-style-type: none"> • WQMP • ESCMP 	3	3	H13
	Pollution of groundwater	2	4	H15	<ul style="list-style-type: none"> • WQMP 	1	3	M11
	Distribution of or mis-management of unexpected contamination or acid sulphate soils	5	3	VH18	<ul style="list-style-type: none"> • WQMP • ASSMP 	2	3	H12
	Incorrect disposal of contaminated spoil (including asbestos)	5	4	E23	<ul style="list-style-type: none"> • WMP • Sustainability Management Plan 	2	3	H12
Establishment and operation of site facilities	Amenity and visual impacts on nearby receivers due to compounds, including light spill and overshadowing	5	2	M10	<ul style="list-style-type: none"> • CEMP 	4	2	M9
	Spread of noxious weeds via personnel, plant / equipment, topsoil/mulch	3	2	M8	<ul style="list-style-type: none"> • FFMP 	2	2	L7
	Dust impacts to receivers due to stockpiling, exposed surfaces, material handling	4	2	M9	<ul style="list-style-type: none"> • AQMP 	3	2	M8
	Noise and vibration impacts on nearby receivers, including out of hours impacts	5	3	VH18	<ul style="list-style-type: none"> • NVMP 	4	2	M9
	Failure of construction water treatment plant leads to uncontrolled discharge or discharge that doesn't meet Coordinator-General's Approval	4	4	VH20	<ul style="list-style-type: none"> • WQMP 	3	4	VH19
	Contamination of soil or water from spill or leak of dangerous or hazardous materials from plant / equipment	5	2	M10	<ul style="list-style-type: none"> • WQMP 	4	1	L4

Environmental aspect (Significant Environmental Hazard)	Potential Environmental Impact (risk)	L	C	Risk ranking	Environmental management	L	C	Risk ranking
	Contamination of soil or water from spill or leak of dangerous or hazardous materials from bulk storage	3	4	VH19	<ul style="list-style-type: none"> WQMP 	2	2	L7
	Erosion and sedimentation impacts on downstream waterways due to exposed land, inadequate controls or failure of controls	5	2	M10	<ul style="list-style-type: none"> WQMP ESCMP 	2	2	L7
	Inappropriate disposal of waste including hazardous or special waste, including asbestos	3	4	VH19	<ul style="list-style-type: none"> WMP 	2	3	H12
	Inappropriate disposal of office wastes	3	1	L3	<ul style="list-style-type: none"> WMP Sustainability Management Plan 	2	1	L2
	Traffic and parking impacts due to increased number of construction vehicles, site access arrangements	5	2	M10	<ul style="list-style-type: none"> TMP 	3	2	M8
	Tracking of mud at site access points	4	2	M9	<ul style="list-style-type: none"> AQMP WQMP 	3	1	L3
General construction activities	Breach of CoA or EPL conditions, legal or client requirements leading to PINs, fines, prosecution, loss of reputation, strained relationships, contractual implications	5	4	E23	<ul style="list-style-type: none"> CEMP and subplans 	2	3	H12
	Minor incidents, e.g. small leaks / spills, that do not cause or threaten material harm to the environment	5	2	M10	<ul style="list-style-type: none"> CEMP WQMP 	4	1	L4
	Serious incidents, e.g. uncontrolled release of concrete washout water, water treatment plant, major fuel spill, that cause or threaten material harm to the environment	3	4	VH19	<ul style="list-style-type: none"> CEMP WQMP 	1	4	H14
	Generation of dust due to cutting/grinding/sawing equipment, material /waste/spoil handling; and generation of exhaust emissions due to inappropriate plant maintenance	5	2	M10	<ul style="list-style-type: none"> AQMP 	3	2	M8
	Noise and vibration impacts on nearby receivers, including out of hours impacts resulting in structural damage or community complaints	5	3	VH18	<ul style="list-style-type: none"> NVMP 	3	3	H13

Environmental aspect (Significant Environmental Hazard)	Potential Environmental Impact (risk)	L	C	Risk ranking	Environmental management	L	C	Risk ranking
	Inappropriate disposal of waste including hazardous or special waste, including asbestos	3	3	VH19	<ul style="list-style-type: none"> WMP 	2	2	L7
	Visual impacts on nearby receivers due to light spill, construction works, overshadowing	4	2	M10	<ul style="list-style-type: none"> CEMP 	2	2	L7
	Traffic and parking impacts due to increased number of construction vehicles, site access arrangements	5	2	M10	<ul style="list-style-type: none"> TMP 	3	2	M8
	Contamination of soil or water from spill or leak of dangerous or hazardous materials from plant / equipment	5	2	M10	<ul style="list-style-type: none"> WQMP 	4	1	L4
	Inappropriate management of concrete wastes, overtopping of washout area (e.g. during a rain event)	5	3	VH18	<ul style="list-style-type: none"> WQMP 	2	2	L7
	Uncontrolled (beyond design) release of sediment basins of runoff from disturbed areas resulting in uncontrolled discharge to soils or water	5	4	E23	<ul style="list-style-type: none"> WQMP ESCMP 	2	4	H15
	Litter, inappropriate use of co-mingling and waste receptacles	5	1	L5	<ul style="list-style-type: none"> WMP Sustainability Management Plan 	3	1	L3
	Failure to realise opportunities to recycle water to reduce discharge, beneficial re-use of materials	3	1	L3	<ul style="list-style-type: none"> WMP Sustainability Management Plan 	2	1	L2
Tunnel excavation	Vibration leading to structural damage or cosmetic damage	5	4	E23	<ul style="list-style-type: none"> NVMP 	3	3	H13
	Regenerated noise impacts on nearby receivers, including out of hours impacts, resulting in sleep disturbance or community complaints	5	2	M10	<ul style="list-style-type: none"> NVMP 	4	2	M9
	Vibration leading to damage of property or heritage items	3	3	VH19	<ul style="list-style-type: none"> NVMP 	2	3	H12

Environmental aspect (Significant Environmental Hazard)	Potential Environmental Impact (risk)	L	C	Risk ranking	Environmental management	L	C	Risk ranking
	Changes to groundwater level and quality leading to contamination, changes in salinity, ASS	3	3	H13	<ul style="list-style-type: none"> WQMP 	2	3	H15
	Changes to groundwater levels impact on survival of species and or ecosystems that rely on groundwater	3	3	H13	<ul style="list-style-type: none"> WQMP NCMP 	3	3	H13
	Contamination of soils and groundwater due to spills and leaks	5	2	M10	<ul style="list-style-type: none"> WQMP 	3	1	L3
	Inappropriate disposal of spoil	5	2	M10	<ul style="list-style-type: none"> WMP Sustainability Management Plan 	2	2	L7
	Inappropriate disposal of contaminated groundwater	3	4	VH19	<ul style="list-style-type: none"> WQMP 	1	4	H14
Spoil transport, deliveries, general plant operation on public roads	Traffic impacts due to increased number of construction vehicles (heavy and light vehicles) and vehicle movements	5	2	M10	<ul style="list-style-type: none"> TMP 	4	2	M9
	Generation of dust due to material /waste/spoil loading and unloading; and generation of exhaust emissions due to inappropriate plant maintenance	5	2	M10	<ul style="list-style-type: none"> AQMP 	2	2	L7
	Tracking of mud or waste on public roads	4	2	M9	<ul style="list-style-type: none"> AQMP WQMP 	2	1	L2
	Noise and vibration impacts on receivers near construction site or along haul roads (during standard hours)	4	2	M9	<ul style="list-style-type: none"> NVMP 	2	2	L7
	Noise and vibration impacts on receivers near construction site or along haul roads (out of hours)	5	3	VH18	<ul style="list-style-type: none"> NVMP 	3	3	H13

Appendix C

Environmental Checklist and Non-Compliance Event Notification

CRR Tunnel, Stations and Development
**Weekly Environment & Sustainability
 Inspection Checklist**



Date Conducted: Click to enter date.	Location: Choose an item.	Inspection By:
Attendees:		

Control Activity	Compliant?
General	
Have there been any incidents in the past week, e.g. oil spills, unauthorised discharges?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
If yes, has the incident report been submitted and corrective actions implemented.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Land Clearing	
Has any vegetation removal or trimming occurred since the last weekly inspection?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
If yes, was all clearing within approved boundaries?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
If yes, has clearing been managed to minimise exposed areas and dust generation where applicable?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Is any clearing scheduled in the coming weeks that requires approval?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Erosion and Sediment Controls	
Is the ESCP for the site current?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Have erosion and sediment controls been implemented in accordance with the ESCP?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Have sediment controls been adequately maintained?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are exits from site stabilised?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are there signs of dirt tracking from site exits?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Have sediment basins been dewatered in accordance with requirements?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Is the sediment layer in the sediment basin below the maximum storage zone?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Dust Control	
Is significant visible dust being generated at the site?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
If yes, have work activities being modified to reduce dust levels?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are dust mitigation measures being implemented e.g. water carts?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are Road-Sweepers being used onsite?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Waste Management	
Is housekeeping onsite adequate?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are adequate numbers of bins and skips available in each work area and clearly labelled?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are skips being emptied at a suitable frequency?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Is the site free of litter?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are suitable bins available onsite and being used for disposal of cigarette butts?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Is concrete washout occurring in an approved location or facility?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Chemicals & Hazardous Materials Management	
Are spill kit(s) accessible in each work area and are they suitably stocked?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Is there any evidence of spills or leaks that have not been cleaned up and reported?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are all Hazardous Materials stored in bunded areas?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>

CRR Tunnel, Stations and Development
**Weekly Environment & Sustainability
 Inspection Checklist**



Control Activity	Compliant?
Are bunds in good condition and not containing rainwater/chemicals?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Have items of fixed plant e.g. generators been positioned away from waterways AND adequately bunded (in addition to internal drip trays)?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are all chemical storage containers labelled and in good condition with SDS available?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are stockpiles containing contaminated material (such as ACM) adequately covered and signposted?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Noise and Vibration	
Have any Extended Hours Works been completed this week?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
If yes, was notification provided and monitoring completed in accordance with the OOHW Protocol?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are non-tonal reversing alarms in use onsite?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are any items of plant onsite generating excessive noise?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Is respite being provided where high-impact or tonal/impulsive noise is being generated?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Have new activities been monitored to verify compliance with noise goals?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Sustainability	
Is non-potable water being used for dust suppression where possible?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Has timber on the site been sourced from sustainable sources that have obtained Forest Management Certification (FMC) certified under either the FSC, PEFC or AFCS/AFS schemes?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are machines/equipment/air conditioners being turned off when not in use?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Flora and Fauna	
Has the drip-line of trees been adequately protected?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Have all materials been stored/stockpiled outside of the drip-line of trees?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Other	
Is demarcation and signage of Environmental No-Go Zones in place and clearly visible?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Has any asbestos, acid sulphate soil or other contaminated material been uncovered?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
If yes, has an Unexpected Finds form been developed and submitted?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Have any unexpected heritage items been uncovered?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
If yes, has an Unexpected Finds form been developed and submitted?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>

Priority Actions	By Whom	Due Date	Closed?

Remaining Actions	By Whom	Due Date	Closed?

CRR Tunnel, Stations and Development
**Weekly Environment & Sustainability
 Inspection Checklist**



Positives, commendations or initiatives observed (describe)

Positives -	
-------------	--

Actions communicated to (PM, supervisor, foreman) Name:	Signature:	Date:
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Note: * FSC- Forest Stewardship Council; PEFC – Program for the Endorsement of Forest Certification; AFCS – Australian Forest Certification Scheme (Also known as AFS)



CRR Tunnel, Stations and Development
Environment & Sustainability Incident / Non-Compliance Event Notification



Date: Click or tap to enter a date.	Time:	Location: Choose an item.
Report prepared by:		

<p>Description (provide a brief description of what happened during the incident / non-compliance)</p>	
<p>Location (provide exact location of incident / non-compliance. Where possible provide GPS co-ordinates, chainages, landmarks or similar)</p>	
<p>Quantity or Volume of material causing incident / non-compliance (provide estimate if exact amount unknown)</p>	
<p>Estimate distance to nearest waterway or sensitive receiver (Can include wetlands, stormwater drains, bio basins, ephemeral creeks)</p>	
<p>What activity was being undertaken when the incident / non-compliance occurred?</p>	
<p>How was the incident / non-compliance identified? (e.g TMR/QR employee, CBGU employee, Council, Community)</p>	

Title: Environment & Sustainability Incident / Non-Compliance Event Notification
ID: CRRTSD-EN-FRM-CBGU-000002 **Version:** B **Date Published:** 04/09/2019
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CRR Tunnel, Stations and Development
Environment & Sustainability Incident / Non-Compliance Event Notification



Minor Incident (Tick all that apply)	
<input type="checkbox"/> A procedural, administrative or technical breach that relates to the preparation or submission of documents, reports or other correspondence <input type="checkbox"/> Failure to implement component of Environment Management Plan or work method statement that does not result in a Category 1 incident ³ <input type="checkbox"/> Spills that do not leave the site boundary and are cleaned up without material environmental harm or residual environmental impact. <input type="checkbox"/> A fire that is contained on site and does not cause or potentially cause adverse impact to the environment or community	
Major Incident (Tick all that apply)	
<input type="checkbox"/> Pollution, or potential pollution, of waters with sediment or chemicals/fuels/oils that travel beyond the site boundary causing or potentially causing adverse impact to the environment. <input type="checkbox"/> Discharge of waters from site not in accordance with any applicable approval. <input type="checkbox"/> Works undertaken outside approved areas, without required approval or environmental assessment. <input type="checkbox"/> Unauthorised harm to Aboriginal objects and Aboriginal places <input type="checkbox"/> Damage to any State or locally significant relic or Heritage item. <input type="checkbox"/> A spill or other incident that causes pollution to land or residual environmental impact. <input type="checkbox"/> Breach of legislation, failure to comply approval or permit / licence condition.	<input type="checkbox"/> Unauthorised harm or damage to native vegetation, threatened species, endangered populations, endangered ecological communities or critical habitat. <input type="checkbox"/> Material harm to the environment or persons as per EP Act. <input type="checkbox"/> Unauthorised harm or damage to threatened aquatic species and protected marine vegetation or unauthorised dredging or reclamation works within a watercourse. <input type="checkbox"/> Unauthorised damage or destruction to any State or locally significant relic or Heritage item. <input type="checkbox"/> Unauthorised disposal or transport of waste. <input type="checkbox"/> Emission of excessive levels of dust, or an offensive odour or noise that travel beyond the site boundary and might impact on nearby land users. <input type="checkbox"/> A fire that travels beyond the boundary causing or potentially causing adverse impact on the environment or community.
Non-Compliance Event (CG – Conditions)	
<input type="checkbox"/> Yes	

Any other details of the incident / non-compliance.

What Immediate actions/controls were taken to rectify/contain the incident / non-compliance?

What corrective action has been taken to prevent similar incidents recurring?

Notification Requirements

Is notification to State Agency, DA required? Yes No

If yes - Date and Time of Notification

Comments

Sign off - Person making report

Sign off - Environment and Sustainability Manager

Appendix D

Coordinator General Conditions (Change Report #5)

Appendix 1. Project-wide Imposed Conditions – Cross River Rail project

Part A. Imposed Conditions (General)

Condition 1. General conditions

- (a) The project must be carried out generally in accordance with:
 - (i) the Cross River Rail Request for Project Change dated April 2019;
 - (ii) the amended or new drawings provided at Appendix 2, Response to Submissions Report, June 2019, including:
 - (A) CRR-0003-AL-GA-100 – Drawing Index and Locality Plans - 1
 - (B) CRR-0003-AL-GA-201 – General Arrangement - 4
 - (C) CRR-0003-AL-GA-211 – General Arrangement - 11
 - (D) CRR-0003-CD-GA-110 – Construction Site Plans Moorooka Station
 - (E) CRR-0003-DUT-GA-101 – Dutton Park Station
 - (F) CRR-0003-RP-GA-111 – Property Impact Plans – 11
 - (G) CRR-0003-RP-GA-124 – Property Impact Plans – 24
 - (iii) amendments to the Project identified in the Cross River Rail Request for Project Change dated June 2018;
 - (iv) amendments to the Project identified in the Cross River Rail Request for Project Change dated November 2018
- (b) The proponent must notify the Coordinator-General and all nominated entities in Schedule 2 in writing of the commencement of Project Works and the commencement of the commissioning and operational phases of each 'construction site' at least 20 business days prior to the relevant commencement date.
- (c) The temporary coach terminal works must be carried out in accordance with the conditions imposed at Appendix 3.

Condition 2. Outline Environmental Management Plan

- (a) Two months prior to the commencement of Project Work submit a final Outline Environmental Management Plan to the Coordinator-General for approval.
- (b) The Outline Environmental Management Plan must:
 - (i) Include the environment outcomes and performance criteria for each environmental element from the draft outline EMP except as amended by these conditions;
 - (ii) include possible mitigation measures, monitoring and reporting for each environmental element to achieve the environmental outcomes;
 - (iii) include an outline of:
 - (A) the Construction Environmental Management Plan
 - (B) the Commissioning Environmental Management Plan
 - (iv) be consistent with the Environmental Design Requirements in Schedule 1
 - (v) include the following sub-plans:
 - (A) Community and Stakeholder Engagement Plan
 - (B) Construction Worksite Management Plan

- (C) Construction Traffic Management Plan (CTMP)
 - (D) Construction Vehicle Management Plan
 - (E) Water Quality Monitoring Plan
 - (F) Erosion and Sediment Control Plan
 - (G) Spoil Placement Management Plan
 - (H) Noise and Vibration Management Plan
 - (I) Air Quality Management Plan
 - (J) Settlement Management Plan
 - (K) Non-Indigenous Cultural Heritage Management Plan
 - (L) Indigenous Cultural Heritage Management Plan
- (vi) Be made available on the proponent's website once approved by the Coordinator-General and for the duration of the construction of the project and for a period of five years from commencement of operation.
- (c) Any further amendments to the Coordinator-General approved Outline Environmental Management Plan will be issued to the Coordinator-General 20 business days prior to the commencement of Relevant Project Works.

Part B. Imposed Conditions (Design)

Condition 3. Design

- (a) The project must achieve the Environmental Design Requirements in Schedule 1.

Part C. Imposed Conditions (Construction)

Condition 4. Construction Environmental Management Plan

- (a) Prior to the commencement of Project Work, a Construction Environmental Management Plan for those works (Relevant Project Work) must be developed by the Proponent and endorsed by the Environmental Monitor as being consistent with the Outline EMP and these imposed conditions.
- (b) The endorsed Construction Environmental Management Plan must be submitted to the Coordinator General at least 20 business days prior to the commencement of Relevant Project Works.
- (c) The Construction Environmental Management Plan must:
- (i) describe the Relevant Project Work;
 - (ii) be based on predictive studies and assessments of construction impacts which have regard to the scale, intensity, location and duration of construction works, and location of Directly Affected Persons;
 - (iii) be generally consistent with the Outline EMP and incorporate its environmental outcomes and performance criteria;
 - (iv) incorporate and respond to the Imposed Conditions (Construction);
 - (v) demonstrate that the Imposed Conditions (Construction) will be complied with during Relevant Project Work;
 - (vi) incorporate the community engagement plan, including the complaints management process, in accordance with Condition 9;
 - (vii) where predictive studies indicate impacts beyond those provided for in the performance criteria, incorporate mitigation measures to achieve the environmental outcomes;

- (viii) establish specific mitigation measures and processes for consultation with Directly Affected Persons for Project Works under Conditions 9(c), 11(c), and 11(e);
 - (ix) contain a program and procedures for ongoing monitoring to identify the effectiveness of mitigation measures in achieving the Imposed Conditions (Construction) and the environmental outcomes in (iii)
 - (x) include a process for regular review and if required updating of the Construction Environmental Management Plan, including a process to review and implement additional or different mitigation measures in response to monitoring results;
 - (xi) incorporate the EMP sub-plans required by the Imposed Conditions or as required by the approved Outline EMP.
- (d) The Construction Environmental Management Plan must be implemented for the duration of Relevant Project Work.
 - (e) Relevant Project Work is authorised if it is undertaken in accordance with the Construction Environmental Management Plan.
 - (f) The Construction Environmental Management Plan must be publicly available on the project website for the duration of the construction phase.
 - (g) The Construction Environmental Management Plan may be updated.
 - (i) updates to the Construction Environmental Management Plan that include new or additional Relevant Project Work must be endorsed by the Environmental Monitor as being consistent with condition 2 before Relevant Project Work may proceed.
 - (h) Updates to the Construction Environmental Management Plan that are limited to new or different mitigation measures for Managed Work may be endorsed by the Environmental Monitor.

Condition 5. Compliance

- (a) The proponent must notify the Environmental Monitor and the Coordinator-General in writing, within 48 hours after becoming aware of a Non-Compliance Event.
- (b) The notification must include:
 - (i) a description of the Non-Compliance Event, including details of the location, date and time of the Non-Compliance Event;
 - (ii) the name and contact details of a designated contact person;
 - (iii) an outline of actions that have been or will be taken to respond to the Non-Compliance Event.
- (c) Within 14 days following the notification of a Non-Compliance Event, written advice detailing the following information must be provided to the Environmental Monitor and the Coordinator-General:
 - (i) a description of the Non-Compliance Event, including details of the location, date and time of the Non-Compliance Event;
 - (ii) the name and contact details of a designated contact person;
 - (iii) the circumstances in which the Non-Compliance Event occurred;
 - (iv) details of any complaint in relation to the Non-Compliance Event;
 - (v) the cause of the Non-Compliance Event;
 - (vi) a description of the environmental effects of the Non-Compliance Event;
 - (vii) the results of any sampling or monitoring performed in relation to the Non-Compliance Event;
 - (viii) actions taken to mitigate the environmental effects of the Non-Compliance Event;

- (ix) proposed actions to prevent a recurrence of the Non-Compliance Event, including timing and responsibility for implementation.
- (d) The Non-Compliance Event report must be made available on the project website and remain available for the duration of the construction phase for the project.

Condition 6. Reporting

- (a) The Proponent must prepare a Monthly Report that summarises compliance and monitoring results for the duration of construction works.
- (b) The Monthly Report must include:
 - (i) monitoring data required by the imposed conditions or Construction Environmental Management Plan undertaken for the period and, where required, an interpretation of the results;
 - (ii) details of any Non-Compliance Event, including a description of the incident, resulting effects, corrective actions, revised construction practices to prevent a recurrence, responsibility and timing;
 - (iii) reporting of complaints, including the number of complaints, description of issues, responses and corrective actions.
- (c) The Monthly Report must be provided to the Coordinator-General and the Environmental Monitor, and made available on the project website within six weeks of the end of the month to which the report relates, and continue to be available on the project website until commissioning is complete.
- (d) The Proponent must provide annual reports to the Coordinator-General and the Environmental Monitor (Annual Report) no later than 31 July in any year during the construction phase about compliance with the imposed conditions.
- (e) The Annual Report must include:
 - (i) a compliance evaluation table detailing the relevant imposed condition, whether compliance with the condition was achieved and how compliance was evaluated;
 - (ii) an evaluation of compliance in relation to the CEMP and its sub-plans;
 - (iii) a summary of any Non-Compliance Events during the reporting period;
 - (iv) a summary of any Non-Compliance Events during the previous reporting period, with details of site remediation activities, corrective actions taken or to be taken and revised practices implemented or to be implemented (as relevant).

Condition 7. Environmental Monitor

- (a) The Proponent must engage an independent, appropriately skilled and experienced entity, approved by the Coordinator-General, as the Environmental Monitor for the duration of construction.
- (b) The Proponent must ensure that the Environmental Monitor has reasonable site access and access to all information required to perform its function, including, without limitation:
 - (i) all approvals;
 - (ii) the Construction Environmental Management Plan;
 - (iii) results of all monitoring required under the Imposed Conditions (Construction) including through the Construction Environmental Management Plan;
 - (iv) all information relating to complaints, including access to the complaints database.
- (c) The Environmental Monitor must:
 - (i) monitor compliance with the imposed conditions during the construction of the project;

- (ii) monitor compliance with the Construction Environmental Management Plan and sub-plans;
- (iii) maintain a register of mitigation measures agreed between the Proponent and Directly Affected Persons (Mitigation Register);
- (iv) review the compliance reports required by Condition 5, and the monthly reports and annual reports required by Condition 6, and provide advice to the Coordinator-General and the Proponent on the contents and adequacy of those reports;
- (v) review the results of monitoring, which may be verified by the Environmental Monitor including by independent monitoring;
- (vi) provide advice to the Proponent about compliance with the Imposed Conditions for construction, including by providing the results of independent monitoring where required;
- (vii) provide advice to the Proponent about issues raised in complaints and the response to complaints, including advice from the Community Relations Monitor;
- (viii) endorse the Construction Environmental Management Plan as consistent with the Outline EMP and complying with the Imposed Conditions (Construction);

Condition 8. Community Relations Monitor

- (a) The proponent must engage an independent, appropriately skilled and experienced entity, approved by the Coordinator-General, as the Community Relations Monitor for the duration of construction.
- (b) The Community Relations Monitor must:
 - (i) review and provide advice to the Environmental Monitor on the community engagement plan required by Condition 9;
 - (ii) receive monthly reports from the proponent on complaints;
 - (iii) attend each meeting between the Proponent and a Directly Affected Person to consult on mitigation measures, including providing input on standard responses for similar impacts;
 - (iv) provide advice to the Environmental Monitor in relation to complaints, community engagement and consultation on mitigation measures;
 - (v) be available to members of the community in accordance with Condition 9(f)(vi).

Condition 9. Community engagement plan

- (a) The Proponent must develop a community engagement plan as part of the Construction Environmental Management Plan consistent with the Outline EMP's Community and Stakeholder Engagement Plan.
- (b) The community engagement plan must be given to the Community Relations Monitor for advice at least 10 business days prior to the Construction Environmental Management Plan being provided to the Environmental Monitor.
- (c) The community engagement plan must provide for:
 - (i) Directly Affected Persons to be consulted prior to commencement of Project Works and ongoing thereafter about Project Works, predicted impacts and mitigation measures;
 - (ii) Directly Affected Persons to be consulted about possible mitigation measures;
 - (iii) local communities near Project Works to be informed about the nature of construction, including the timing, duration and predicted impacts of the works in advance of their commencement;

- (iv) information to be provided to public transport, road users, pedestrians and cyclists about the predicted effects of Project Works on road, rail and pedestrian and cycle network operations, in advance of their commencement;
 - (v) specific community consultation plans for identified key stakeholders;
 - (vi) implementation of an Indigenous employment policy, providing for Indigenous training and employment opportunities;
 - (vii) a process for advance notification to local communities of Project Works, including the timing, duration, predicted impacts and mitigation measures, which is available on the project website and through other media.
- (d) The community engagement plan must incorporate a complaints management system developed specifically for the Project, which is established prior to the commencement of Project Works.
- (e) The complaints management system must deliver a prompt response to community concerns with relevant information, action where required, and reporting of incidents.
- (f) As a minimum, the complaints management system must include the following elements:
- (i) a procedure for receiving complaints on a 24 hour, seven days a week basis, during Project Works;
 - (ii) a mechanism for notifying the community of the complaints procedure and how it may be accessed;
 - (iii) a process for registering and handling complaints received, including a database for tracking of complaints and actions taken in response;
 - (iv) a procedure for verifying complaints through monitoring and detailed investigation, and escalating and resolving verified complaints;
 - (v) a procedure for complaints to be notified to the Community Relations Monitor, including information about the complaint and its resolution;
 - (vi) access by the community to the Community Relations Monitor; and
 - (vii) regular reporting via the monthly environmental report, to the community of complaints and corrective actions, maintaining appropriate confidentiality.
- (g) All information regarding complaints, including the information collected in Condition 9(f)(iii) must be made available to the Community Relations Monitor.

Condition 10. Hours of work

- (a) Surface works for the Project are authorised to be undertaken within the hours of work set out in Table 1.

Table 1. Construction hours

Worksite	Surface works—standard hours	Extended work hours	Managed Work	Spoil haulage and materials/equipment delivery
Fairfield, Yeronga, Yeerongpilly, Rocklea and Salisbury stations	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) Monday to Friday 6:30pm - 10:00pm	24 hours, 7 days	Monday to Friday: 6.30am - 7.30am 9.00am - 2.30pm 4.30pm - 6.30pm Saturday 6.30am - 6.30pm

Worksite	Surface works—standard hours	Extended work hours	Managed Work	Spoil haulage and materials/equipment delivery
Moorooka/ Clapham Yard	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) Monday to Friday 6:30pm - 10:00pm	24 hours, 7 days	Monday to Friday: 6.30am - 7.30am 9.00am - 2.30pm 4.30pm - 6.30pm Saturday 6.30am - 6.30pm
Southern portal	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) 6:30pm - 10:00pm, Monday to Friday	24 hours, 7 days	24 hours, 7 days
Boggo Road Railway station	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) Monday to Friday 6:30pm - 10:00pm,	24 hours, 7 days	Monday to Friday: 6.30am - 7.30am 9.00am - 2.30pm 4.30pm - 6.30pm Saturday 6.30am - 6.30pm
Dutton Park Railway station	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work	n/a	24 hours, 7 days, except for: Monday to Friday: 7:00am - 9:00am 4:30pm - 6:30pm
Woolloongabba Railway station	Monday to Saturday, 6.30am-6.30pm	Monday to Friday 6:30pm- 10:00pm	24 hours, 7 days	24 hours, 7 days, except for: Monday to Friday: 7:00am - 9:00am 4:30pm - 6:30pm
Albert Street Railway station	Monday to Saturday 6.30 am – 6.30 pm,	Monday to Friday 6.30 pm – 10.00 pm	24 hours, 7 days	Monday to Friday: 6.30 am – 10.00 pm Saturday 6:30am - 6:30pm
Roma Street Railway station	Monday to Saturday, 6.30am-6.30pm	Monday to Friday 6:30pm- 10:00pm	24 hours, 7 days	Monday to Friday 6.30am - 7.30am 9.00am - 4.30pm 6.30pm - 10:00pm Saturday 6.30am - 6.30pm
Northern portal	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work	24 hours, 7 days	Monday to Friday: 6.30 am – 10.00 pm

Worksite	Surface works—standard hours	Extended work hours	Managed Work	Spoil haulage and materials/equipment delivery
		(Other extended work) Monday to Friday 6:30pm - 10:00pm,		Saturday 6:30am - 6:30pm
Exhibition Railway station	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) Monday to Friday 6:30pm - 10:00pm	24 hours, 7 days	Monday to Saturday: 6:30am - 6:30pm
Mayne Railway Yard	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) Monday to Friday 6:30pm - 10:00pm	24 hours, 7 days	24 hours, 7 days

- (b) Project Works that are underground, or in a ventilated acoustic enclosure, may be undertaken at any time provided the environmental outcomes are achieved.
- (c) Works carried out because of an emergency that:
 - (i) is endangering the life or health of a person; or
 - (ii) is endangering the structural safety of a building; or
 - (iii) is endangering the operation or safety of community infrastructure that is not a building; or
 - (iv) is required to prevent environmental harm, may be undertaken outside the hours set out in Table 1.
- (d) The following work may be undertaken during Extended Work Hours as set out in Table 1. subject to compliance with a specific Construction Environmental Management Plan sub-plan in accordance with Condition 4:
 - (i) Project Works within rail corridor land;
 - (ii) Project Works within a road reserve or busway that cannot be undertaken reasonably nor practicably during standard hours due to potential disruptions to peak traffic flows or bus operations;
 - (iii) Project Works involving the transport, assembly or decommissioning of oversized plant, equipment, components or structures;
 - (iv) delivery of "in time" materials such as concrete, hazardous materials, large components and machinery;
 - (v) Project Works that require continuous construction support, such as continuous concrete pours, pipe-jacking or other forms of ground support necessary to avoid a failure or construction incident.
- (e) Blasting must not occur on public holidays, and is only authorised to occur during the hours of 7:30am to 4:30pm Monday to Saturday, and not on Sundays or public holidays.

- (f) Prior to blasting events, at least 48 hours' notice must be provided to persons who may be adversely affected.

Condition 11. Construction Noise and Vibration

- (a) Project Works must aim to achieve the project noise goals for human health and well-being presented in Table 2.

Table 2. Noise goals (internal) for Project Works

	Monday – Saturday 6.30am – 6.30pm	Monday – Friday 6.30pm – 10.00pm (Gabba, CBD only)	Monday – Saturday 6.30pm – 6.30am Sundays, Public Holidays	For Blasting Monday – Saturday 7.30 am – 4:30 pm only
Continuous (LA_{eq adj})(1hr)	AS 2107 Maximum design level	40 dBA LA _{eq adj} (1hr)	35 dBA LA _{eq adj} (1hr)	130 dB Linear Peak
Intermittent (LA_{10 adj})(15min)	AS 2107 Maximum design level + 10 dBA	50 dBA LA _{10, adj}	42 dBA LA _{10 adj}	

Notes

1. All goals are internal noise levels for human health and well-being outcomes.
2. Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in the relevant State guideline, such as the Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2017 (currently under review).

- (b) During construction monitor and report on noise and vibration in accordance with the Noise and Vibration Management Plan, a sub-plan of the Construction Environmental Management Plan.
- (c) Project Works predicted to or monitored as generating noise levels more than 20dBA (LA_{eq 10min, adj}) above the relevant goal in Table 2. are authorised to occur in a locality only:
 - (i) when advance notification and consultation has been undertaken with Directly Affected Persons or potentially Directly Affected Persons about the particular predicted impacts and the approach to mitigation of such impacts;
 - (ii) where mitigation measures addressing the particular predicted or measured impacts have been developed on a 'case by case' basis in consultation with Directly Affected Persons;
 - (iii) where the mitigation measures are incorporated in a mitigation register and implemented prior to undertaking the Project Works;
 - (iv) between the hours 7:00am to 6:00pm Monday to Friday, with a respite period between 12:00noon and 2:00pm each day;
- (d) Project Works must aim to achieve the construction vibration goals in Table 3.

Table 3. The construction vibration goals

Receiver type	Cosmetic Damage			Human comfort (mm/s PPV)		Sensitive building contents (mms/PPV)
	Continuous vibration (mm/s PPV)	Transient vibration (mm/s PPV)	Blasting vibration (mm/s PPV)	Day	Night	
Residential	According to BS7385 reduced by 50% ⁴	According to BS7385	50 ¹	According to AS2670	0.5 ²	
Commercial	According to BS7385 reduced by 50% ⁴	According to BS7385	50	According to AS2670	-	0.5 ³
Heritage structures	2	-	10	-	-	

Notes:

1. All residential receivers in the vicinity of the Project blasting sites are regarded as reinforced or framed structures (i.e. BS7385)
2. Residential sleep disturbance
3. Equipment specific vibration criteria are required for highly sensitive equipment (i.e. electron microscopes, MRI systems or similar), as part of future site-specific detailed investigations
4. If resonance is present, or if investigation to detect resonance were not able to be undertaken due to a lack of access

- (e) Where vibration protection criteria are available for sensitive building contents, predictive modelling must take into account the manufacturer’s specifications for tolerance to vibration. To the extent reasonable and practicable, those specifications apply in lieu of the construction vibration goals in Table 3. Where predictive modelling indicates the specified criteria would not be achieved by the Project Works, such works may proceed only in accordance with specific mitigation measures agreed with the potentially Directly Affected Persons.
- (f) Project Works predicted to or monitored as generating vibration levels more than 2mm/s for continuous vibration and 10mm/s for transient vibration may occur only:
 - (i) between the hours 7:00am to 6:00pm Monday to Friday, with a respite period between 12:00noon and 2:00pm each day; or
 - (ii) in accordance with the mitigation measures developed in consultation with and agreed by Directly Affected Persons that are incorporated in the Mitigation Register.

Condition 12. Property Damage

- (a) Prior to the commencement of Project Works, predictive modelling must be undertaken of potential ground movement that may be caused by the Project Works. Such predictive modelling must ascertain the potential for damage due to ground movement being caused to property by Project Works.
- (b) Where predictive modelling indicates the Project Works would lead to impacts above the vibration goals for cosmetic damage in Table 3. the proponent must prepare and submit a

property damage sub-plan, prior to the commencement of such works, as part of the Construction Environmental Management Plan. The property damage sub-plan must set out the procedure for:

- (i) advance communication with potentially Directly Affected Persons;
 - (ii) procedures for building condition surveys both in advance of and following Project Works, including provision for consultation with property owners and occupants;
 - (iii) monitoring to be undertaken for potential impacts to property; and
 - (iv) mitigation measures.
- (c) Where a post-construction building condition survey identifies that property damage has occurred as a consequence of the Project Works, such damage must be repaired as soon as practicable by the Proponent at no cost to the property owners. Such repairs must be undertaken in consultation with the property owners and occupants and must return the premises at least to the condition existing prior to commencement of Project Works. The Proponent must agree the timing, method and extent of works required with the affected landowner and must gain permission to undertake such reparation works prior to their commencement.

Condition 13. Air quality

- (a) Project Works must aim to achieve the goals in Table 4.

Table 4. Air quality criteria and goals

Criterion	Air quality indicator	Goal	Averaging period
Human Health	Total Suspended Particulates (TSP)	90 µg/m ³	1 year
	Particulate matter ((PM ₁₀) ¹	50 µg/m ³	24 hours
		25 µg/m ³	1 year
Nuisance	TSP ²	80 µg/m ³	24 hours
	Deposited dust ³	120 mg/m ² /day	30 days

- (b) During construction monitor and report on air quality in accordance with the Air Quality Management Plan, a sub-plan of the Construction Environmental Management Plan.

Condition 14. Traffic and transport

- (a) Project construction traffic must be managed to avoid or minimise adverse impacts on road safety and traffic flow, public transport, freight rail movements, pedestrian and cyclist safety, and property access.
- (b) During construction workforce car parking must be provided and managed to avoid workforce parking on local streets.
- (c) Access for emergency services to project worksites and adjoining properties must be maintained throughout the construction phase.
- (d) Practicable access is maintained to adjacent properties throughout the construction phase.
- (e) Heavy construction vehicles use only designated routes for spoil haulage and deliveries of major plant, equipment and materials, in accordance with the Construction Environmental Management Plan. The designated haulage routes for each worksite must follow major or arterial roads to the extent practicable and be developed in consultation with the Department of Transport and Main Roads and the Brisbane City Council in preparation of the Construction Environmental Management Plan.

- (f) The Construction Traffic Management Plan must be supported by a road safety assessment for the spoil haulage route.
- (g) Construction traffic must operate within the requirements of a construction traffic management sub-plan (Construction Traffic Management Plan) incorporated within the Construction Environmental Management Plan.
- (h) The Construction Traffic Management Plan must include:
 - (i) the proposed access to worksites, with local or minor roads only used where unavoidable to access a project worksite;
 - (ii) a process for advance notice to Directly Affected Persons and local communities within the vicinity of the spoil haulage routes and worksite accesses;
 - (iii) local traffic management measures developed in consultation with Brisbane City Council for key intersections:
 - (A) in Bowen Hills including Bowen Bridge Road, College Road and O'Connell Terrace;
 - (B) in the CBD including Albert Street, Charlotte Street, Elizabeth Street and Roma Street;
 - (C) at Woolloongabba including Leopard Street, Stanley Street, Vulture Street and Main Street;
 - (D) at Dutton Park including Annerley Road, Peter Doherty Street, Joe Baker Street and Boggo Road, as well as Kent Street, Cornwall Street and Ipswich Road;
 - (E) in the area of the Fairfield to Salisbury stations and Clapham Yard works.
 - (iv) specific traffic management measures developed in consultation with other key stakeholders, including:
 - (A) the department administering the *Economic Development Act 2012* with regards traffic management in the Queens Wharf Brisbane priority development area;
 - (B) Queensland Rail about maintaining access to railway stations; and
 - (C) the department administering the *Transport Infrastructure Act 1994* and the Brisbane City Council about maintaining operations for bus services along streets affected by the Project Works.
- (i) Project Works must be designed, planned and implemented to maintain acceptable footpath and cycle paths in areas adjacent to project worksites in terms of capacity, legibility and pavement condition. The proponent must consult with the Brisbane City Council and Queensland Rail about changes in pedestrian and cycle paths required to facilitate Project Works.

Condition 15. Water quality

- (a) Discharge of surface water and groundwater from Project Works must comply with the Brisbane River Estuary environmental values and water quality objectives (Basin no. 143 - mid-estuary) in the Environmental Protection (Water) Policy 2009.
- (b) During construction monitor and report on water quality in accordance with the Water Quality Management Plan, a sub-plan of the Construction Environmental Management Plan.

Condition 16. Water resources

- (a) Prior to the commencement of Project Works involving excavation, the Proponent must undertake predictive modelling of the potential for groundwater drawdown. The predictive

modelling must be based on validated monitoring data and must address the likely extent of any drawdown over time, up to the time when such movement reaches equilibrium.

- (b) Project Works must be designed, planned and implemented to avoid where practicable and otherwise minimise the inflow of groundwater to the Project Works, including excavations, the underground stations and tunnels, having regard for the predictive modelling.
- (c) The Proponent must monitor the inflow of groundwater to the Project Works and compare monitoring data with the predictive modelling. If the rate of groundwater inflow rate exceeds 1L/sec in any worksite, the proponent must revise work methods and devise and implement mitigation measures as soon as practicable.

Condition 17. Surface water

- (a) Project Works, and worksites, must be designed and implemented 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.
- (b) Project works must be designed and implemented to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.

Condition 18. Erosion and sediment control

- (a) An erosion and sediment control sub-plan that is 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 – Erosion and Sediment Control must be submitted as part of the Construction Environmental Management Plan.

Condition 19. Acid sulphate soils

- (a) Acid sulphate soils must be managed in accordance with the methods and requirements of the latest edition of the *Queensland Acid Sulphate Soil Technical Manual*.

Condition 20. Landscape and open space

- (a) Project Works are designed and implemented to minimise impacts on landscape and open space values.
- (b) Project works and worksites in Victoria Park must be designed, planned and implemented to avoid, or minimise the loss of trees and ornamental plantings, and must minimise the area of the park directly impacted during such works.
- (c) Worksites in Victoria Park must be enclosed with a visually solid screen and any night lighting including security lighting must be situated to minimise the spill of light beyond the worksite enclosures.
- (d) Existing pathways and recreational facilities in Victoria Park must be relocated within the park for the duration of the works, in consultation with the Brisbane City Council. Upon completion of the project works, such pathways and facilities must be re-established in locations in the park in consultation with the Brisbane City Council.

Condition 21. Worksite rehabilitation

- (a) Worksites for project infrastructure, such as the surface connections, stations and ancillary buildings must be rehabilitated as soon as practicable upon completion of the works.
- (b) All other worksites required to support commissioning activities must be rehabilitated as soon as practicable on completion of commissioning or sooner where possible.
- (c) Rehabilitation must address soil erosion and sedimentation, dust nuisance and landscape and visual impact.

- (d) Any planting, landscaping and streetscape works undertaken as part of rehabilitation must be undertaken in accordance with landscape and urban design plans prepared in consultation with the Brisbane City Council.

Part D. Imposed Conditions (Commissioning)

Condition 22. Environmental design requirements

- (a) The Proponent must conduct such testing and monitoring as is necessary to demonstrate that the Environmental Design Requirements in Schedule 1 have been satisfied.
- (b) At the completion of Commissioning, the Proponent must give written notice to the Coordinator-General that the Project has achieved the Environmental Design Requirements in Schedule 1.

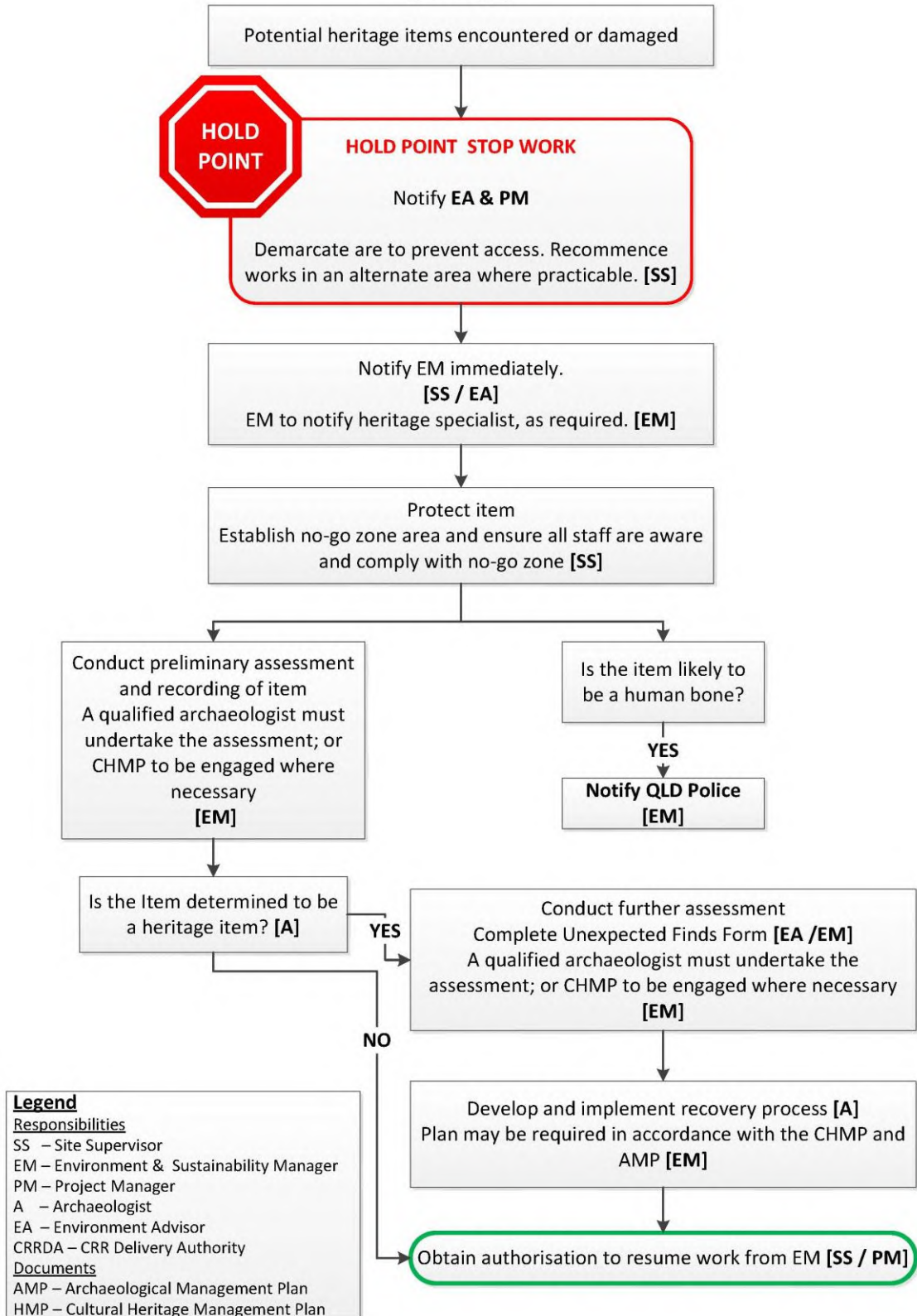
Condition 23. Commissioning

- (a) Commissioning may be carried out in stages.
- (b) Testing for commissioning must be supported by advanced notice to local residents and businesses.
- (c) Testing for commissioning must not cause an exceedance of the goals in Table 2, Table 3, Table 4 or Condition 15.

Appendix E

Unexpected Finds Process (Heritage)

Unexpected Finds Process (Heritage)



Appendix F

Noise and Vibration Information

Sound Power Levels for Equipment

Aspect	Plant/Equipment	Net Power (kW)	Operating Weight (kg)	Day (7am – 6pm)	Sound Power Level LAeq	Notes
Demolition of existing structures	Excavator with bucket	120	45 tonne	4	103	Typically 45T, but possibly up to 90T for large commercial areas. There may be up to 4 properties under demolition concurrently
	Excavator with rock hammer		45 tonne	4	122	
	Excavator with shears / crusher		45 tonne	2	120	
	Longreach excavator and attachments		45 tonne	1	122	
	Truck and Dog / Semi Trailer	120		8 p.h.	108	
	Mobile screening equipment			1	120	
	Mobile crushing equipment			1	120	
Vegetation Clearing	Excavator with bucket	120	35 tonne	2	103	Surface 1-2 weeks
	Chainsaw			1	116	Surface 1-2 weeks
	Tub grinder/mulcher			1	120	Surface 1-2 weeks
	Small truck		<20 tonne	4 p.h.	107	Surface 1-2 weeks
Installation of enviro controls	Excavator with bucket	120	35 tonne	2	103	Surface 1-2 weeks
	Franna Crane	205	20 tonne	1	99	Surface 1-2 weeks
	Small truck		<20 tonne	4 p.h.	107	Surface 1-2 weeks
Establishment of construction facilities	Excavator with bucket	120	35 tonne	2	103	Surface 1-2 weeks
	Franna Crane	205	20 tonne	1	99	Surface 1-2 weeks
	Mobile Crane		50 tonne	1	103	Surface 1-2 weeks
	Concrete Aquitor			4 p.h.	108	Surface 1-2 weeks
	Concrete Pump/Boom Pump			1	99	Surface 1-2 weeks
	Grader			1	113	Surface 1-2 weeks
	Roller/ Compactor			1	109	Surface 1-2 weeks
	Plate Compactor			1	106	Surface 1-2 weeks
	Water cart		15kL	4 p.h.	104	Surface 1-2 weeks
	Semi trailer			4 p.h.	108	Surface 1-2 weeks
Small truck		<20 tonne	4 p.h.	107	Surface 1-2 weeks	

Aspect	Plant/Equipment	Net Power (kW)	Operating Weight (kg)	Day (7am – 6pm)	Sound Power Level LAeq	Notes
Road and intersection modifications and installation of traffic controls	Truck and Dog / Semi Trailer	205	20 tonne	1	99	
	Scissor Lift			1	95	
	Franna Crane	205	20 tonne	1	99	
	Skidsteer (Bobcat) with bucket and profiler			1	99	General, profiling minor AC
	Excavator with bucket and rockhammer		15 tonne	1	118	Remove medians, kerb lines etc
	Asphalt Paver			1	112	Road works - as per tie-in works
	Roller / Compactor			1	109	
	Road Saw			1	119	
	Line marking truck			1	108	
Utility Adjustments	Road saw			1	119	
	Excavator with bucket with hammer		up to 20 tonne	1	118	
	Plate Compactor			1	106	
	Small Truck		<20 tonne	4 p.h.	107	
	Skidsteer (Bobcat) with bucket and profiler			1	99	
	Roller / Compactor			1	109	
General worksite and car parking	Light vehicle	80		20 p.h.	89	Surface; Compound and car park will operate for the entire duration of construction works. Bust on shift changes only. Night movement entry via Levey St
	Water treatment plant pumps	10		2	78	
Workshops, Deliveries, Maintenance, Storage	Road truck (deliveries to site)			4 p.h.	108	Surface
	Compressor	110	2660	2	78	Surface
	Workshop Hand Tools			1	107	Surface; Partial enclosure (3 sided with roof) over workshop, Limited use OOHW
	Franna Crane	205	20 tonne	1	99	Surface: Limited use EVE: Not used at NGT
	Telehandler			1	99	106

Aspect	Plant/Equipment	Net Power (kW)	Operating Weight (kg)	Day (7am – 6pm)	Sound Power Level LAeq	Notes
	Diesel Generator			1	94	
	Washdown Bay / High pressure gurney			1	97	
	Water cart		15kL	4 p.h.	104	Surface
Piling	Piling Rig (bored piles)			4	111	
	Crawler Crane		35-50 tonne	1	98	Piling support crane
	Concrete Pump/Boom Pump	130		1	99	
	Excavator with bucket	150	35 tonne	1	103	
	Concrete Aoi	120		5 p.h.	108	
	Concrete Saw			1	119	Pile cut-off and breakdown
	Compressor			4	70	
	Jackhammers			4	121	Pile cut-off and breakdown

Noise sound power levels – LAeq

Precinct	Aspect	Plant	Number of plant			Sound Power Level LAeq
			6:30am – 6:30pm	6:30pm – 10pm	10pm – 6:30am	
Roma Street	Piling and excavation	Piling Rig	1	-	-	114
		Concrete Pump	2	-	-	99
		Excavator with bucket	1	-	-	104
		Concrete Agitator	5 p.hr	-	-	108
	Demolition and establishment	Excavator with rockhammer	3	-	-	119 + 5 penalty
		Excavator with bucket	1	-	-	103
		Excavator with breakers	2	-	-	103
		Excavator with bucket	2	-	-	101

Precinct	Aspect	Plant	Number of plant			Sound Power Level L _{Aeq}
			6:30am – 6:30pm	6:30pm – 10pm	10pm – 6:30am	
		Skidsteer	4	-	-	107
		Concrete Saw	2	-	-	121
		Mobile Crane	1	-	-	106
		Small Truck	4 p. hr	-	-	107
		Tower Cranes	1	-	-	102
		EWPs	2	-	-	97
		Truck & Dog	4 p. hr	-	-	108
		Small tools	2	-	-	107
Woolloongabba	Piling	Piling Rig	3	-	-	112
		Mobile cranes	3	-	-	99
		Concrete Pump	2	-	-	99
		Excavator with bucket	1	-	-	103
		Concrete Saw	1	-	-	124
		Rockhammer on 13t excavator	1	-	-	113 + 5 penalty
		Concrete Agitator	5 p. hr	5 p. hr	-	108
	Piling Pad Construction	Truck and dog	4 p. hr	-	-	108
		Grader or D6	1	-	-	106
		Vibrating roller	-	1	-	108
	Site Establishment (Steel works)	Semitrailer	3 per day	-	-	107
		Franna	1	-	-	98
		Mobile Crane	1	-	-	95
		Air Compressor	1	-	-	109

Precinct	Aspect	Plant	Number of plant			Sound Power Level L _{Aeq}
			6:30am – 6:30pm	6:30pm – 10pm	10pm – 6:30am	
		Rattle guns and small tools	1			107
	Establishment of construction facilities	Excavator with bucket	3			104
		EWPs	2			97
		Mobile Crane	1			106
		Small truck	4 p.hr			107
		Truck and Dog	4 p.hr			108
Boggo Rd	Installation of Environmental Controls	Excavator with bucket	2	-	-	103
		Franna Crane	1	-	-	99
		Small Truck	2 p. hr	-	-	107
	Demolition	Excavator with bucket	2	-	-	103
		Truck and Dog	2 p. hr	-	-	108
	Vegetation Clearing	Excavator with bucket	2	-	-	103
		Truck and Dog	2 p. hr	-	-	108
	Establishment of Construction facilities	Excavator with bucket	2	-	-	103
		Franna Crane	1	-	-	99
		Small Truck	2 p. hr	-	-	107
	Piling	Piling Rig	2	-	-	112
		Franna Crane	1	-	-	99
		Concrete Agitator	3 p. hr	-	-	108
		Concrete Pump	1	-	-	99
		Excavator with bucket	1	-	-	103

Precinct	Aspect	Plant	Number of plant			Sound Power Level L _{Aeq}
			6:30am – 6:30pm	6:30pm – 10pm	10pm – 6:30am	
		Concrete Saw	1	-	-	124
		Rockhammer on 13t excavator	1	-	-	119 + 5 penalty
Albert St stage 1	Site Establishment	Excavator with bucket	2	-	-	103
		Franna Crane	1	-	-	99
		EWPs	2			97
		Small truck	4 p.hr			107
	Demolition Lots 1 and 2	Excavator with bucket	2	-	-	103
		Excavator with rockhammer	2	-	-	121
		Truck and Dog	2 p. hr	-	-	108
Albert St stage 2	Demolition lot 1	Excavator with bucket	1	-	-	103
		Excavator with rockhammer	1	-	-	121
		Truck and Dog	2 p. hr	-	-	108
	Piling lot 2	Piling Rig	1	-	-	113
		Excavator with bucket	1	-	-	103
		Franna Crane	1	-	-	99
		Concrete Agitator	5 p. hr	5 p. hr	-	108
		Concrete Pump	1	-	-	99
	Laydown area	Franna Crane	1	-	-	99
		Road track	4 p. hr	-	-	108
	Laydown area	Franna Crane	1	-	-	99

Precinct	Aspect	Plant	Number of plant			Sound Power Level L _{Aeq}
			6:30am – 6:30pm	6:30pm – 10pm	10pm – 6:30am	
Albert St stage 3		Road track	4 p. hr	-	-	108
		Water treatment plan plus pumps	2	2	2	78
	Piling Lot 1	Piling Rig	1	-	-	113
		Excavator with bucket	1	-	-	103
		Franna Crane	1	-	-	99
		Concrete Agitator	5 p. hr	-	-	108
		Concrete Pump	1	-	-	99

Vibration

Plant Noise Source	Typical PPV Vibration (mm/s) at distance from plant							
	5m	10m	15m	20m	30m	40m	50m	100m
Bobcat (Mustang 2054)	<1	-	-	-	-	-	-	-
Compactor (852G)	5.3	2.0	2.2	1.4	<1	-	-	-
Dozer (D810) (with ripper)	<2	-	-	-	-	-	-	-
Drilling machine – Pneumatic (Atlas Copco (ROC 812HC 20T)	3.2	1	-	-	<0.1	-	<0.1	-
Drilling Rig – Air Trac Rotary (Ingersoll/Rand CM350)	4.4	1.4	-	-	0.6	-	<0.1	-
Drilling Rig – Tracked (Samsung SE 240 LC3 18T)	<2	-	-	-	-	-	-	-
Excavator ≤30T (travelling)	8.0	3.4	1.6	-	-	-	-	-
Excavator ≤30T (digging)	5.8	4.0	0.0	-	-	-	-	-
Excavator & Rock Hammer 20t	4.5	1.3	-	0.4	0.2	0.15	0.02	-
Excavator & Rock Hammer 27t	10.5	2.5	-	-	-	-	-	-
Excavator & Rock Hammer 50 t [^]	20	5	-	3	1	<1	-	-
Grader (20 tonne)	2.0	-	0.2	-	-	-	-	-
Jack hammers	2.0	1.0	0.2	0.1	0.0	0.1	-	-
Piling Rig – Bored (Soilmec 60T) *	2.4	0.2	0.2	-	-	-	-	-
Rocksaw (Komatsu AVANCE PC300)	1.5	-	-	-	-	-	-	-
Truck traffic (over normal (smooth) road surfaces)	1	0.2	-	0.05	-	0.02	-	-
Truck traffic (over irregular surfaces)	-	2.0	-	0.1	-	-	-	-
Vibratory Roller ≤ 3T (Smooth Drum)#	8.7	5.4	-	-	-	-	-	-
Vibratory Roller ≤ 8T (Pad Footed)#	9-12	3.1	-	-	-	-	-	-
Vibratory Roller ≤ 17T (Smooth Drum)	24.5	8.9	4.2	-	-	-	-	-

Notes: Source – Renzo Tonin & Associates database

* data based on sand/clay soil conditions

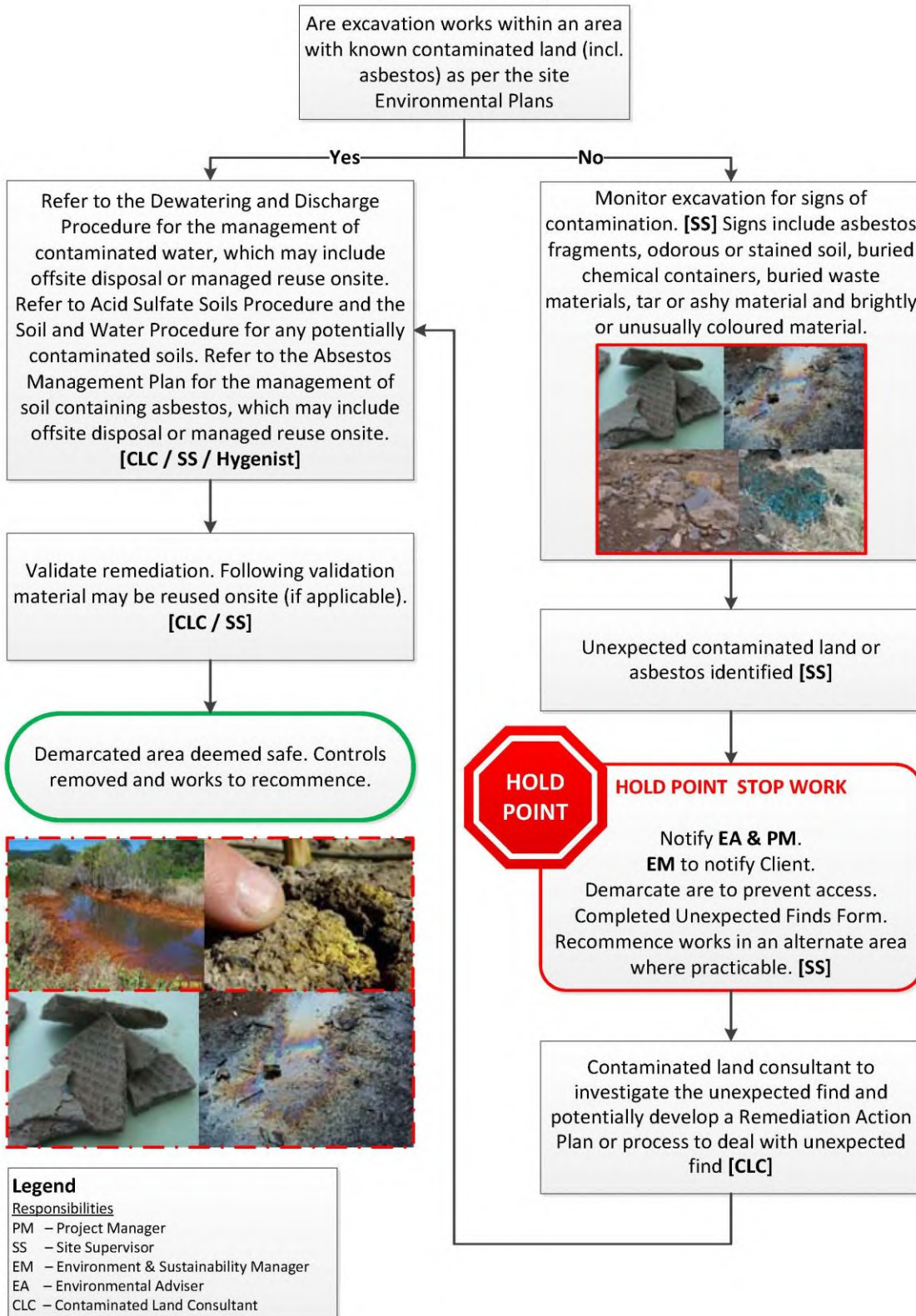
Monitor mounted on plate in sands

[^] Vibration data not available. Vibration levels approximated. Vibration monitoring recommended when plant on site.

Appendix G

Unexpected Finds (Contaminated Land) Process

Unexpected Finds Process (Contamination)



Appendix H

Soil and water procedure

Soil and Water Procedure

Introduction

Objectives

To correctly test and treat site water to ensure potential impacts from dewatering are minimised during construction and comply with the Environmental Authority (EA) that applies to the site investigation activities.

Training

All personnel are to undertake project inductions identifying their environmental and compliance. Obligations and responsibilities relevant to dewatering procedures will be included in project induction, daily pre-start or activity-specific pre-start briefings, toolbox talks or targeted environmental training as appropriate.

Dewatering and discharge procedure

Discharge locations

The discharge points are ponded waters/basins, these will be sampled as per this procedure. The station precincts are classified as middle estuary. The relevant water quality objectives to protect aquatic ecosystem environmental value is listed in the Table 1 below.

Water quality criteria

Water quality criteria that must be met prior to any offsite discharge point to the environment or onsite reuse are provided in the table below. Where field sampling is required, appropriately calibrated monitoring equipment as nominated below shall be used.

Table 1 Water quality criteria for discharge to environment from discharge locations or for onsite reuse

Parameter	Project Limits	Method of assessment	Frequency	Quality Control
Offsite discharge				
pH	7.0 – 8.4 **	probe	(a) less than 24 hours prior to a controlled discharge and daily for any continued controlled discharge; and (b) when rainfall causes a discharge from a basin which has not been	1 in 20 lab tested
Total suspended solids	<20 mg/L**	Laboratory analysis of grab sample		N/A
Turbidity*	<8 NTU **	Water quality meter		1 in 20 lab tested
Chlorophyll a	<4 µg/L **	To be undertaken in accordance with the Monitoring and Sampling Manual		To be undertaken in accordance with the Monitoring and Sampling Manual
Total nitrogen	<300 µg/L **			
Oxidised N	<10 µg/L **			
Ammonia N	<10 µg/L **			
Organic N	<280 µg/L **			
Total	<25 µg/L **			

Parameter	Project Limits	Method of assessment	Frequency	Quality Control
phosphorus		Environmental Protection (Water) Policy 2009.	emptied within 5 days of the cessation of a rainfall event.	Environmental Protection (Water) Policy 2009.
Filterable reactive phosphorus (FRP)	<6 µg/L **			
Dissolved oxygen	20th -80th percentile) 85-105% saturation **			
Secchi depth	>1.0 m **			
Oil and grease	None visible**	Visual inspection		N/A
Colour	No visible discoloration	Visual inspection		N/A
Onsite reuse				
Oil and grease	None visible	Visual inspection		N/A
pH	6.5-8.5	pH meter		1 in 20 lab tested

* A statistical correlation must be developed that identifies the relationship between NTU and TSS to determine the NTU equivalent of 50 mg/L TSS before NTU is used as a criteria. The statistical correlation assessment and methodology will be made available at the request of the EPA.

** Established by The Environmental Protection (Water) Policy 2009 - Brisbane River environmental values and water quality objectives – Basin No. 143 (part) including all tributaries of the Brisbane River (July 2010).

Monitoring

Water quality monitoring of the pollutants nominated in the table above using the identified sampling method and units of measure will be undertaken at the prescribed sample frequency.

Unless otherwise approved, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area, must be undertaken in accordance with the Monitoring and Sampling Manual.

Discharge Procedure

All discharges are to be in accordance with the conditions described in the Permit to Dewater.

In order to prevent the discharge of sediment laden waters, the following measures must be adhered to:

- Use suitable dewatering inlet protection devices (i.e. float and housing or extraction tube) to prevent the extraction of settled sediments within the basin.

- Dewatering inlet devices must be placed at a sufficient distance from basin inlets and above the sediment storage zone.

Examples of suitable dewatering inlet devices are shown in Attachment 1.

Basin signage must be updated when conditions change to reflect the following scenarios:

1. Red - do not discharge, basin unable to receive water
2. Red – do not discharge, basin able to receive water
3. Green – basin ok to discharge, basin unable to receive water

Indicative basin signage is shown in Attachment 2.

Reuse options

All onsite reuse options are to be explored before any offsite discharges are permitted. Reuse of onsite water may be required for the following construction activities (but not limited to):

- Dust control
- Compaction
- Wash down
- Vegetation establishment / rehabilitation.

Water treatment

Where water can be made suitable for discharge, water treatment should occur within 24 hours following each storm event and the basin should be drained once suspended solids levels are less than 50 milligrams per litre.

Where the water cannot be made suitable (e.g. due to contamination) refer to Construction Worksite Management Plan for disposal guidelines.

Neutralising water by adjusting pH levels

- If the water is above pH 8.4, hydrochloric acid (32% muriatic) or suitable alternative is used to lower the pH; and
- If the water is below pH 7.0 a base such as Calcium Hydroxide (Lime) or suitable alternative is used to raise the pH.

Determine quantity of lime or acid required by taking a 10 litre test sample of basin water and adding a known amount of lime or acid (initially 0.004%) and re-test. Vary the amount of lime/acid until within adopted limits. Once the required percentage is determined, calculate required volume of acid/lime for the basin by multiplying volume of water in basin by the determined percentage. Ensure thorough mixing after addition of acid/lime.

Turbid Water

If the TSS is greater than 20mg/L then the sediment must be settled out if water is to be released to a licensed discharge point. Treating the water with flocculent (e.g. gypsum) will make the sediment settle. Contact the environment team for advice. Application rates should be based on industry

guidelines and / or manufactures specifications; typical dosing rates of 30kg of gypsum per 100m³ of water.

NOTE: an even application over the captured water is essential for effective flocculation (e.g. use a spray or similar device to circulate the water and wait for the sediment to settle out). Typical timeframe for treatment to take effect is 8-12 hours. Environmental Advisor to test water to ensure water quality criteria cited in the table above has been met prior to pumping.

Oil and grease

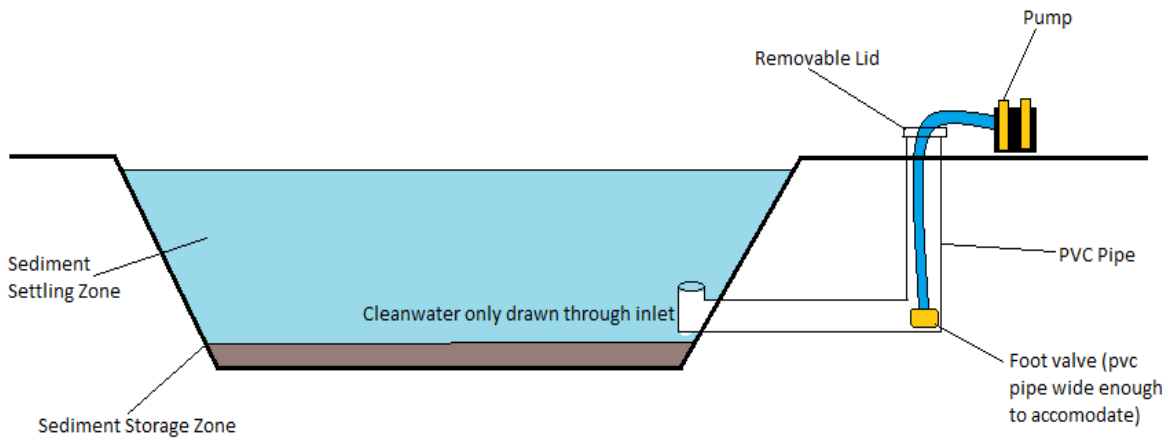
- Examine the surface of the water for visual evidence (e.g. sheen or discolouration); and
- If oil or grease contamination is present, spread absorbent material over the surface (or similar surfactant).

Erosion and sedimentation control

Erosion and sedimentation controls must be maintained at all sites at all times as per the Site Environmental Plans (SEPs). Sedimentation basins must be maintained and sediment should be regularly removed to ensure inlets to dewatering systems are above sediment levels.

Attachments

Attachment 1 Dewatering inlet protection



Typical detail – basin dewatering inlet structure



Ensure inlet is positioned above settled solids to stop sediment being sucked into the pipe



Floating inlet alternative to keep inlet above settled sediment

Attachment 2 Sediment Basin Signage

BASIN NUMBER _____

DISCHARGE STATUS:


RED = Do not discharge

GREEN = Basin has been tested
and approved. Discharge
on listed date / time only.

DO NOT
DISCHARGE
BASIN

DO NOT DISCHARGE WATER FROM THIS POINT UNLESS IT HAS BEEN TESTED AND APPROVED BY THE ENVIRONMENTAL TEAM.

Environmental Team: WestConnex M1 East



**DISCHARGE
APPROVED**

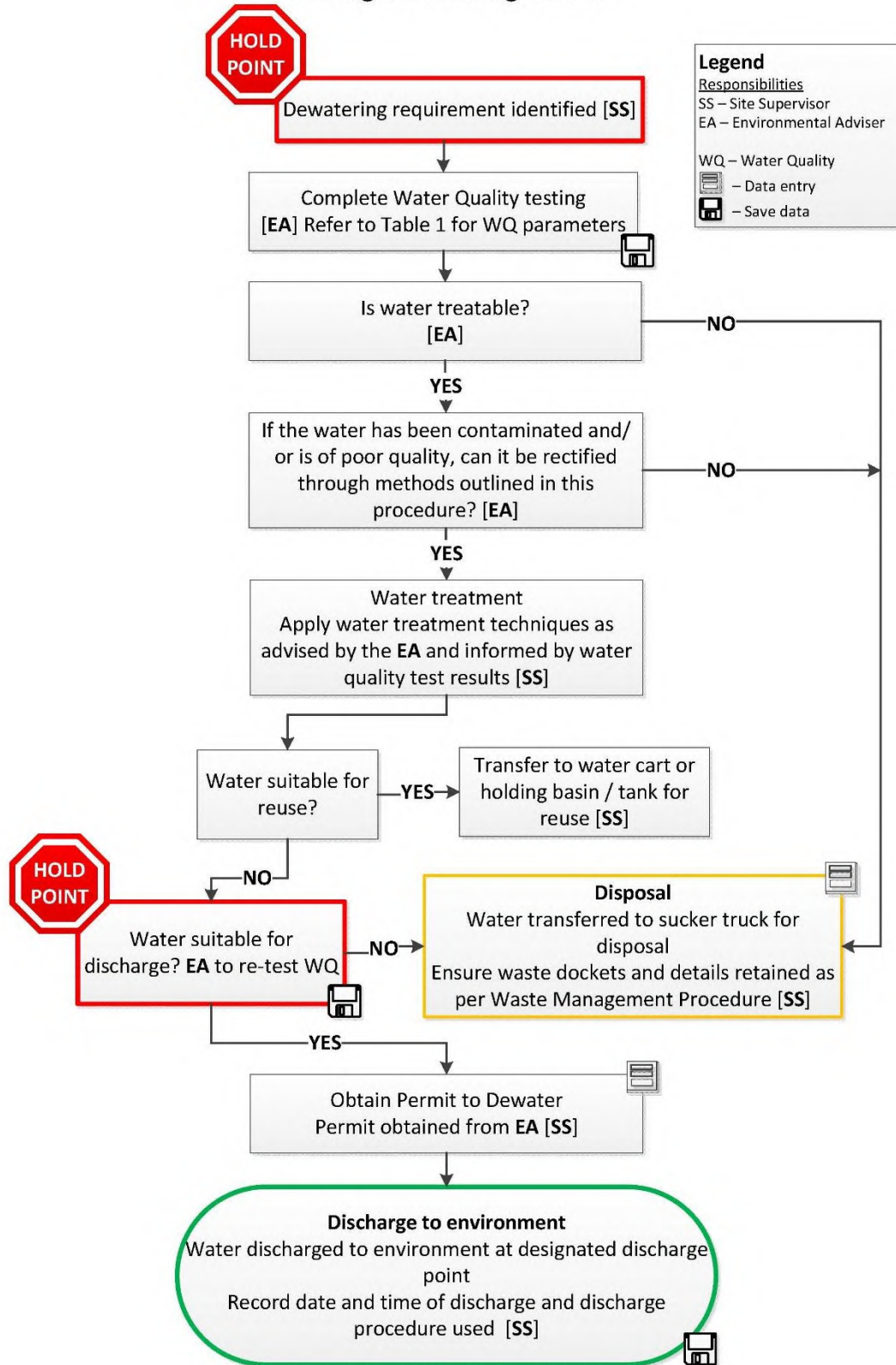
Date / Time _____

Approved By _____

Appendix I

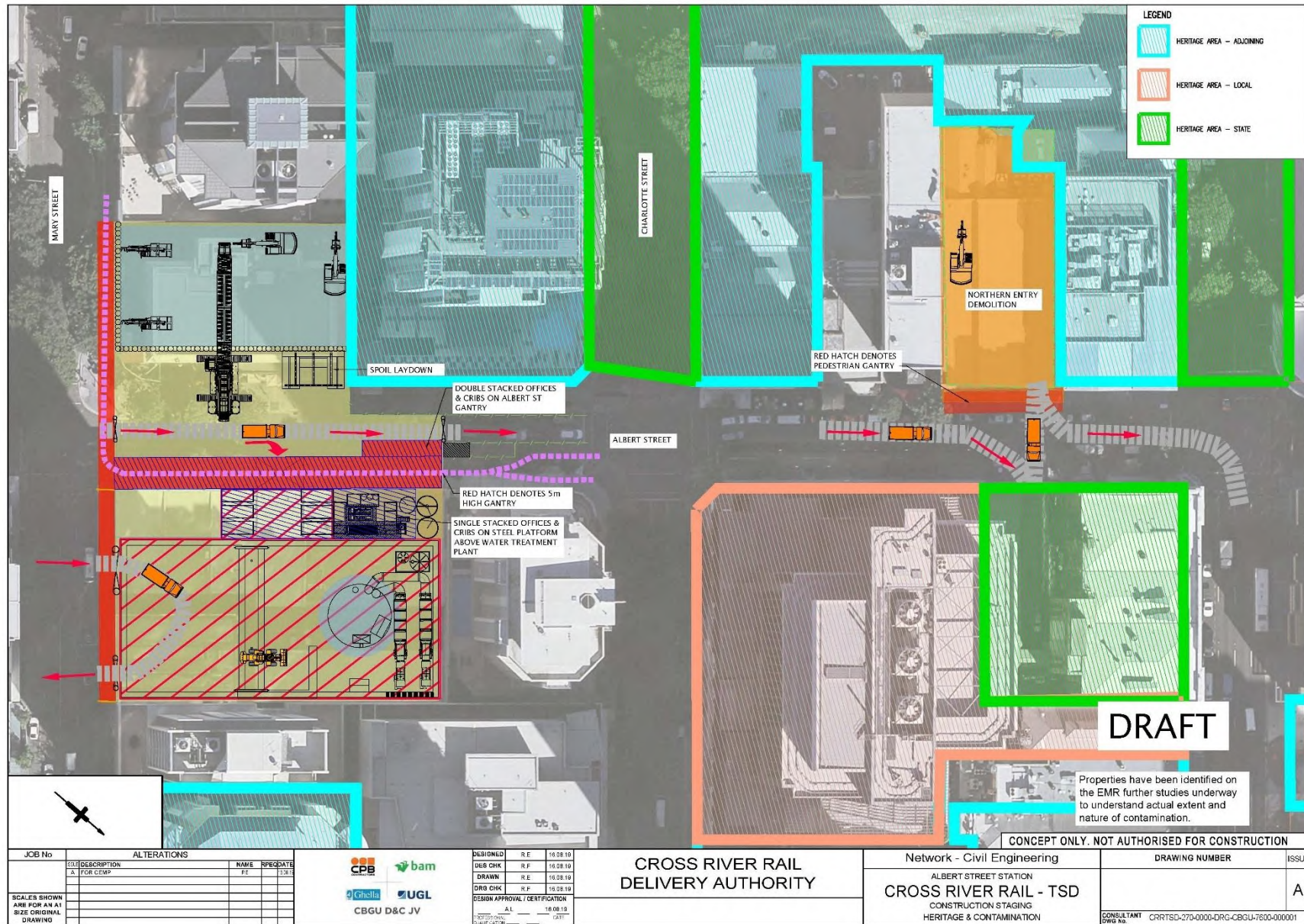
Dewatering Process

Dewatering and Discharge Process



Appendix J

Environment Constraints Maps



JOB No	ALTERATIONS		
REV	DESCRIPTION	NAME	REQDATE
A	FOR COMP	R.E	13.08.19

CBGU D&C JV

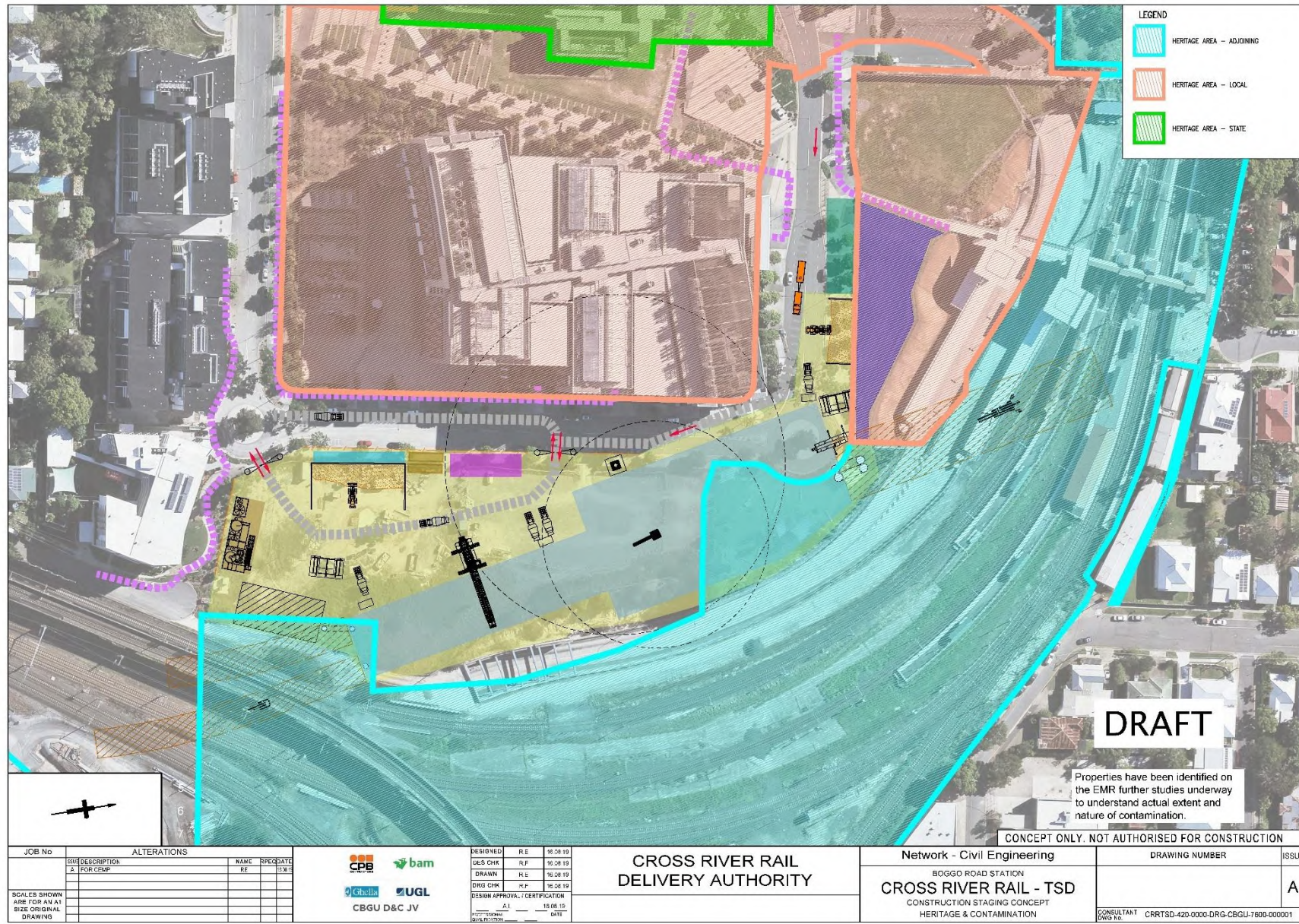
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DESIGN CHK	R.F	19.08.19
DRAWN	R.E	19.08.19
DRG CHK	R.F	19.08.19
DESIGN APPROVAL / CERTIFICATION		

CROSS RIVER RAIL DELIVERY AUTHORITY

Network - Civil Engineering
 ALBERT STREET STATION
CROSS RIVER RAIL - TSD
 CONSTRUCTION STAGING
 HERITAGE & CONTAMINATION

DRAWING NUMBER	ISSUE
	A

CONSULTANT DRG No. CRRSD-270-0000-DRG-CBGU-7600-000001

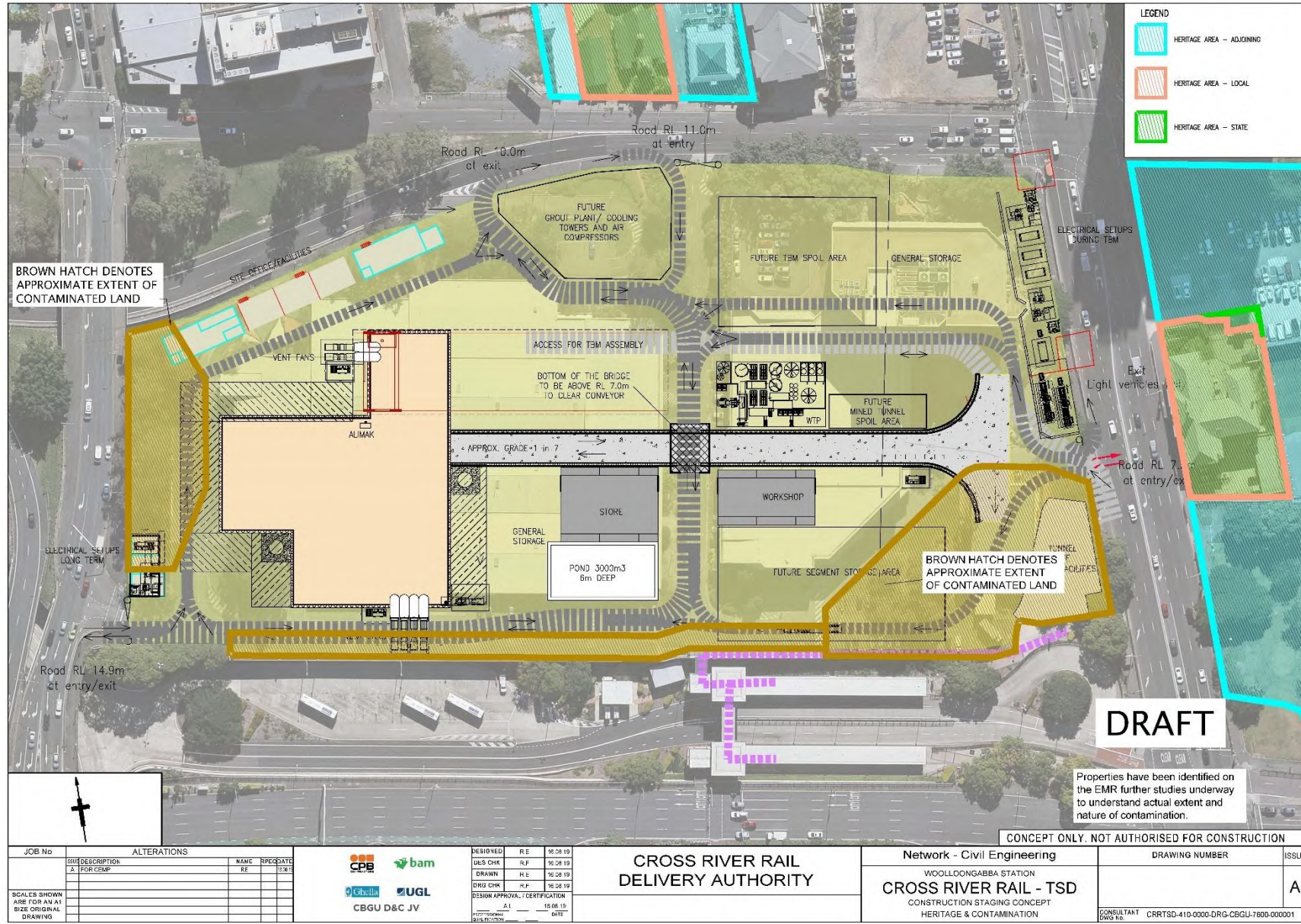


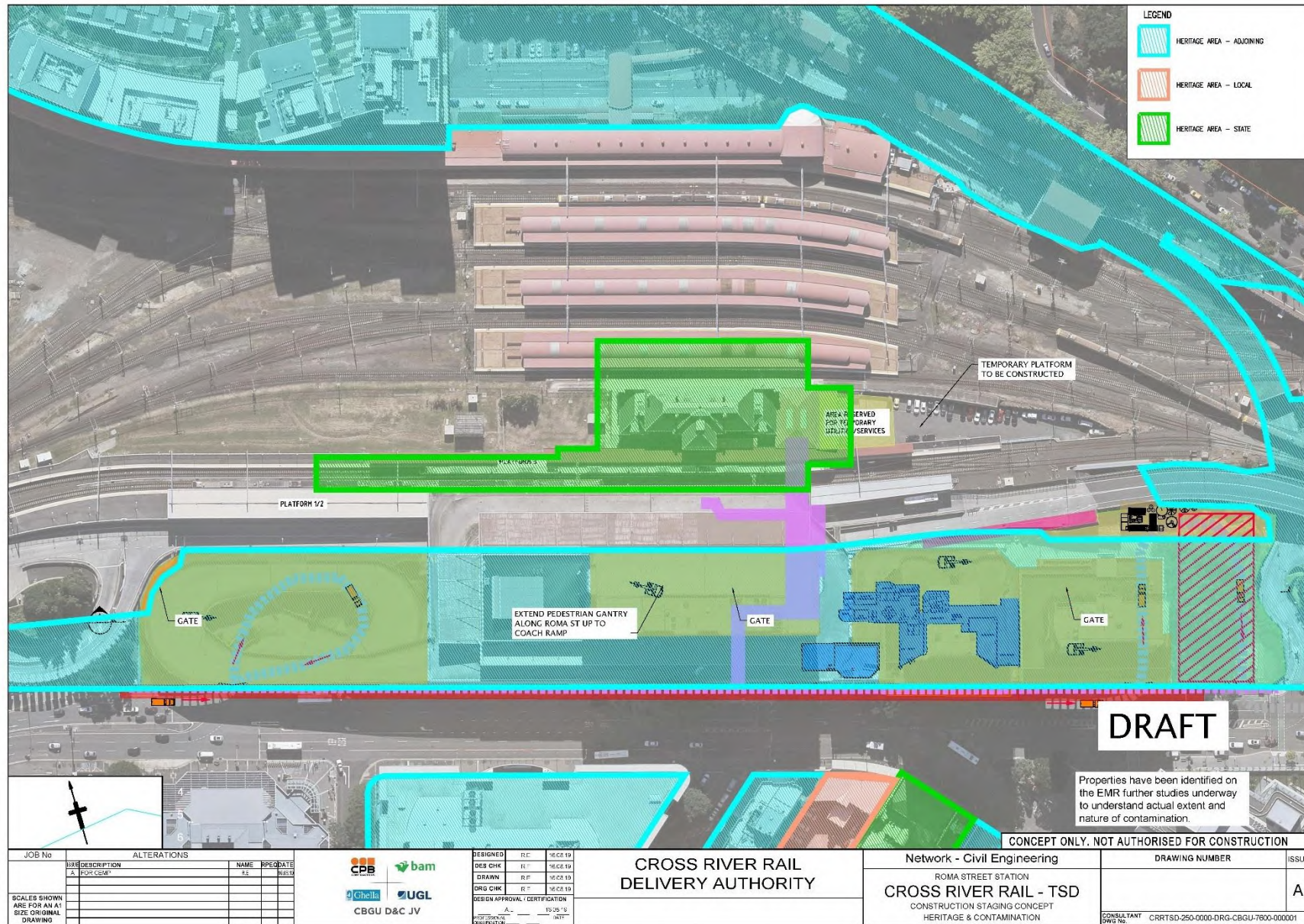
DRAFT

Properties have been identified on the EMR further studies underway to understand actual extent and nature of contamination.

CONCEPT ONLY. NOT AUTHORISED FOR CONSTRUCTION

JOB No: ALTERATIONS SUB DESCRIPTION: S FOR CBGP NAME: RPEC/DATE: RF: 13/08/19 SCALES SHOWN ARE FOR AN A1 SIZE ORIGINAL DRAWING		 CBGU D&C JV		DESIGNED: R.E. 10/08/19 ULS CHK: R.F. 10/08/19 DRAWN: R.E. 10/08/19 DRG CHK: R.F. 10/08/19 DESIGN APPROVAL / CERTIFICATION: 10/08/19 DATE: 10/08/19		CROSS RIVER RAIL DELIVERY AUTHORITY		Network - Civil Engineering BOGGO ROAD STATION CROSS RIVER RAIL - TSD CONSTRUCTION STAGING CONCEPT HERITAGE & CONTAMINATION		DRAWING NUMBER: [Blank] ISSUE: A	
CONSULTANT DRG No. CRRTSD-420-0000-DRG-CBGU-7600-000001											





JOB No	ALTERATIONS			
B/S#	DESCRIPTION	NAME	REPO DATE	BY/APP
1	POW/CEM	S.L.		

SCALES SHOWN ARE FOR AN A1 SIZE ORIGINAL DRAWING

CBGU D&C JV

DESIGNED	R.P.	16.08.19
DES CHK	R.P.	16.08.19
DRAWN	R.P.	16.08.19
DRG CHK	R.P.	16.08.19
DESIGN APPROVAL / CERTIFICATION		

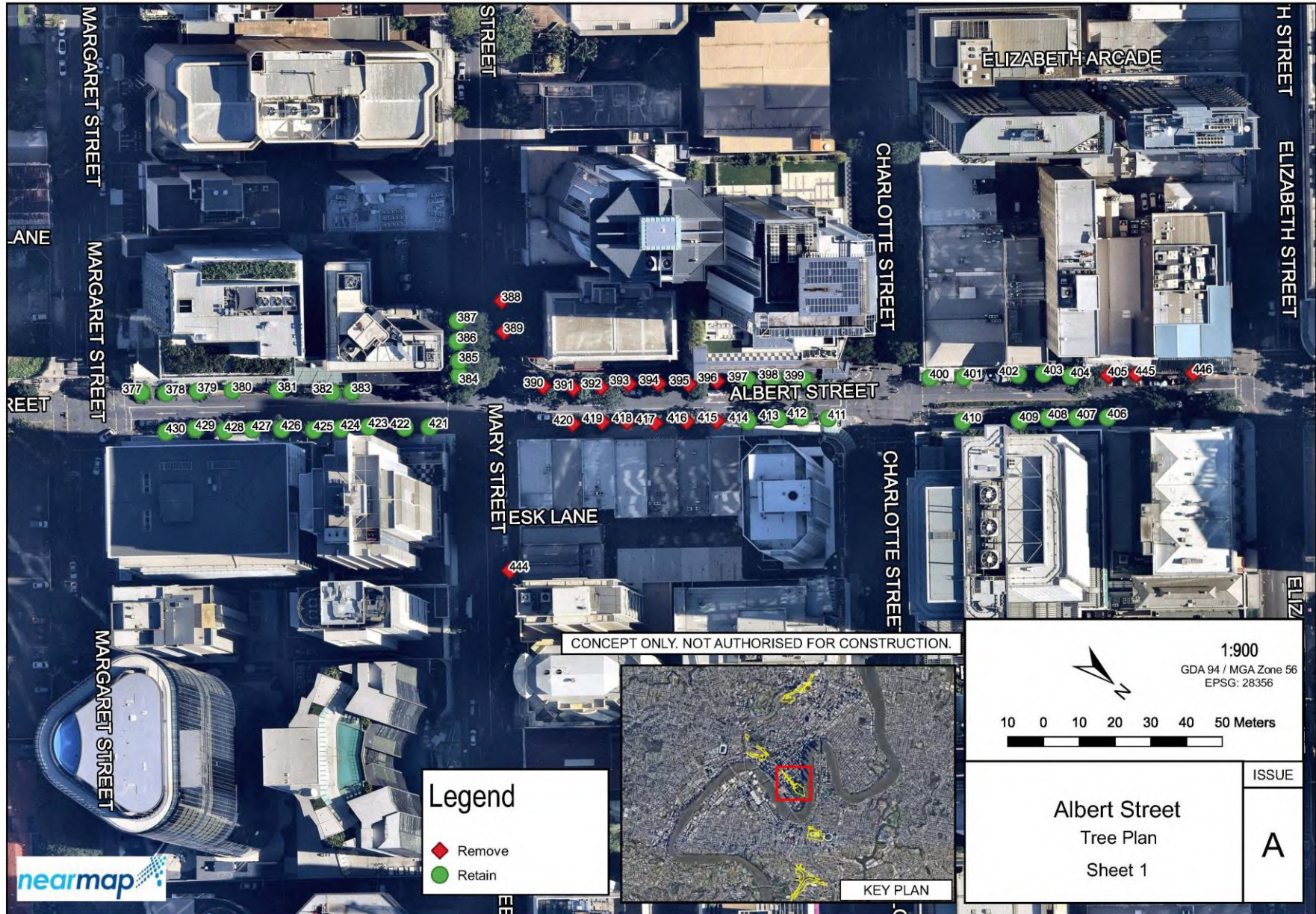
CROSS RIVER RAIL DELIVERY AUTHORITY

Network - Civil Engineering
 ROMA STREET STATION
CROSS RIVER RAIL - TSD
 CONSTRUCTION STAGING CONCEPT
 HERITAGE & CONTAMINATION

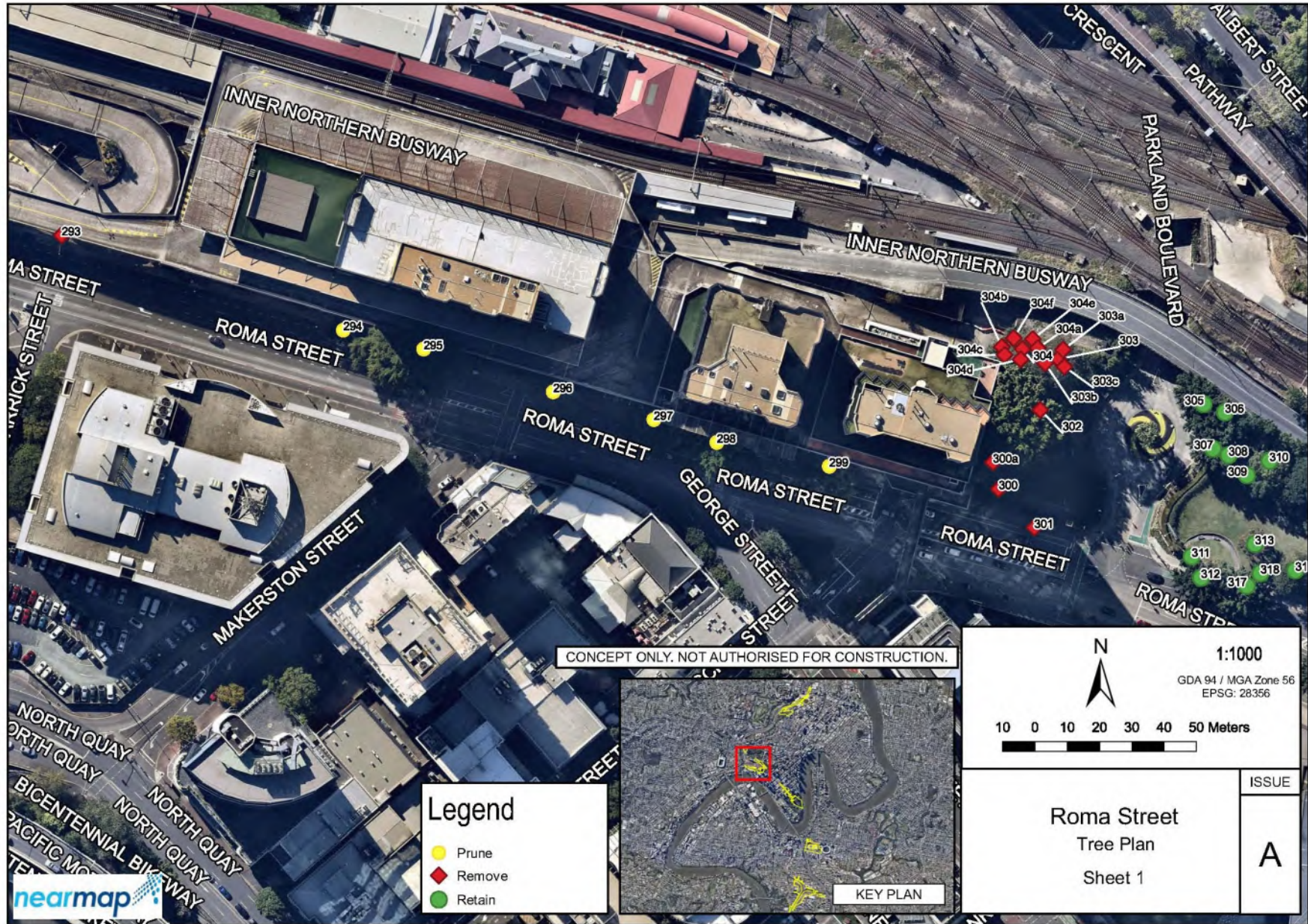
DRAWING NUMBER	ISSUE
	A
CONSULTANT DRG No.	CRRTSD-250-0000-DRG-CBGU-7600-000001

Appendix K

Vegetation Retention Maps



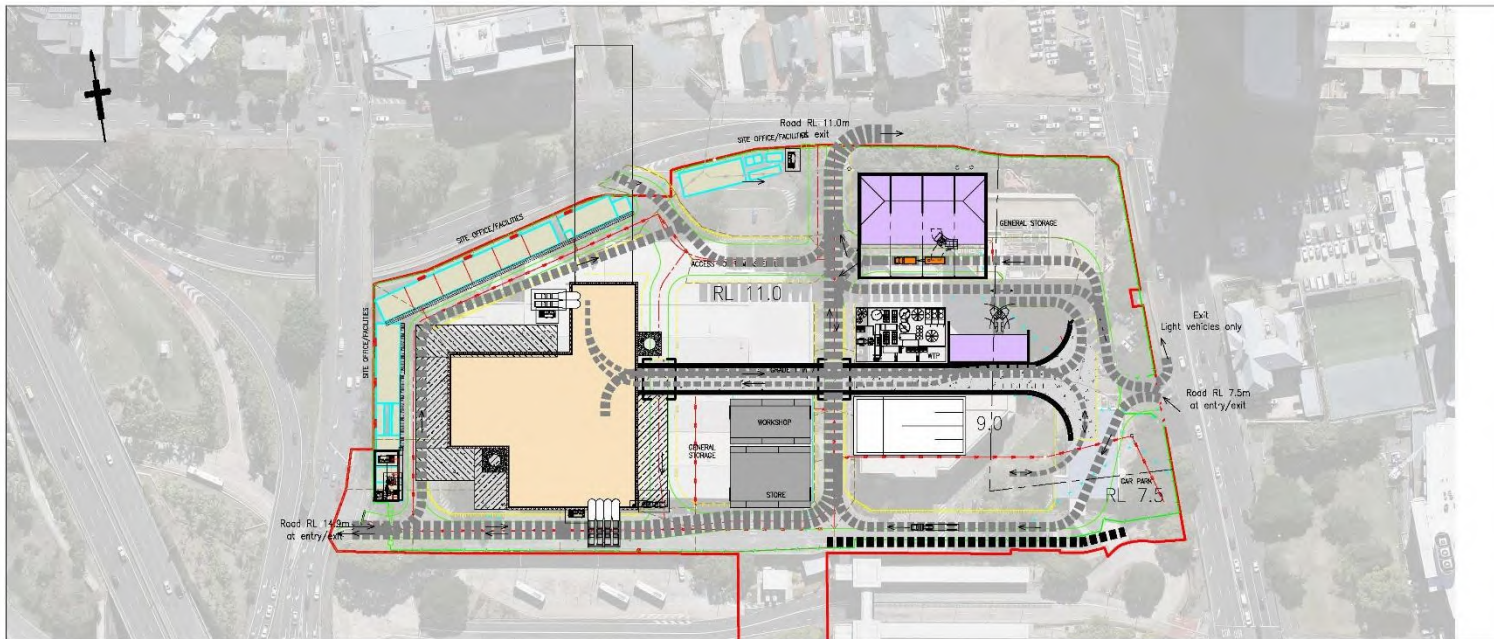




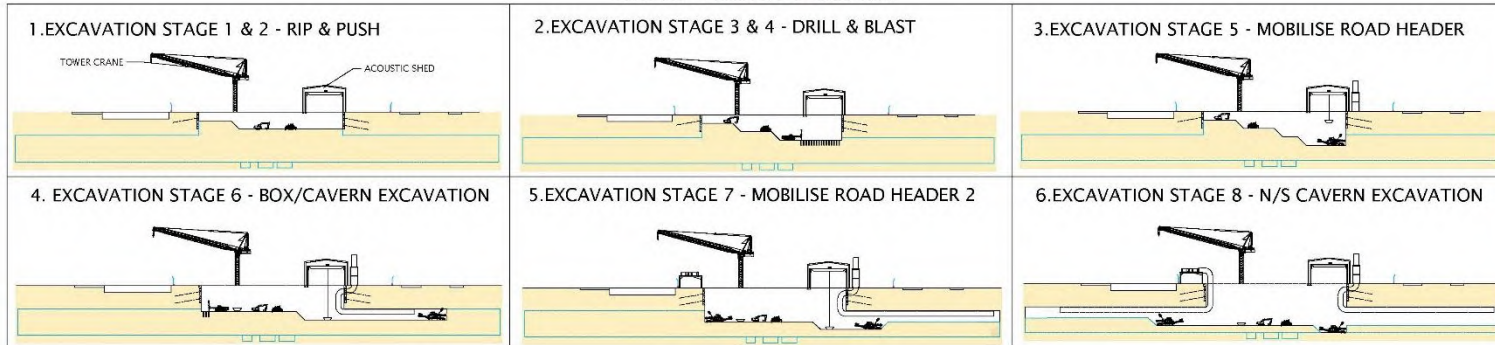


Appendix L

Site Layouts

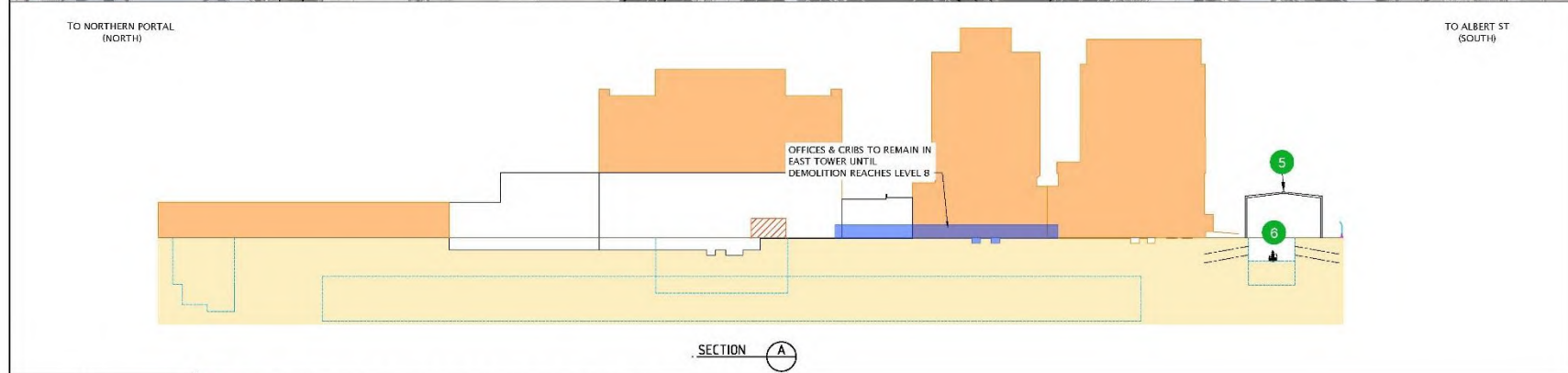
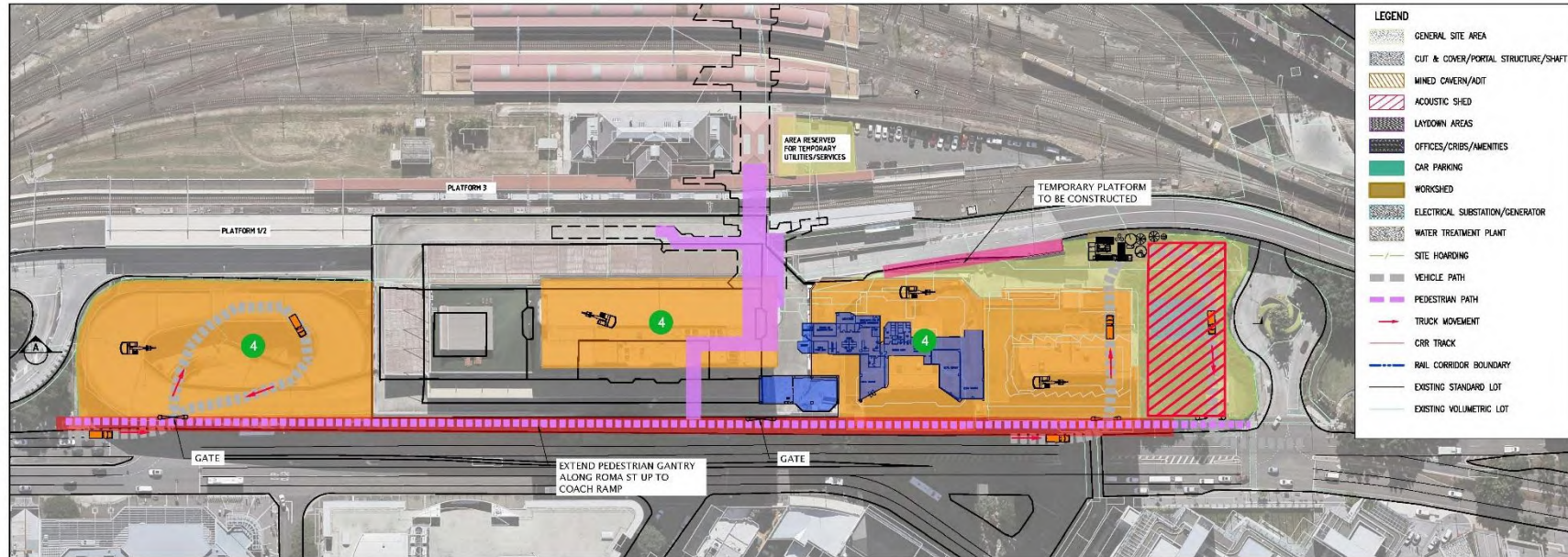


BOX AND CAVERN EXCAVATION



STAGE 2

JOB No		ALTERATIONS		<p>CPB CONTRACTORS bam Ghella UGL CBGU D&C JV</p>	DESIGNED: S.B. 11.07.19 DES. CHK: S.B. 11.07.19 DRAWN: R.P. 11.07.19 DRG CHK: C.M. 11.07.19 DESIGN APPROVAL / CERTIFICATION: A.L. 11.07.19 11.07.19	CROSS RIVER RAIL DELIVERY AUTHORITY		Network - Civil Engineering WOOLLOONGABBA STATION CROSS RIVER RAIL - TSD CONSTRUCTION STAGING CONCEPT STAGE 2		CONCEPT ONLY. NOT AUTHORISED FOR CONSTRUCTION	
SCALES SHOWN ARE FOR AN A1 SIZE ORIGINAL DRAWING	ECU DESCRIPTION A0 FOR INTERNAL USE	NAME R.P.	RREQ DATE 11.07.19			DRAWING NUMBER A0	ISSUE A0	CONSULTANT DTWG No.			



- 4 DEMOLITION - EAST TOWER, WEST TOWER AND COACH RAMP
- 5 ERECT ACOUSTIC SHED IN GALLIPOLI PARK
- 6 EXCAVATE GALLIPOLI PARK SHAFT

JOB No	ALTERATIONS	NAME	REQDATE
1	FOR CONSTRUCTION MANAGEMENT PLAN	R.E.	24.06.19

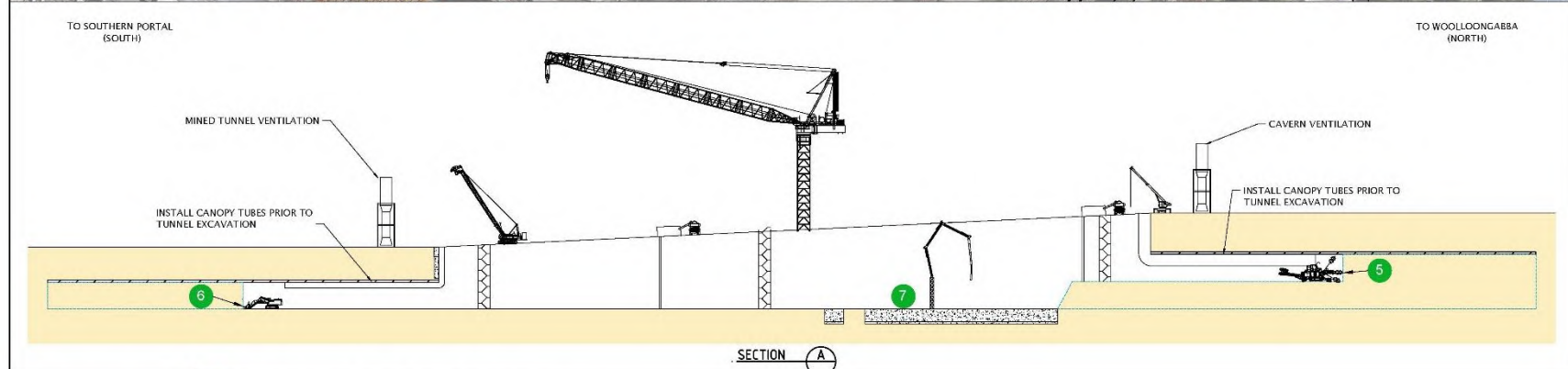
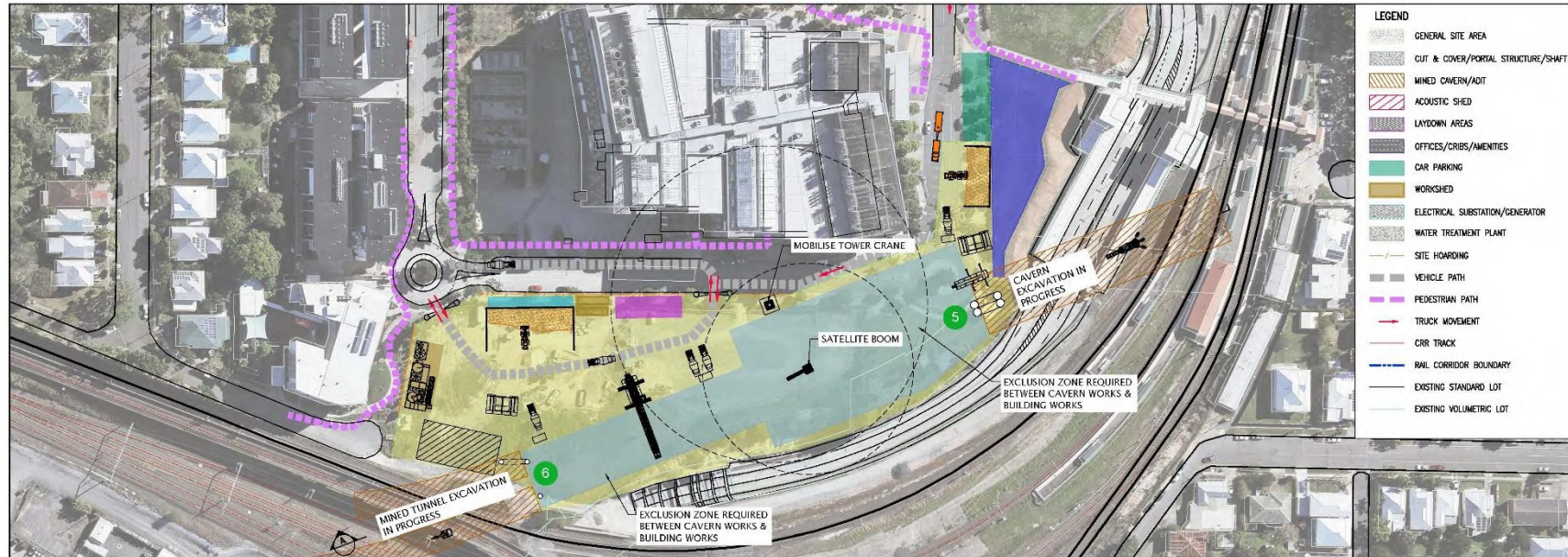


DESIGNED	R.E.	24.06.19
DESIGN CHECK	T.D.	24.06.19
DRAWN	R.E.	24.06.19
DRG CHK	T.D.	24.06.19

CROSS RIVER RAIL DELIVERY AUTHORITY

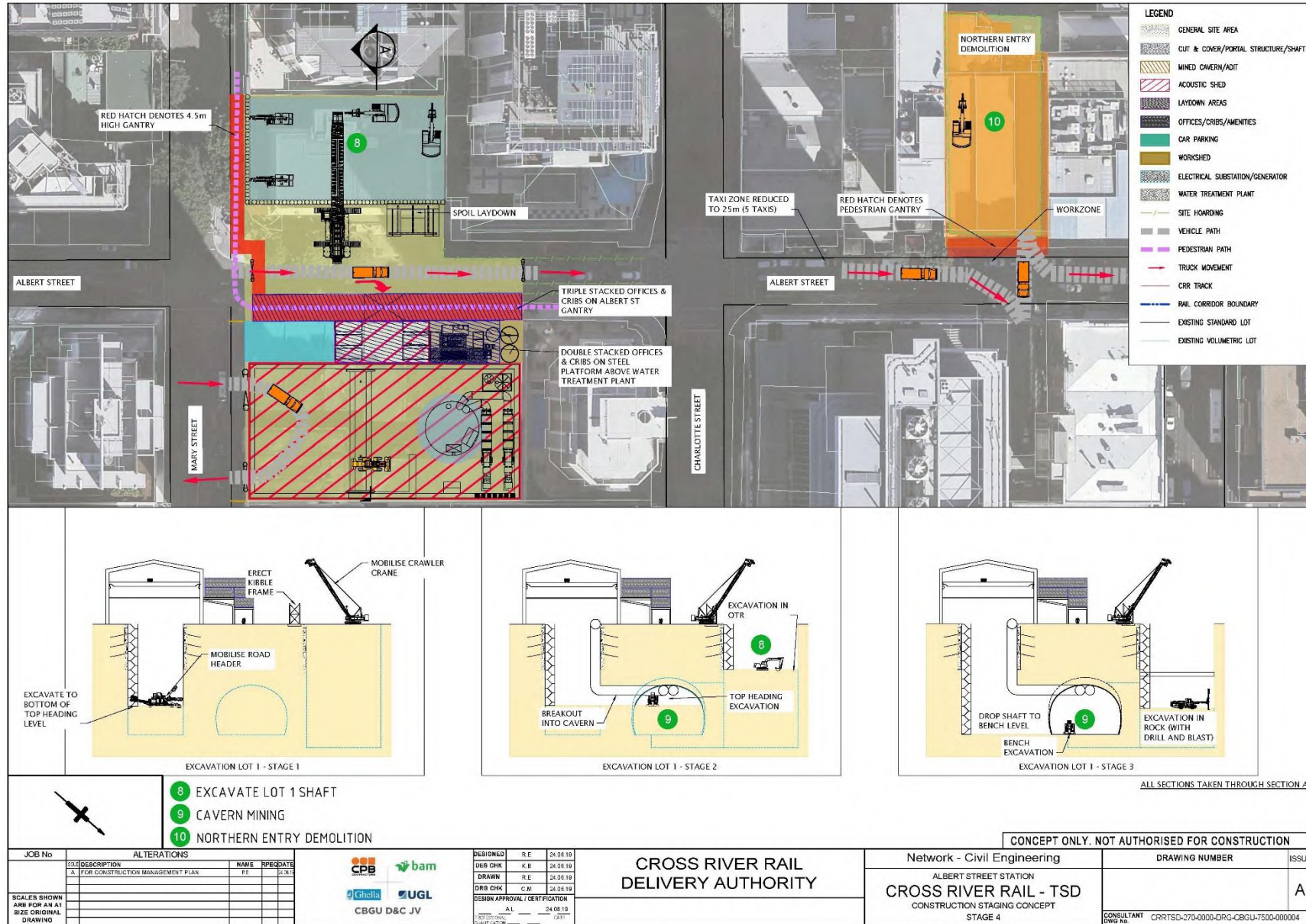
Network - Civil Engineering
 ROMA STREET STATION
CROSS RIVER RAIL - TSD
 CONSTRUCTION STAGING CONCEPT
 STAGE 2

CONCEPT ONLY. NOT AUTHORISED FOR CONSTRUCTION	DRAWING NUMBER	ISSUE
		A



- 5 CAVERN EXCAVATION (WITH ROAD HEADER)
- 6 MINED TUNNEL EXCAVATION (WITH TUNNEL EXCAVATOR)
- 7 STATION BUILDING WORKS

JOB No: _____ ALTERATIONS: _____ SCALE: 1:1000 DATE: 24.08.19		DESIGNED: R.E. 24.08.19 DES. CHK: P.M. 24.08.19 DRAWN: R.E. 24.08.19 DRG CHK: P.M. 24.08.19		CROSS RIVER RAIL DELIVERY AUTHORITY		Network - Civil Engineering BOGGO ROAD STATION CROSS RIVER RAIL - TSD CONSTRUCTION STAGING CONCEPT STAGE 4		DRAWING NUMBER: _____ ISSUE: A	
CPB CONTRACTORS bam Ghella UGL CBGU D&C JV		DESIGN APPROVAL / CERTIFICATION ALL 24.08.19 20250101 24.08.19		CONCEPT ONLY. NOT AUTHORISED FOR CONSTRUCTION		CONSULTANT DRG No: CRR-TSD-420-0000-DRG-CBGU-7500-000004			



Appendix M

Incident Classification Matrix

Synergy Event Classification Matrix

SAFETY & HEALTH

This matrix is used to assign the Actual and Potential Consequence to a Safety & Health Incident in EVENTS and the Classification to an Injury or Illness Impact in IMPACTS

Event Types						
Incident	Near Hit	Report Only	Regulatory Visit	Stakeholder Contact	D&A Positive Test	Hazards
An occurrence that results in physical or psychological injury or illness to a worker, damage to property, plant, equipment, the environment, or business interruption.	An occurrence that did not result in, but had the potential to result in, physical or psychological injury or illness to a person, damage to property, plant, equipment, the environment, or business interruption.	An event that requires recording for future reference and is not included in statistical reporting.	A visit by a regulatory authority to the workplace.	A record of a contact between the workplace and an external stakeholder. For example, a compliment, complaint, an enquiry, or feedback.	A result that has been confirmed as positive by an accredited laboratory or calibrated testing device.	An event record of an identified hazard that if uncontrolled has the potential to cause damage, harm or adverse health effects within the workplace.

Event Classes				
Actual Consequence				
1A	2A	3A	No Impact	
A Death or Permanent Disability incident	A Medical Treatment, Restricted Work or Lost Time Injury incident	A First Aid or Minor Injury incident	No injury or illness	
Potential Consequence				
1P or PC1	2P	3P	4P	5P
Had the hazard been fully realised the most probable outcome was death or permanent disability	Had the hazard been fully realised the most probable outcome was a Lost Time Injury	Had the hazard been fully realised the most probable outcome was a Medical Treatment or Restricted Work Injury	Had the hazard been fully realised the most probable outcome was a First Aid Injury	Had the hazard been fully realised the most probable outcome was no Injury / Minor Injury

Event Types			
Event Type	Definition	Event Type	Definition
Recordable Injury	For reporting safety performance and calculating recordable injury frequency rates, the following classification outcomes are recordable injuries: <ul style="list-style-type: none"> Fatality Permanent Disability Lost Time Injury Restricted Work Injury Medical Treatment Injury Note: Occupational illnesses are excluded from the definition of recordable injury.	Restricted Work Injury (RWI)	A Restricted Work Injury is a Medical Treatment Injury or illness where a qualified medical practitioner certifies that the injured worker cannot perform their 'routine functions' and: <ul style="list-style-type: none"> The restrictions require the worker to perform functions that are not part of their routine duties, or There is a restriction on working hours. Where no medical treatment is provided, and the worker is able to perform 'routine duties' with identified precautions (e.g. restrictions) and no loss of hours, the event shall be classified as a First Aid Injury.

Event Types			
Event Type	Definition	Event Type	Definition
Permanent Disability	<p>A work-related event that results in an injury or illness that permanently affects the future employment of an individual. The work-related injury or illness may be either acute or chronic in nature. Other examples include, but are not limited to:</p> <ul style="list-style-type: none"> • Quadriplegia • Paraplegia • Amputation. Note - amputation up to the first knuckle/digit of a finger or toe is classified as a Lost Time Injury (LTI) • Permanent hearing loss • Permanent sight loss • Permanent sensitisation • Permanent respiratory damage or lung function loss • Permanent restricted impairment • Chronic serious conditions/disease • Permanent nerve, system and/or organ damage • Psychological disturbance • Multiple serious injuries • Permanent loss of control or function of bladder, bowels or sexual organ. <p>If a complex or not easily determined loss of function (for example fine motor function), the injury or injuries can be reviewed with guidance from, the American Medical Association 'Guidelines to Evaluating Permanent Impairment' or the applicable guideline for the jurisdiction in which the injury occurred.</p>	Medical Treatment Injury (MTI)	<p>A Medical Treatment Injury is an injury or illness requiring medical treatment by a qualified medical practitioner, other than First Aid. It includes:</p> <ul style="list-style-type: none"> • Application of antiseptics during second or subsequent visits to qualified medical practitioner • Treatment of partial or full thickness burns • Insertion of suture(s) or staples to treat cuts or lacerations • Removal of foreign bodies embedded in eye • Removal of foreign bodies from a wound if the depth of embedment, size or location complicates the procedure • Use of prescription medications (except a single or precautionary course administered on the first visit for injury or discomfort) • Surgical debridement (Surgical removal of foreign object or suspect tissue from a wound) • Positive x-ray diagnosis of fractures (excludes hairline fractures where no treatment and/or stabilisation is required) • Admission to a hospital or equivalent for treatment or observation for more than 12 hrs • Any traumatic work injury that results in a loss of consciousness, or • Three or more visits to an allied health professional, as prescribed by a qualified medical practitioner. <p>Note: First Aid and observations by a qualified medical practitioner are not classified as Medical Treatment Injuries. Medical treatment does not include:</p> <ul style="list-style-type: none"> • Visits to a qualified medical practitioner solely for observation or counselling • The conduct of diagnostic procedures, such as x-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes (e.g. eye drops to dilate pupils). • Use of wound closing techniques such as glue and butterfly clips. • Administering vaccinations or other immunisations proactively prior to any symptoms or signs of infection or disease.
Lost Time Injury (LTI)	<p>A Lost Time Injury is a work-related injury or illness that resulted in time lost from work of one day/shift or more. A Lost Time Injury must be certified by advice from a qualified medical practitioner or chief medical advisor.</p>		
Report Only	<p>Events that require recording for future reference but are non-work related and are not included in statistical reporting. The classification for Report Only events are:</p> <ul style="list-style-type: none"> • Business Interruption • Damage not caused by work • Environment • Injury at social activity • Journey • Medical incident not caused by work <p>Public Theft/Damage</p>	First Aid Treatment (FAI)	<p>A First Aid Injury is a work-related injury or illness which requires preliminary treatment, assistance or care without the need for medical treatment. A First Aid Injury includes the following:</p> <ul style="list-style-type: none"> • A minor injury or discomfort and receiving a single or precautionary course of prescription medication or use of antiseptics during the first visit to a qualified medical practitioner • Using a non-prescription medication at non-prescription strength • The treatment of superficial burns • Precautionary testing including negative x-ray diagnosis • Administering vaccinations or other immunisations proactively prior to any symptoms or signs of infection or disease (e.g.: Tetanus and Rabies) • Cleaning, flushing or soaking wounds on the surface of the skin • Using wound coverings such as bandages, Band-Aids™, gauze pads, etc.; or using butterfly bandages, Steri-Strips™ or surgical glue (other wound closing devices such as sutures, staples, etc. are considered medical treatment) • Using hot or cold therapy • Using any non-rigid means of support, such as elastic bandages, wraps, etc. (devices with rigid stays, other than finger guards, or other systems designed to immobilise parts of the body are considered medical treatment for recordkeeping purposes) • Using temporary immobilisation devices while transporting an accident victim (e.g. splints, slings, neck collars, back boards, etc.) • Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister • Using eye patches • Removing foreign bodies from the eye using only irrigation or a cotton swab • Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means • Using massages • Drinking fluids for relief of heat stress • Up to two visits to an Allied Health Professional as prescribed by a qualified medical practitioner, or • Observation for any of the above treatments, including admission to a hospital for up to 12 hours.
Occupational Illness	<p>An Occupational Illness is a work-related condition or disorder caused predominantly from prolonged or multiple exposures to hazardous substances or work conditions rather than a single event as in the case of a work injury. A single exposure to a hazardous substance may also result in an occupational illness. There must be a clear and significant relationship between the condition and the worker's work environment or specific activities at work, for the condition to constitute an occupational illness. The development of a medical condition (particularly a musculo-skeletal type condition) in a worker during their employment does not automatically constitute an occupational illness. However, if the musculo-skeletal condition is due to prolonged or multiple exposures to hazardous work conditions, it will be classified as an occupational illness. If the condition clearly arises from a single event, it will be classified as a work injury. The following examples may assist in determining the difference between a work injury and an occupational illness:</p> <ul style="list-style-type: none"> • Hearing loss relative to baseline audiometric testing due to exposure to occupational noise over time – occupational illness • Hearing loss or damage to the ear due to exposure to an event that results in a loud noise such as an explosion or sudden release of compressed gasses – work injury • Dermatitis reaction as a result of exposure to chemicals used as part of a worker's duties over a period of time – occupational illness • Chemical burn resulting from a single exposure to a particular chemical – work injury • Back or neck condition due to operating heavy equipment over a period of time (i.e. at least a number of shifts) – occupational illness; • Back or neck injury due to a jolt or jar when operating heavy equipment runs over a large rock – work injury • Malaria contracted by business travellers and international assignees from a non-endemic malaria country while working in a malaria zone – occupational illness • Malaria contracted by worker from malaria endemic country while working in a malaria zone – Report Only, Medical Incident not caused by work • Medical conditions arising from insect or animal bites during a specific work activity carried out in a work environment where exposure is reasonably expected – work injury <p>Medical conditions arising from insect or animal bites at work but unrelated to a specific work activity or in a work environment where exposure is not reasonably expected – Report Only, Medical Incident not caused by work</p>	Journey Events	<p>An injury sustained on the usual route of travel between the worker's home and place of work or between place of work and home is considered to be a Journey event. Details of Journey events must be recorded as a 'Report Only, Journey' for workers compensation purposes and record purposes, but the event is not included in the company's incident statistics.</p> <p>Due to the sometimes-delayed nature of symptoms arising from incidents, commuting/journey incidents where no injuries were evident at time of report should also be recorded in the same manner. Events including injury or illness impacts sustained during work related travel (travelling from the office to a project, between work areas within a project, project-to-project, etc.) are work related and recorded in the incident statistics.</p> <p>An injury or illness sustained on local, interstate or international business travel, including travel to and from home to the intermediate or final destination via taxis, Uber, company provided drivers, etc. and/or on approved scheduled commercial airlines, flying a publicly available route is considered a journey event. Injuries and/or illness resulting from business travel involving self-driven company cars, private cars, hire cars, etc. is considered to be work related</p>

Defined Terms			
Term	Definition	Term	Definition
Worker	Any person engaged by and/or operating under the instruction of the CPB Contractors or its entities. This may include, but is not limited to employees, contractors, subcontractors, labour hire employees, apprentices, trainees, volunteers and work experience students.	Work Related	<p>An injury or illness is regarded as work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness. Work-relatedness is presumed for injuries and illnesses resulting from events or exposures occurring in the work environment.</p> <p>The following situations are not considered to be work related:</p> <ul style="list-style-type: none"> At the time of the injury or illness, the worker had finished work for the day and was present as a member of the general public rather than as a worker The injury or illness involves signs or symptoms that surface at work but result solely from a non-work-related event or exposure occurring outside the work environment The injury or illness results solely from voluntary participation in a wellness program or in a medical, fitness, or recreational activity such as blood donation, physical examination, flu shot, exercise class, racquetball, or baseball The injury or illness is solely the result of a worker eating, drinking, or preparing food or drink for personal consumption (whether bought on the premises or brought in). Note: If the worker is made ill by ingesting food contaminated in the workplace (such as lead) or gets food poisoning from food supplied by the site, the case would be considered work-related. The injury or illness is solely the result of a worker doing personal tasks, at the work environment outside of the worker's assigned working hours The injury or illness is solely the result of personal grooming, self-medication for a non-work-related condition, or is intentionally self-inflicted The injury results from normal living activities such as walking (on even ground), standing, sitting, turning, ascending or descending stairs and normal bending such as tying a shoe lace, picking up light weight items such as pencil or paper clip Normal living activities do not include twisting/reaching/bending in poor ergonomic circumstances (e.g. pick up an item under a desk) or if there is a trip or slip The injury or illness is caused by a motor vehicle accident and occurs on a company parking lot or company access road while the worker is commuting to or from work Illness not associated with work, such as the common cold or flu. Mental illness will not be considered work-related unless the worker provides a certificate from a qualified medical practitioner that states the worker has a work related mental illness.
Workplace	Any office, site, project or work location that has workers whose activities are controlled by the CPB Contractors and/or its entities.		
Qualified Medical Practitioner	A Health Professional with appropriate university qualifications, experience, and country-based accreditation to legally allow the practice of medical examinations, diagnosis, and provision of treatment advice.		
Allied Health Professional	<p>An Allied Health Professional is a person who performs health services that support a worker's recovery and is a profession, which has:</p> <ul style="list-style-type: none"> a direct patient care role a national professional organisation with a code of ethics/conduct and clearly defined membership requirements university health sciences courses (not medical, dental or nursing) at a minimum of AFQ Level 7 (or equivalent), accredited by their relevant national accreditation body clearly articulated national entry level competency standards and assessment procedures a defined core scope of practice robust and enforceable regulatory mechanisms <p>Common allied health professions generally include, but are not limited to;</p> <ul style="list-style-type: none"> Physiotherapy; Occupational Therapist; Psychology; Dentistry; Nursing (Registered Nurses); Chiropractic; or Naturopathy. 		

ENVIRONMENT

This matrix is used to assign the Actual Consequence to an Environmental Incident in EVENTS and the Classification to an Environmental Impact in IMPACTS.

Event Classes				
Actual Consequence				
1A	2A	3A	No Impact	
Environmental discharges, environmental pollution or degradation which has high severity impacts on the community and/or environment or may have irreversible detrimental long-term impacts.	Environmental discharges, environmental pollution or degradation which has moderate severity impacts on the community and/or environment (1 to 3 months) but is fully reversible in the long term.	Environmental discharges, environmental pollution or degradation which has low severity impacts on the community and environment in the short term (<1 month) and is fully reversible with no residual impacts. Includes nuisance level impacts.	Negligible or sporadic discharges	
Potential Consequence				
1P	2P	3P	4P	5P
Long-term / irreversible damage to neighbouring or valued ecosystem. Long-term remediation required. Irreparable damage to highly valued items / locations of cultural significance.	Impacts extend off-site / external ecosystem. Considerable remediation required. Significant damage to structures / locations of cultural significance.	Medium term, contained impact; requiring significant remedial action. Moderate but permanent damage to structures / items / locations of cultural significance.	Short lived, well-contained environmental impact; minor remedial action required. Moderate damage that is largely repairable.	Small, contained localised impact. Low level repairable damage to commonplace structures.

ENVIRONMENTAL HARM CLASSIFICATION GUIDANCE MATRIX

The following Guidance Matrix must be read in the context of the Incident Classification definitions above. It contains examples only and is not intended to be comprehensive. All examples do not have to be present for that Class or Category to apply. Classification should consider the intent rather than just the literal meaning of the example. Only one Environmental Category can be selected in Synergy. The Category selected should be the one that best represents the environmental impact of the incident, rather than the cause of incident. Classification of incidents must be done by persons with relevant environmental expertise. Expert advice may be required in some situations.

Environmental Harm Environmental Category	Class 1	Class 2	Class 3
WAT - Discharges to Surface Water	<p>Major and/or multiple discharges of pollutant to surface water. High severity impact on values of water resource e.g.</p> <ul style="list-style-type: none"> Extensive contamination/pollution of waterways or water catchment areas e.g. tailings dam failure. 	<p>Significant and/or persistent discharge to surface water, moderate impact on values of water resource e.g.</p> <ul style="list-style-type: none"> Spill escapes into offsite watercourse or storage with significant remediation required 	<p>Minor pollutant discharge to surface water, no permanent impact on values of water resource e.g.</p>

Environmental Harm Environmental Category	Class 1	Class 2	Class 3
		<ul style="list-style-type: none"> Uncontrolled discharge from sedimentation basin or site drainage system above allowable limits Significant release of sediment off-site into drains or receiving waters. 	<ul style="list-style-type: none"> Minor spill from a containment, including hydrocarbons, which may or may not escape into the non-controlled environment, but which is contained and doesn't result in persistent environmental harm Controlled discharge from sedimentation basin or site drainage system above allowable limits.
CON – Contamination of Land and Groundwater	<p>Major spill of environmentally hazardous materials (e.g. hydrocarbons, chemicals, effluent, contaminated materials) to land e.g.</p> <ul style="list-style-type: none"> Persistent and severe contamination of land Severe contamination of groundwater Extensive clean up and/or remediation required Uncontrolled spill of regulated material. 	<p>Significant spill of environmentally hazardous materials (e.g. hydrocarbons, chemicals, effluent, contaminated materials) to land e.g.</p> <ul style="list-style-type: none"> Moderate contamination of groundwater with the consequence reversible Spill confined to defined area(s) within or outside site or workplace Significant clean up required over and above removal of contaminated material to land farm or approved waste area Spill of a type and/or volume that must be reported to a regulatory body. 	<p>Minor leak or spill (greater than 20 litres) of environmentally hazardous materials (e.g. hydrocarbons, chemicals, effluent, contaminated materials) to land e.g.</p> <ul style="list-style-type: none"> No residual contamination of land Minor contamination of groundwater, with minimal consequence Spill confined to managed area(s) within site or workplace No significant clean up required other than removal of contaminated material to land farm or approved waste area. <p>Note: for Spills/Leaks <20 litres see definition for Near Hit Environmental Event No Impact Hydrocarbon Spill</p>
AIR – Dust, odour and emissions to atmosphere	<p>Severe or persistent discharge of hazardous pollutant to atmosphere e.g.</p> <ul style="list-style-type: none"> Explosion or leak of hazardous gas or particulates; Evacuation of local vicinity; Continuous/frequent exceedance of air quality health criteria Severe eco-toxic effects on listed habitats or communities. 	<p>Moderate or persistent discharge of pollutant to atmosphere e.g.</p> <ul style="list-style-type: none"> Multiple occurrences of obnoxious odours outside the premises Nuisance dust levels requiring significant offsite clean-up Odour issues requiring relocation of material or significant changes to waste, earthworks of stockpile management Significant quantities of Greenhouse or ozone depleting gases released to the atmosphere. 	<p>Minor discharge of pollutant to atmosphere that is in breach of a documented obligation or legal condition, but which doesn't result in significant impacts e.g.</p> <ul style="list-style-type: none"> Overfill of cement silo, cement dust release Nuisance dust requiring minimal or no offsite clean-up Small quantities of greenhouse or ozone depleting gases released to the atmosphere Failure to maintain plant in an efficient condition.
NVL – Noise, Vibration and Light (including overpressure)	<p>Generation of noise, vibration, or light causing severe damage to property outside site or workplace, or the environment, or severe and / or persistent disruption to the community e.g.</p> <ul style="list-style-type: none"> Major and persistent loss of amenity or nuisance Extreme levels or persistent excessive noise resulting in severe community impacts Confirmed substantial damage to property from vibration. 	<p>Generation of noise, vibration, or light causing sustained periods of inconvenience or disruption to community and the environment e.g.</p> <ul style="list-style-type: none"> Significant loss of amenity or nuisance Wilful disregard of limits Noise, vibration or light levels regularly in excess of set criteria Vibration causes confirmed minor damage to property. 	<p>Unplanned generation of noise, vibration, or light exceeding documented limits or controls and causing occasional inconvenience or disruption to community and the environment e.g.</p> <ul style="list-style-type: none"> Minor loss of amenity or nuisance Occasional unplanned breach of noise, vibration or light criteria at sensitive receivers. Substantiated public complaint satisfactorily resolved at project level.
WAS – Solid and Other Wastes	<p>NOTE: This category only applies to the unauthorised storage and handling of wastes. Once an incident occurs, use other categories to classify incident.</p> <ul style="list-style-type: none"> Unauthorised storage, transport, treatment or disposal of a significant quantity (refer to legislation) of regulated waste (e.g. classified, prescribed, hazardous) in contravention of waste management legislation Unauthorised storage, transport, treatment or disposal of a significant quantity (e.g. => 10,000 litres, 10 tonnes or 10.0 m³) of non-regulated waste, in contravention of regulations or project waste management requirements. 	<ul style="list-style-type: none"> Unauthorised storage, transport, treatment or disposal of a minor quantity (refer to legislation) of regulated waste (e.g. classified, prescribed, hazardous) in contravention of waste management legislation Unauthorised storage, transport, treatment or disposal of a moderate quantity (e.g. up to 10,000 litres, 10 tonnes or 10.0 m³) of non-regulated waste, in contravention of regulations or project waste management requirements. 	<ul style="list-style-type: none"> Placement or storage of waste or contaminated materials in a manner or place where environmental harm could reasonably be expected to occur Unauthorised storage, transport, treatment or disposal of a minor quantity (e.g. up to 1000 litres, 1000 kg or 1.0 m³) of non-regulated waste in contravention of regulations or project waste management requirements.
FLFA – Flora and Fauna	<p>Major loss or impact on land or water-based flora or fauna. Destruction of ecologically significant habitat that is of national significance. Endangering viability of species, habitat or ecosystem. Damage that cannot be remediated, or only remediated with risk of long-term loss e.g.</p> <ul style="list-style-type: none"> Unapproved destruction of habitat in a national park or similar; Unplanned harm to scheduled flora and fauna species and habitats that may threaten the regional survival of the species or community Long term or permanent disruption of protected fauna breeding cycle Introduction or spread of weeds and pathogens that pose a high risk of ecological or economic damage. 	<p>Medium impact on land or water-based flora, fauna or habitat. Short-term impact on ecosystem that is of regional significance. Damage that can be remediated e.g.</p> <ul style="list-style-type: none"> Partial destruction of native habitat leading to impact on local species numbers or disruption to breeding cycles; Short-term disruption of protected fauna breeding cycle Unplanned harm to scheduled flora or fauna species that may threaten the local survival of the species Unapproved clearing of an area of remnant native vegetation, Declared Threatened or Rare flora Introduction or spread of weeds and pathogens that will require extensive resources to contain. 	<p>Minor loss or impact on land or water-based flora, fauna or habitat, but no long term negative effect on the ecosystem or habitat. Limited damage to an area of land of minor local ecological significance e.g.</p> <ul style="list-style-type: none"> Death of a native animal, that is not identified as a pest, but not from a scheduled species Damage to vegetation in breach of clearing permits and approvals Localised spread of weeds or pathogenic material within site.
HER –Archaeological, Heritage and Cultural Issues	<p>Destruction or irreparable damage to listed structures/items/locations of cultural or heritage significance e.g.</p> <ul style="list-style-type: none"> Wilful damage to a structure, place, item, or artefact. Blatant disregard of widely held cultural values. 	<p>Significant damage to listed structures/items/locations of cultural or heritage significance e.g.</p> <ul style="list-style-type: none"> Knowingly disturbing an archaeological site or place without the appropriate permits or in breach of a permit Entering of protected site, with a breach of cultural 'laws'. Minor disregard of cultural values. 	<p>Minor or accidental and repairable damage to listed structures or places, or minor infringement of cultural values e.g.</p> <ul style="list-style-type: none"> Unintentionally disturbing an archaeological site or place without the appropriate permits Entering of protected sites, but not in breach of cultural 'laws'.
RES – Use of land, water, fuels and energy, and other natural resources	<p>Operations cause either short term severe or persistent unplanned disruption to the availability of resources to the community or the environment. Exhaustion or serious degradation of natural resources for future use e.g.</p> <ul style="list-style-type: none"> Operations cause loss of flow in natural watercourses or irreversible depletion of aquifers 	<p>Operations cause substantial unplanned disruption to the availability of resources to the community or the environment. Significant impact on other energy / natural resource users or the environment outside site or workplace e.g.</p> <ul style="list-style-type: none"> Water usage/de-watering by operations causes loss of pressure or flow to local/adjacent water bores 	<p>Operations cause temporary unplanned disruption to the availability of resources to the community or the environment. Minor impact on other energy / natural resource users or the environment outside site or workplace e.g.</p> <ul style="list-style-type: none"> Rehabilitation area disturbed.

Environmental Harm Environmental Category	Class 1	Class 2	Class 3
	<ul style="list-style-type: none"> Continuous loss of supply water volume from non-licensed discharge point, with evidence of supply water contamination. 	<ul style="list-style-type: none"> Unrecoverable loss of in situ or stockpiled growth medium (e.g. buried) Loss of minor water supply volume off-site. 	<ul style="list-style-type: none"> Minor land-use change without approval from Client or Regulator Loss of water supply volume to localised environment due to continuous moderate leakage; e.g. reservoirs, pipelines, tanks.
ASS - Acid Sulphate Soils	Mismanagement of acid sulphate soils results in high level or catastrophic persistent impacts e.g. <ul style="list-style-type: none"> Significant damage to infrastructure Major acid drainage event 	Significant exposure, lack of containment or poor management of acid sulphate soils.	Minor exposure of acid sulphate soils e.g. <ul style="list-style-type: none"> Exposure of previously unidentified ASS during works Failure of protective bunds but with no runoff leaving contaminated area.
ESC- Erosion & Sediment Control	<ul style="list-style-type: none"> Erosion causing major irreversible impacts to the surrounding environment. Major clean up works requiring significant resources Placement of high toxicity materials in a drainage line or adjacent to a waterway resulting in prosecution. 	<ul style="list-style-type: none"> Disruptions to freshwater or marine activities Placement of contaminated wastes or medium toxicity materials in a location where it could potentially result in pollution Moderate erosion to a landscape, including flow lines that can be remediated in the medium term. Critical E&S controls not installed. 	<ul style="list-style-type: none"> Minor reversible alteration in landscape or topography Erosion causing minor impacts that are reversible. Placement of excavated soil or low toxicity materials in a location where it could potentially result in pollution. E&S Controls not maintained.
DMR -Dirt & Mud on Public Roads	Tracking or depositing of soil onto roads resulting in major clean-up works and major delays to arterial traffic.	<ul style="list-style-type: none"> Tracking of soil material onto local roads requiring significant resources for clean-up works. Exit controls and / or clean-up regime required but not in place Repeated failure by trucks to cover loads in accordance with project requirements. 	<ul style="list-style-type: none"> Unplanned tracking of soil onto local roads requiring minor clean up: Controls are in place but ineffective (e.g. exit rumble grids, wheel washes), clean up (street sweepers) Occasional failure by trucks to cover loads in accordance with project requirements.

PLANT & PROPERTY

This matrix is used to assign the Actual Consequence to Plant & Property Incident in EVENTS and the Classification of Plant & Property Impact in IMPACTS.
 Note: Near Hit Plant & Property Events are not to be recorded in Synergy.

Event Classes			
Actual Consequence			
1A	2A	3A	No Impact
Damage or potential damage to plant or property in excess of \$100,000.	Damage to plant or property in excess of \$15,000 but less than \$100,000.	Damage to plant and property less than \$15,000.	No plant damage

Potential Consequence				
1P	2P	3P	4P	5P
Potential damage to plant or property in excess of \$100,000.	Potential damage to plant or property in excess of \$15,000 but less than \$100,000.	Potential damage to plant or property in excess of \$15,000 but less than \$50,000.	Potential damage to plant or property less than \$15,000	Superficial Damage

DETERMINING LIKELIHOOD

Rating	1	2	3	4	5
Likelihood	Almost Certain	Likely	Moderate	Unlikely	Rare
Definition	Likely to occur again during the next month.	A similar incident could be expected to occur in the next six months.	A similar incident could be expected to occur in the next 1 year.	A similar incident could be expected to occur in the next 5 years.	Similar incident is unlikely to occur again.

SYNERGY EVENT CLASSIFICATION LOOKUP VALUES

#	INCIDENT MECHANISM
1	Working at Heights
2	Slip & Trip Hazards
3	Falling or Flying Objects
4	Heavy Vehicle/Heavy Vehicle interaction
5	Heavy Vehicle /Light Vehicle Interaction
6	Motor Vehicle Accident
7	People & Plant Interaction
8	Mobile Plant Incident (incl Mechanical Failure)
9	Uncontrolled Release – Compressed Air or Gas.
10	Uncontrolled Release – Hydraulics & Other High Pressure
11	Uncontrolled Release - Chemicals incl Hydrocarbons
12	Uncontrolled Release - Mechanical Energy
13	Uncontrolled Release - Electrical Energy
14	Uncontrolled Fire
15	Uncontrolled Explosion
16	Lifting Operations – Rigging Failure
17	Lifting Operations – Crane or Lifting Device Failure
18	Manual Handling/Tasks
19	Fitness for Duty
20	Vibration
21	Powered & Non-Powered Hand Tools
22	Fixed Plant or Machinery
23	Contact with Underground or Overhead Services
24	Slips of Ground or Cave In
25	Structural/Mechanical Failure incl Temporary Works
26	Physical Work Environment
27	Trespass or Vandalism
28	Terrorism or Sabotage
29	Physical Assault
30	Communications Systems Failure
31	Suicide – Attempted or Suspected
32	Rail – Running Line Derailment
33	Rail – Running Line Collision
34	Rail – Level Crossing Occurrence
35	Rail – Proceed Authority Exceeded
36	Rail – Signal Passed at Danger
37	Rail- Signaling & Proceed Authority Irregularities
38	Rail - Runaway
39	Rail – Yard Derailment
40	Rail – Collision
41	Rail – Loading Irregularities
42	Rail – Track & Civil Infrastructure Irregularities
43	Rail – Rolling Stock Irregularities
44	Use of Explosives
45	Hot or Cold Surface/Materials
46	Migrated / Not Applicable
47	Uncontrolled Release – Contaminated Water
48	Uncontrolled Release – Solids (incl Dust)
49	Ground Disturbance

#	INJURY MECHANISM (HUMAN IMPACT)
1	Awkward Posture
2	Contact or Exposure to Biological Factors
3	Contact with Electricity
4	Crushed or Caught Between
5	Drowning or Asphyxiation
6	Exposure to Heat or Cold
7	Exposure to Ionizing Radiation
8	Exposure to Mechanical Vibration
9	Exposure to Non- Ionizing Radiation
10	Exposure to Pressure Variations incl Explosions
11	Exposure to Sudden Sharp Sound
12	Falls on Same Level incl Slips & Trips
13	Insect/Spider/Animal Bite or Sting
14	Long Term Exposure to a Chemical or Substance
15	Long Term Exposure to Sound
16	Repetitive Movement – Low Muscle Loading
17	Muscular Stress – Sustained or High Force
18	Whole Body Jolts & Jars
19	Strike Object with Part of Body
20	Struck by Moving Object
21	Single Contact with a Chemical or Substance
22	Psychological Factors
23	Fall from Heights
24	Migrated / Not Applicable

#	INJURY TYPE
1	Amputation
2	Bite or Sting
3	Bruise or Abrasion
4	Burn or Scald
5	Dislocation
6	Fracture
7	Electric Shock
8	Sprain/Strain
9	Concussion
10	Internal Injuries
11	Laceration/ Open Wound
12	Contusion or Crushing
13	Exposure to Heat or Cold
14	Foreign Body
15	Loss of Sight
16	Loss of Hearing

#	BODY LOCATION
1	Skull
2	Face
3	Eye(s)
4	Ear(s)
5	Nose
6	Teeth
7	Neck
8	Multiple Head Locations
9	Shoulder
10	Upper Arm
11	Elbow
12	Forearm
13	Multiple Arm Locations
14	Wrist
15	Finger(s)
16	Multiple Hand Locations
17	Ribs
18	Chest
19	Abdomen
20	Pelvis
21	Back
22	Internal Organs
23	Multiple Trunk Locations
24	Hip
25	Thigh
26	Lower Leg
27	Knee
28	Multiple Leg Locations
29	Ankle
30	Foot
31	Toes
32	Multiple Foot Locations
33	Whole Body
34	Multiple Whole Body Locations
35	Left Side
36	Right Side

SYNERGY ROOT CAUSES CLASSIFICATIONS	
1	Supervision or Leadership
2	Incompatible Goals
3	Passive Tolerance of Violations
4	Work Procedures - Availability and Suitability
5	Procedural Compliance
6	Risk Management
7	Task Planning, Preparation or Manning
8	SWMS, JSA, Take 5 - Not Completed
9	SWMS, JSA, Take 5 - Inadequate
10	Isolation, Lock Out, Tag Out
11	Access Control
12	Permit to Work - Availability and Suitability
13	Contractor Management
14	Emergency Planning or Preparedness
15	Change Management
16	Communication
17	Hazard Recognition or Perception
18	Operating Speed - Not Suited to Conditions
19	Operating Speed - Time or Productivity Pressures
20	Horseplay or Thrill Seeking
21	Exceeding Operating Authority
22	Training, Experience, Knowledge or Skills
23	Psychological Stress
24	Motivation or Attitude
25	Fatigue - Shift Patterns or Overtime
26	Fatigue - Other Factors
27	Physical Capabilities
28	Drugs or Alcohol
29	Tools and Equipment - Condition or Availability
30	Tools and Equipment Use - Error or Violation
31	Equipment or Materials Handling Methods
32	Abnormal Operational Situation or Condition
33	PPE Suitability or Availability
34	PPE Use - Error or Violation
35	Weather Conditions
36	Congestion, Restriction or Access
37	Workplace Conditions - e.g. Lighting or Noise
38	Ventilation - Gas, Dust or Fumes
39	Chemical - Dangerous Goods or Hazardous Substances
40	Housekeeping
41	Wildlife
42	Signage or Warning Signals
43	Guards or Barriers
44	Occupational Hygiene Practices

SYNERGY CAUSAL FACTOR CLASSIFICATIONS	
1	Supervision or Leadership
2	Incompatible Goals
3	Passive Tolerance of Violations
4	Work Procedures - Availability and Suitability
5	Procedural Compliance
6	Risk Management
7	Task Planning, Preparation or Manning
8	SWMS, JSA, Take 5 - Not Completed
9	SWMS, JSA, Take 5 - Inadequate
10	Isolation, Lock Out, Tag Out
11	Access Control
12	Permit to Work - Availability and Suitability
13	Contractor Management
14	Emergency Planning or Preparedness
15	Change Management
16	Communication
17	Hazard Recognition or Perception
18	Operating Speed - Not Suited to Conditions
19	Operating Speed - Time or Productivity Pressures
20	Horseplay or Thrill Seeking
21	Exceeding Operating Authority
22	Training, Experience, Knowledge or Skills
23	Psychological Stress
24	Motivation or Attitude
25	Fatigue - Shift Patterns or Overtime
26	Fatigue - Other Factors
27	Physical Capabilities
28	Drugs or Alcohol
29	Tools and Equipment - Condition or Availability
30	Tools and Equipment Use - Error or Violation
31	Equipment or Materials Handling Methods
32	Abnormal Operational Situation or Condition
33	PPE Suitability or Availability
34	PPE Use - Error or Violation
35	Weather Conditions
36	Congestion, Restriction or Access
37	Workplace Conditions - e.g. Lighting or Noise
38	Ventilation - Gas, Dust or Fumes
39	Chemical - Dangerous Goods or Hazardous Substances
40	Housekeeping
41	Wildlife
42	Signage or Warning Signals
43	Guards or Barriers
44	Occupational Hygiene Practices

SYNERGY TASK LIST (Main task undertaken at time of the event)	
1	Inspection & Testing
2	Traffic Management
3	Road Construction or Maintenance
4	Mobilisation
5	Demobilisation
6	Commissioning
7	Housekeeping
8	Clearing
9	Survey
10	Maintenance
11	Workshop
12	Earthworks, Civil or Compacting
13	Piling
14	Lifting Operations
15	Rigging
16	Operating a Motor Vehicle
17	Fencing, Hoarding, Gantries, Perimeter
18	Electrical Works
19	Scaffolding
20	Hot Works
21	Demolition, Strip-Out
22	Operate Mobile Plant
23	Entering or Exiting Site
24	Formwork - Jumpform, Slipform
25	Concreting, Steel fixing, Post Tensioning
26	Metal Work, Sheet Metal
27	Steel Erection
28	Masonry
29	Abrasive Blasting
30	Pre-Cast
31	Roofing
32	Cladding, Curtain Wall, Glazing
33	Plumbing (Hydraulics)
34	Lift, Escalator Installation
35	Mechanical Services - Air-Conditioning
36	Fitout
37	Transporting Material on Site
38	Unloading, Loading Materials
39	Carpentry
40	Erosion and Sediment Control Works

Community Engagement Plan

Cross River Rail Project – Tunnel, Stations and Development
Package (TSD)

Document number: CRRTSD-CU-MPL-CBGU-000002

Revision date: 29/01/2020

Revision: 0

Compliance Matrix

Table 1 Compliance matrix

CRRDA REFERENCE	REQUIREMENT	ADDRESSED IN SECTION
Coordinator-General's change report – whole of project refinements 2019		
Condition 9. Community Engagement Plan		
(a)	The Proponent must develop a community engagement plan as part of the Construction Environmental Management Plan consistent with the Outline EMP's Community and Stakeholder Engagement Plan.	This Plan
(b)	The community engagement plan must be given to the Community Relations Monitor for advice at least 10 business days prior to the Construction Environmental Management Plan being provided to the Environmental Monitor.	This Plan
(c)	The community engagement plan must provide for:	
	(i) Directly Affected Persons to be consulted prior to commencement of Project Works and ongoing thereafter about Project Works, predicted impacts and mitigation measures;	Section 3
	(ii) Directly Affected Persons to be consulted about possible mitigation measures;	Section 4
	(iii) local communities near Project Works to be informed about the nature of construction, including the timing, duration and predicted impacts of the works in advance of their commencement;	Section 4
	(iv) information to be provided to public transport, road users, pedestrians and cyclists about the predicted effects of Project Works on road, rail and pedestrian and cycle network operations, in advance of their commencement;	Section 4
	(v) specific community consultation plans for identified key stakeholders;	Section 6
	(vi) implementation of an Indigenous employment policy, providing for Indigenous training and employment opportunities;	Section 0
	(vii) a process for advance notification to local communities of Project Works, including the timing, duration, predicted impacts and mitigation measures, which is available on the project website and through other media.	Section 6
(d)	The community engagement plan must incorporate a complaints management system developed specifically for the Project, which is established prior to the commencement of Project Works.	Section 7, Appendix A
(e)	The complaints management system must deliver a prompt response to community concerns with relevant information, action where required, and reporting of incidents.	Section 7, Appendix A
(f)	As a minimum, the complaints management system must include the following elements:	Section 7, Appendix A
	(i) a procedure for receiving complaints on a 24 hour, seven days a week basis, during Project Works;	
	(ii) a mechanism for notifying the community of the complaints procedure and how it may be accessed;	
	(iii) a process for registering and handling complaints received, including a database for tracking of complaints and actions taken in response;	
	(iv) a procedure for verifying complaints through monitoring and detailed investigation, and escalating and resolving verified complaints;	

CRRDA REFERENCE	REQUIREMENT	ADDRESSED IN SECTION
	(v) a procedure for complaints to be notified to the Community Relations Monitor, including information about the complaint and its resolution;	
	(vi) access by the community to the Community Relations Monitor; and	
	(vii) regular reporting via the monthly environmental report, to the community of complaints and corrective actions, maintaining appropriate confidentiality.	
(g)	(g) All information regarding complaints, including the information collected in Condition 9(f)(iii) must be made available to the Community Relations Monitor.	Section 7, Appendix A

Details of Revision Amendments

Document Control

The CBGU Project Director is responsible for ensuring that this Plan is reviewed and approved. The CBGU Communications and Stakeholder Engagement Manager is responsible for updating this plan to reflect changes to the Project, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the Project Director or the Delivery Authority before being distributed / implemented.

Table 2 Document schedule

Time for Submission	Period during which Project Co must provide updates	Update Interval
10 business days prior to the CEMP being provided to the Environmental Monitor	From initial submission until the Date of Final Acceptance	6-monthly

Revision Details

Table 3 Revision details

Revision	Details
A	For Internal Review
B	For Review
C	VRS comments addressed
D	VRS comments addressed
0	CBGU Approved

Distribution and Authorisation

The CBGU Project Director is responsible for the distribution of this Plan. The controlled master version of this document is available for distribution as appropriate and maintained on TeamBinder. All circulated hard copies of this document are deemed to be uncontrolled.

The implementation of this Plan is under the authority of CBGU Delegated Authority Matrix. All personnel employed on the Project will perform their duties in accordance with the requirements of this Plan, supporting management plans, and related procedures.

Table 4 Distribution List

Recipient	Distribution Method
Cross River Rail Delivery Authority (Delivery Authority)	TeamBinder
Project Independent Certifier (PIC)	TeamBinder
CBGU Project Personnel (including SA and FM)	As per TeamBinder Distribution List
Proof Engineer/Verification Engineer	As per TeamBinder Distribution List

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Glossary of Terms

Table 5 Terms

Term	Meaning
BCC	Brisbane City Council
CBGU	D&C Subcontractor comprising a joint venture with CPB Contractors Pty Ltd, BAM International Australia Pty Ltd, Ghella Pty Ltd and UGL Engineering Pty Ltd
CEP	Community Engagement Plan
CMS	CPB Management System
CRRDA	Cross River Rail Delivery Authority acting on behalf of the State
CRR TSD (the Project)	Cross River Rail - Tunnel, Stations and Development (TSD) Project
DTMR	Department of Transport and Main Roads (QLD)
FM	Facilities Manager
GIS	Geographic Information System
ISA	Independent Safety Assessor
O&M	Operations and maintenance
PIC	Project Independent Certifier
PSTR	Project Scope and Technical Requirements
QR	Queensland Rail
RIS (or RIS Alliance)	Cross River Rail – Rail Integration and Systems Project Alliance
Risk matrix	A table used in the evaluation of risk severity that has likelihood and consequence as its axes with numbers and ratings applicable to each likelihood/consequence combination. For use in risk evaluation and Safety in Design reviews.
Risk register	A database containing Project risks, assessments, treatments and responsibilities
Subcontractor	Any company, body or person who is contracted to CBGU for the purpose of supplying plant and/or services
TeamBinder	Proprietary software used as part of the Project wide Electronic Document Management System
the Project (or CRR TSD)	Cross River Rail - Tunnel, Stations and Development (TSD) Project
WBS	Work Breakdown Structure - the hierarchical breakdown of a project into manageable portions of work, used to drive program, cost, work documentation and organisational structure

1 Introduction

1.1 Purpose

The D&C Subcontractor for the Cross River Rail (CRR) Tunnel, Stations and Development (TSD) Package (the Project) is the joint venture of CPB Contractors Pty Ltd, BAM International Australia Pty Ltd, Ghella Pty Ltd and UGL Engineering Pty Ltd (CBGU D&C JV).

CBGU D&C JV (CBGU) is responsible for delivering the Design and Construct (D&C) Activities and Final Acceptance Services (FAS) for the T&S Works during the D&C Phase and through to the Date of Final Acceptance.

This Community Engagement Plan (CEP) sets out the requirements for community engagement during construction of the Cross River Rail Project and forms part of the Construction Environmental Management Plan (CEMP) Tunnel and Stations Package (CRR T&S) Works, in accordance with Condition 9 of the Coordinator-General's Imposed Conditions.

1.2 Objectives

The goal of communications and stakeholder engagement is to build and maintain a positive reputation sustained by strong stakeholder relationships.

CBGU will work collaboratively with Pulse and the State to ensure the CRR Project is delivered on time and on budget, while maintaining strong brand and reputational outcomes through an innovative and considerate communications and engagement process.

Throughout the delivery of the T&S Works and the performance of the D&C Activities and Final Acceptance Services, we aim to:

- Earn and retain Social Licence and build community support and excitement for the Project to attract future customers and ownership
- Consider the community and mitigate impacts where practical, minimise disruption and inform of disruptive activities
- Keep Brisbane moving and open for business
- Deliver social initiatives which align with Queensland Procurement Principles and intent.

2 Our Guiding Principles

Aligned to the State’s principles, CBGU believes the community is entitled to expect that the T&S Works, D&C Activities and Final Acceptance Services will be well managed. The guiding principle is to focus on early engagement and a ‘no surprises’ approach to establish positive relationships with stakeholders. CBGU is committed to engagement principles and approaches detailed in Table 6.

Table 6 Guiding Principles

Goal	Engagement Principles
Earn Social Licence and build community support and excitement for the Project to attract future customers	<p>Be proactive. Inform and engage stakeholders early in the process, ensure they remain fully informed with the ability to voice any feedback:</p> <ul style="list-style-type: none"> • Explain our technical solution and reasons behind our decisions • Be inclusive. Ensure stakeholders have access to information about the construction timing and upcoming construction activities • Be responsive. Respond to stakeholder contact in a timely manner and manage a fair and open engagement process.
Consider the community to mitigate impacts and minimise disruption	<p>Be considerate and treat impacted stakeholders sensitively:</p> <ul style="list-style-type: none"> • Adopt meaningful and appropriate engagement, recognising that it is essential to listen and respond to community needs.
Keep Brisbane moving and open for business	<p>Be aware. Keep Brisbane moving with an overarching approach to carry out works to minimise impact on local communities:</p> <ul style="list-style-type: none"> • Be proactive. Mitigate impacts and deliver on commitments made by the project team, where practical • Keep the community well-informed of planned activities, durations and expected impacts.
Deliver social initiatives which align with Queensland Procurement Principles and intent	<p>Recognise and implement initiatives where practical that provide benefit to those in close proximity to the project:</p> <ul style="list-style-type: none"> • Consider support where practical for disadvantaged Queenslanders • Partner with organisations that foster workplace policies and practices aimed at ending domestic and family violence.

3 Engagement Approach and Methods

3.1 Engagement Approach

Community engagement undertaken through the project planning, approval and procurement phases of the CRR project has involved a wide range of stakeholders across the corridor and SEQ. Feedback received during this engagement and industry best practice has informed CBGU’s engagement approach and methods.

This includes application of the International Association for Public Participation (IAP2) Spectrum for community engagement to analyse the community, public, impacted and Directly Affected stakeholders and determine the appropriate level of engagement (Figure 1).

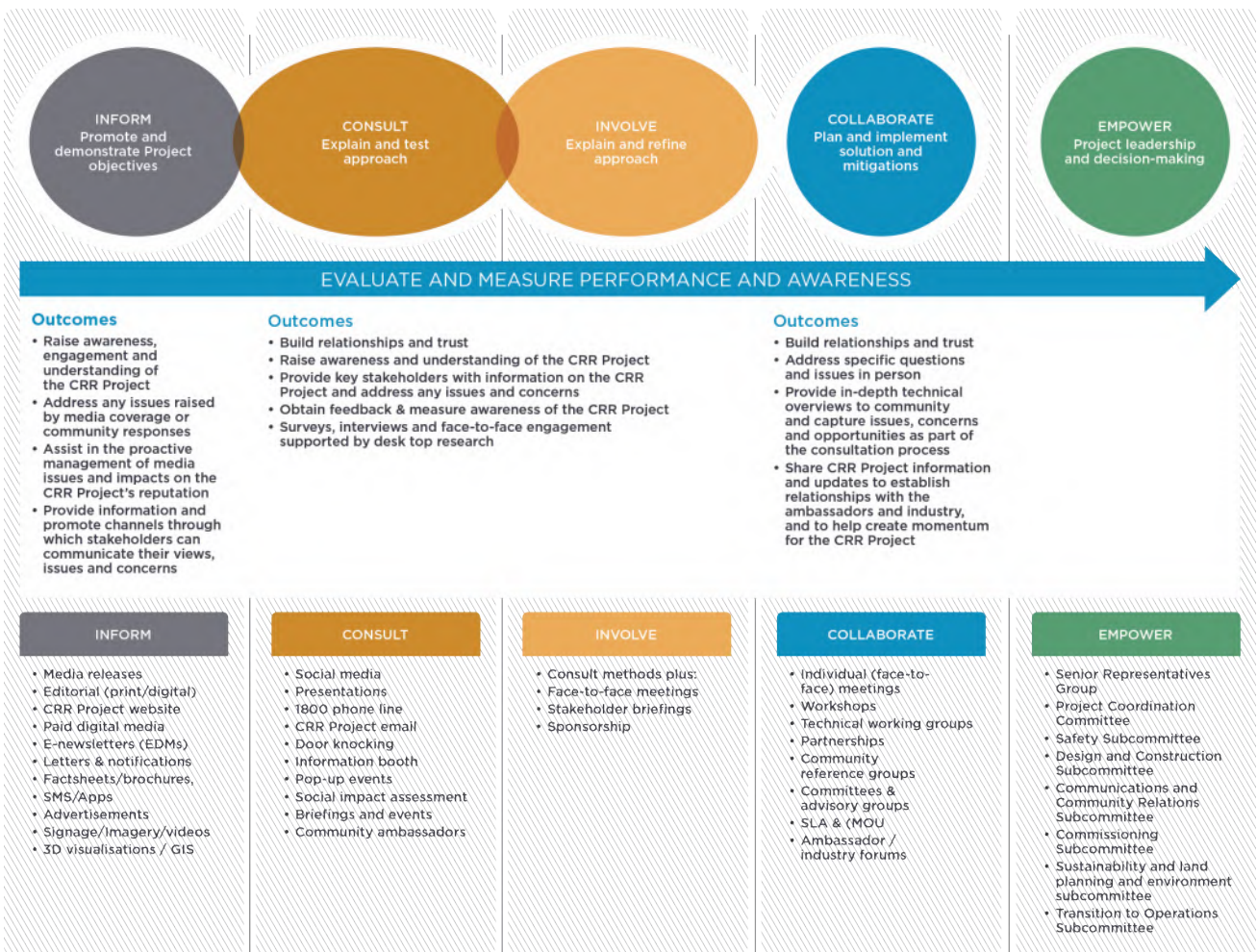


Figure 1 IAP2 spectrum

This spectrum forms the basis for stakeholder assessment in Section 5. ‘Involve’ and ‘consult’ methods will be adopted for Directly Affected Persons (as defined in the Coordinator-General’s Conditions*), those adjacent to or in close proximity of our activities, industry influencers and advocates and supportive opinion shapers to build relationships and trust, raise awareness and understanding of the CRR Project, and keep key stakeholders informed on progress and address any issues and concerns.

Where appropriate and per the Coordinator-General's Condition 8**, the Community Relations Monitor may attend meetings with Directly Affected Persons to consult on potential mitigation measures to be employed, aligned to specific construction impacts prior to the relevant construction activities commencing.

* The Coordinator General defines Directly Affected Persons as an entity being either the owner or occupant of premises for which predictive modelling or monitoring indicates the project impacts would be above the performance criteria in the imposed conditions.

**Condition 8 of the Coordinator-General's project-wide conditions requires the Community Relations Monitor to attend each meeting between the Proponent and a Directly Affected Person to consult on mitigation measures, including providing input on standard responses for similar impacts.

3.2 Communication Channels

The following communication channels will be used to provide information about the proposed works, advance notification of construction activity and to update overall project progress.

Table 7 Communication Channels

Channels	Purpose
Information sessions	<p>CBGU will present information on the design and proposed construction timeframes. Impacted residents and surrounding businesses will be invited to attend these sessions via a letterbox dropped invitation.</p> <p>CBGU will offer the opportunity to register for regular project updates. Contact cards will be provided describing how to contact the project team and where further information on the project can be found.</p>
Community works notifications and leaflets	<p>Keeping the community, key stakeholders and stakeholder groups regularly informed of construction works, traffic changes and potential impacts is a key priority. Community information will be tailored to meet the needs of each stakeholder group, as appropriate.</p> <p>Works Notifications will include information on how to register for regular updates, how to make an enquiry or a complaint, and how to find out more about the project.</p>
Door knocking	<p>Impacted residents and surrounding businesses will be doorknocked during project planning, and again prior to construction commencing, to provide information about the upcoming works, potential impacts, duration and proposed mitigation or minimisation measures.</p> <p>During doorknocking activities, CBGU will offer residents and businesses the opportunity to register for regular project updates. Contact cards will be provided describing how to contact the project team and where further information on the project can be found.</p>
Brisbane Metropolitan Transport Management Centre (BMTMC)	<p>Traffic alerts will be provided to BTMC to enable advanced notification to transport operators and road-users of traffic changes, including road or lane closures and detours.</p>
Signage	<p>Signage will be used to notify of project works and impacts, as well as conditions on and around site which are expected to change. For example, signage will be erected in advance to notify users if some carparks will be no longer available for public use.</p> <p>Signage will advise how to contact the project team and how to find out more about the project.</p>

Channels	Purpose
Electronic variable message (VMS) boards	VMS will be installed to provide information on upcoming works or current traffic changes to road users, pedestrians and cyclists.
Meetings with impacted stakeholders	CBGU will continue to consult with impacted residents, businesses, special interest groups and schools prior to and during construction. The focus of these meetings will include provision of construction information, discussion of mitigation measures and key milestone updates.
Meetings with individuals or groups	CBGU will continue to meet with individuals or groups, as approved by the Cross River Rail Delivery Authority (the Delivery Authority), when required or requested to discuss the overall project, upcoming works, works in progress and predicted impacts. Meetings may be triggered by stakeholder interest/contact or emerging project requirements.
Check-in phone calls/meetings	CBGU will initiate check-in phone calls and meetings with individuals or stakeholders who have ongoing questions and/or concerns related to the works, or a certain type of construction activity.
Monthly update email (eNews)	A monthly update email will be sent to surrounding businesses/residents/stakeholders who have registered to receive regular updates. These emails will include information on upcoming works activity, how to contact the project team and how to find out more information specific to construction works.
Enquiry management	The Delivery Authority has an established 1800 enquiry number and project email address for community contact to raise questions, make a complaint or to report incidents. The 1800 enquiry number will operate 24-hours a day, seven days a week during construction.
Website updates	CBGU will provide the Delivery Authority with regular updates for the project website with information about works activity and project progress. The website includes contact details to find out more about the project and an option to register for regular project updates.
Social media	CBGU will provide the Delivery Authority with advanced notification of works activity, potential impacts and updates on milestones achieved for release through its social media channels.
Media	The Delivery Authority will make media announcements and distribute media releases about project milestones, as appropriate.
Building condition surveys	CBGU will undertake building condition surveys to understand the current condition of nearby structures (including some residential properties) prior to construction starting.

3.3 Indigenous Participation

CBGU recognises the connection between the Traditional Owners and Indigenous persons and the land that will host the CRR network. We also recognise the importance of developing effective relationships with Traditional Owners and Indigenous stakeholders to achieving delivery of the CRR in a sensitive and respectful manner.

We are committed to working with the State to engage with and work alongside Traditional Owners and Indigenous groups/persons to deliver positive outcomes from the CRR project. Local Indigenous groups/persons will be informed of all T&S works and construction activities through the notification process.

We will work with the State to unlock opportunities for involvement of Indigenous community representatives throughout the project. Opportunities identified by our team may include:

- Involvement in the design/delivery of the public art program and interpretive signage
- Involvement in precinct activation strategies including hoarding artwork/theming and events.

In addition, we will actively seek training and employment opportunities through our Local Industry Development Plan and our Diversity and Inclusion Policy.

4 Phasing

This CEP addresses activities summarised in Table 8 below, which are detailed in the revised Construction Environment Management Plan (CEMP) for the Cross River Rail Project (CRR-TSD-EN-MPL-CBGU-000019). This includes ongoing construction activities for the duration of the project. Additional updates will be added to this section only in any future revisions of the CEMP and this CEP.

As the project progresses, a risk management approach will continue to identify and address activities or aspects of the project that potentially affect stakeholders and community.

Table 8 Scope of this plan

Construction Stage	Construction Activities
Site investigations	<ul style="list-style-type: none"> • Geotechnical (drilling and excavation), including contamination investigations • Utility excavations to identify locations • Establishment of monitoring equipment • Hazardous material surveys.
Site establishment	<ul style="list-style-type: none"> • Utility relocations/disconnections, utility protection works and provision of site/construction services • Installation of gantries, hoarding, fencing, scaffolding • Relocations of pedestrian and cycle access • Demolition of buildings and structures at Roma Street, Albert Street, the Southern Portal and Boggo Road • Establishment of site access / egress • Earthworks to establish working platform, access roads, laydown areas, site levelling • Piling • Road closures and other traffic changes • Establishment of site buildings, sheds and amenities and other associated infrastructure. • Clearing/trimming of vegetation
Construction activities for project duration	<ul style="list-style-type: none"> • Mechanical and electrical work • Railway work • Environmental management activities • Tunnelling including drill and blast, fit-out and finishing • Spoil removal and cartage (including contaminated spoil) • Continued vegetation clearing/trimming • Continued demolition of buildings and structures at Roma Street, Albert Street and the Southern Portal • Continued piling operations • Continued relocation of utilities • Underpinning of the Queensland Rail freight flyover structure at Boggo Road and associated works • Construction of Up and Down CCR Dive structures at the Northern and Southern Portals (see Figure 2) • Construction of the Boggo Road pedestrian and cycle bridge

Construction Stage	Construction Activities
	<ul style="list-style-type: none">• Construction of new suburban track alignment at the Northern and Southern Portals• Upgrade to Dutton Park Station• Excavation of shafts, caverns and tunnels• TBM assembly, launch and operations from Woolloongabba• Road header operations• Contaminated spoil removal and cartage• Spoil removal, cartage and management• Demolition/construction of road infrastructure• General earthworks and surface support operations• Road closures and other traffic changes• Concrete works• Onsite noise treatments including but not limited to hoardings, noise walls, noise blankets• Installation of water treatment plants and water management including drainage• Landscaping and hardscaping <p>For further details refer to the Construction Management Plan and Construction Environment Management Plan.</p>

5 Stakeholders

5.1 Key Stakeholder Groups

The T&S Works package will involve a number of worksites across Brisbane, which coincide with the tunnel portals and future station locations as shown on the alignment map below (Figure 2).

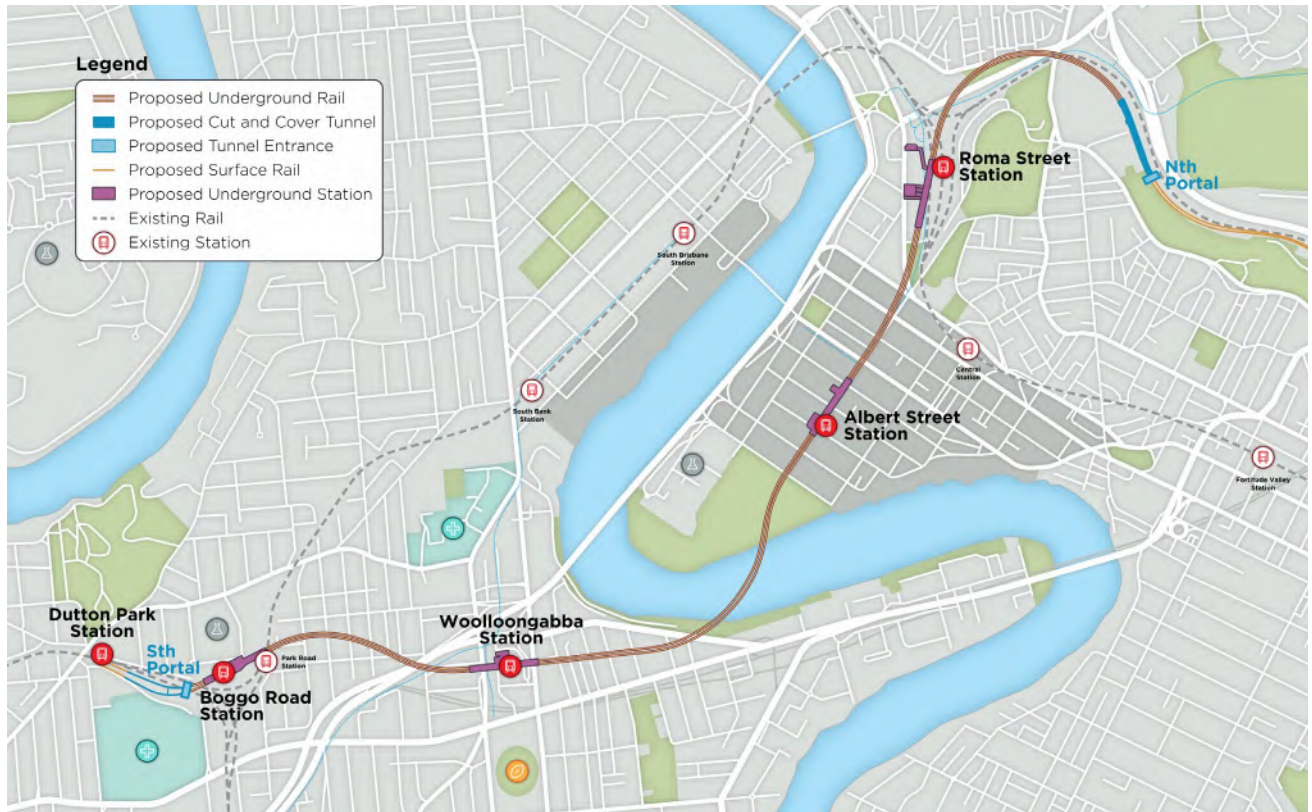


Figure 2 T&S Works alignment and stations

Key stakeholders with an interest in particular areas of the site are identified in the following sections.


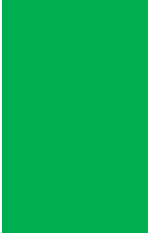






5.1.1 Whole-of-project key stakeholders (including tunnel alignment)

The project team will ensure that key stakeholders and the wider community are kept informed about project activities and project progress, including impacts to traffic and access. We will consult with Directly Affected Persons in advance of any specific activities, as outlined in Section 3.1.

Key stakeholders across the whole-of-project are summarised in Table 9 below, using the key provided.

IAP2 Key:  Empower  Collaborate  Involve  Consult  Inform

Table 9 Whole-of-project key stakeholders

Stakeholder category	Individual stakeholders	IAP2 level
Key strategic partners	The Department of Transport & Main Roads Queensland Rail TransLink Brisbane City Council RIS Contractor	
Government	The Coordinator-General The Honourable Anastacia Palaszczuk MP, The Premier of Queensland The Honourable Kate Jones MP, Minister for Innovation and Tourism Industry Development The Honourable Mark Bailey MP, Minister for Transport	
	Department of State Development Department of Environment and Heritage Department of Housing and Public Works (various residential tenancies)	
Opinion shapers	Key media outlets Interest groups	
Indigenous and heritage groups	Relevant Aboriginal Parties Queensland Heritage Council National Trust Brisbane Heritage Group Brisbane Living Heritage	
Industry influencers / advocates	Rail Back on Track Accessibility groups including Accessibility Reference Group	
Utility authorities	Energex APA Gas Qld Urban Utilities Telstra and various telcos	
Industry	Australian Taxi Industry Association Uber / Ola / Didi Bicycle Queensland Bicycle User Groups	


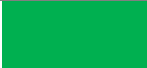




Stakeholder category	Individual stakeholders	IAP2 level
	RACQ Qld Trucking Association	
Service providers / Queensland First	Industry Capability Network (ICN) Supply Nation Black Business Finder Social Traders Queensland Social Enterprise Council Buyability yourtown	
The corridor community	Residents and Businesses of Petrie Terrace, Spring Hill, Brisbane CBD, Kangaroo Point, Woolloongabba, and Dutton Park including in the vicinity of the tunnel alignment and precincts Public transport users (current and future) Pedestrians and cyclists	
The public	Wider Brisbane community.	

5.1.2 Northern Portal

Northern Portal stakeholders in addition to those found whole-of-project are summarised in Table 10 below, using the key provided.

IAP2 Key:  Empower  Collaborate  Involve  Consult  Inform

Table 10 Northern Portal stakeholders

Stakeholder category	Individual stakeholders	IAP2 level
Key strategic partners	Queensland Rail – Exhibition Line	
Government	The Hon Kate Jones MP, Minister for Innovation and Tourism Industry Development	
	The Hon Grace Grace, State Member for McConnel Mr Trevor Evans MP – Federal Member for Brisbane Cr Vicki Howard – Councillor for Central Ward	
	Relevant Aboriginal Parties (Victoria Park) Centenary Aquatic and Fitness Centre Royal National Association	
Owners and occupiers of sensitive sites	Brisbane Grammar School Brisbane Girl’s Grammar	
	St Joseph’s College (Terrace) Brisbane Central State School Holy Family Child Care Centre	

Stakeholder category	Individual stakeholders	IAP2 level
Nearby health providers and precincts	Royal Brisbane Women’s and Children’s Hospital Queensland Institute of Medical Research Herston Quarter development (Australian Unity)	
Community groups	Spring Hill Community Association	
Nearby community / Directly Affected Persons (DAP)	Property owners, residents and businesses of Petrie Terrace, Gregory Terrace and Normanby Terrace DAP identified according to modelling undertaken ahead of major activities.	

5.1.3 Roma Street Station

Roma Street Station stakeholders in addition to those found whole-of-project are summarised in Table 11 below, using the key provided.

IAP2 Key:  Empower  Collaborate  Involve  Consult  Inform

Table 11 Roma Street key stakeholders

Stakeholder category	Individual stakeholders	IAP2 level
Key strategic partners	Queensland Rail - Roma Street station TransLink TMR (Coach Terminal Operations) City Parkland Services	
Government	The Kate Jones MP, Minister for Innovation and Tourism Industry Development	
	The Hon Grace Grace, State Member for McConnel Mr Trevor Evans MP, Federal Member for Brisbane Cr Vicki Howard, Councillor for Central Ward	
Owners and occupiers of sensitive sites	Relevant Aboriginal Parties Stadiums Queensland (Suncorp Stadium) Brisbane Dental Hospital Roma Street Railway station building (heritage) Roma Street Railyards	
	Parkland Apartment Body Corporate Supreme and District Courts Queen Elizabeth Courts of Law Brisbane and Supreme Court of Queensland Library Brisbane Supreme and Magistrates Courts Brisbane District Court Queensland Police Headquarters and Watch House Queensland Police Museum	

Stakeholder category	Individual stakeholders	IAP2 level
	Department of Housing (various residential tenancies) Transcontinental Hotel Abbey on Roma Hotel and Apartments QFRS Roma Street Station Biala House Community Health Army Museum of Southern Queensland Property owners, residents and businesses of Roma Street, George Street, Parkland Crescent / Parkland Boulevard and Wickham Terrace	
Nearby educational institutions	Brisbane Central State School Story House Early Learning Lyrebird Language Centre	
Nearby health providers and precincts	Brisbane Private Hospital St Andre’s War Memorial Hospital	
Community facilities / churches / groups / industry bodies	Emma Millar Place St Alban Catholic Church Spring Hill Community Association Roma Street Park users group Orange Sky Rosie’s Micah Projects Queensland Bus Industry Council	
Other infrastructure projects	Brisbane Metro	
Nearby community / Directly Affected Persons (DAP)	Property owners, residents and businesses of Petrie Terrace, Parkland Crescent / Parkland Boulevard and Roma, Wickham Terrace, George, Herschel and Makerston Streets Spring Hill, Brisbane City, wider Brisbane interested parties DAP identified according to modelling undertaken ahead of major activities.	

5.1.4 Albert Street Station

Albert Street Station stakeholders in addition to those found whole-of-project are summarised in Table 12 below, using the key provided.

IAP2 Key:  Empower  Collaborate  Involve  Consult  Inform

Table 12 Albert Street key stakeholders

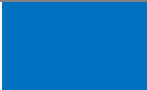







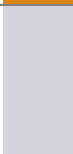

Stakeholder category	Individual stakeholders	IAP2 level
Key strategic partners	Brisbane City Council (traffic management)	
Government	The Hon Kate Jones MP, Minister for Innovation and Tourism Industry Development	
	The Hon Grace Grace, State Member for McConnel Mr Trevor Evans MP – Federal Member for Brisbane Cr Vicki Howard – Councillor for Central Ward	
Owners and occupiers of sensitive sites	Relevant Aboriginal Parties Albert Street businesses (between Elizabeth and Alice Streets) Charlotte and Mary Street businesses (within one block of the works area) Royal Albert Apartments / Perry House The Sebel Oaks Festival Towers Mantra on Mary Capri by Fraser Four Points by Sheraton Royal on the Park Pullman King George Square iStay River City Property owners, residents and businesses of Albert Street (Elizabeth – Alice Streets), Elizabeth, Charlotte and Mary Streets Queen Street Mall businesses	
Community facilities / churches / groups	Albert Street Uniting Church City Botanical Gardens Albert Street Traders Group	
Other infrastructure projects	Destination Brisbane / Queen’s Wharf ISBT / Myer Centre redevelopment Other inner city developments	
Nearby community / Directly Affected Persons (DAP)	Property owners, residents and businesses of Brisbane City DAP identified according to modelling undertaken ahead of major activities.	

5.1.5 Woolloongabba Station

Woolloongabba stakeholders in addition to those found whole-of-project are summarised in Table 13 below, using the key provided.

IAP2 Key:  Empower  Collaborate  Involve  Consult  Inform

Table 13 Woolloongabba key stakeholders

Stakeholder category	Individual stakeholders	IAP2 level
Key strategic partners	Brisbane City Council (traffic management) TransLink (Woolloongabba Busway)	
Government	The Hon Kate Jones MP, Minister for Innovation and Tourism Industry Development	
	Ms Terri Butler MP – Federal Member for Griffith Cr Jonathon Sri, Councillor for The Gabba Ward The Hon Jackie Trade, State Member for South Brisbane and Deputy Premier	
Owners and occupiers of sensitive sites	Relevant Aboriginal Parties Stadiums Queensland (The Gabba) Queensland Cricketer’s Club St Nicholas Russian Orthodox Church St Joseph’s Complex The former Woolloongabba Post and Telegraph Office The Chalk Hotel Gabba Central Kangaroo Point Holiday Apartments	
Nearby educational institutions	East Brisbane State School St Joseph’s Primary School	
	Southbank TAFE	
Nearby health providers and precincts	St Vincent’s Private Hospital (along tunnel alignment at Kangaroo Point) Mater, Mater Mothers and Lady Cilento Hospital	
Community facilities / churches / groups	St Nicholas Russian Orthodox Church (as above) St Joseph’s Catholic Church (as above) Holy Trinity Anglican Church, Woolloongabba (heritage) Brisbane Australia Temple - The Church of Jesus Christ of Latter-day Saints Gabba Business Association Gabba Users (Roar, Lions, Heat, Cricket Australia)	
Nearby community / Directly Affected Persons	Property owners, residents and businesses in: <ul style="list-style-type: none"> Woolloongabba central, Vulture Street, Stanley Street, Main Street, Logan Road, Gibbon Street, Hubert Street and Reid Street 	 

Stakeholder category	Individual stakeholders	IAP2 level
	<ul style="list-style-type: none"> Woolloongabba wider community, including Fleurs, Peterson, Longwood, Lockhart, Ross, Abingdon Streets Kangaroo Point, including River Terrace, Paton, Thomas, Bell, Sinclair, Llewellyn, Baines, Walmsley, Lockerbie, Anglesey, Mark, Lahey Streets 	

5.1.6 Boggo Road Station and Southern Portal

Boggo Road Station and Southern Portal stakeholders in addition to those found whole-of-project are summarised in Table 14 below, using the key provided.

IAP2 Key: ● Empower ● Collaborate ● Involve ● Consult ● Inform

Table 14 Boggo Road key stakeholders

Stakeholder category	Individual stakeholders	IAP2 level
Key strategic partners	Queensland Rail (works in corridor and adjacent to Park Road and Dutton Park Stations) TransLink (services and Busway) RIS Contractor (integration with new infrastructure in rail corridor) Brisbane City Council (traffic management)	
Government	The Hon Kate Jones MP, Minister for Innovation and Tourism Industry Development Ms Terri Butler MP – Federal Member for Griffith Cr Johnathon Sri, Councillor for The Gabba Ward The Hon Jackie Trad, State Member for South Brisbane and Deputy Premier	
Owners and occupiers of sensitive sites	Relevant Aboriginal Parties Leukaemia Foundation ESA Village Ecosciences Precinct / tenants (including CSIRO and DPHW) Translational Research Institute Boggo Road Gaol Princess Alexandra Hospital Dutton Park State School Quarry Street and Park Road tunnel alignment properties	
Nearby educational institutions	Dutton Park State School (as above) Reading and Autism Hub Speld Qld Sunshine Welfare and Remedial Association (SWARA) Vision Australia Inner City Secondary School (future) University of Queensland	

Stakeholder category	Individual stakeholders	IAP2 level
Nearby health providers and precincts	PA Hospital (as above) Pharmacy Australia Centre of Excellence	
Community facilities / churches / groups	Dutton Park Police Station Holy Annunciation Orthodox Church	
Nearby community / Directly Affected Persons (DAP)	Property owners, residents and businesses in: <ul style="list-style-type: none"> • Peter Doherty Street, Dutton Park • Railway Terrace, Rawnsley, Dutton, Pound Streets, Dutton Park • DAP identified according to modelling undertaken ahead of major activities. 	

6 Implementation

Please see below details for implementation as part of specific community consultation plans, including advance notifications.

Table 15 Engagement process

Action	Comments	Stakeholder Group
August - October 2019 – initial engagement		
Meetings and briefings	Meetings to introduce project construction timeframes and mitigations Follow-up meetings will be arranged as required Offer to sign-up for monthly email Fortnightly meetings with body corporates.	Owner/occupiers of sensitive sites Educational institutions Health providers Community facilities/churches/groups Directly Affected Persons Surrounding residents / businesses / stakeholders as required.
Doorknock	Doorknock of local residents/businesses/stakeholders to discuss construction activity and mitigation measures Offer to sign-up for monthly email.	Surrounding residents/businesses/stakeholders.
Letter	Project introduction letter and outline of initial activities.	Project-wide distribution list.
Building condition surveys	Letter sent to owners of identified properties offering surveys Building Condition Survey Reports sent to owners	Identified property owners.
Works notification	Start of construction works notification including timeframes, potential impacts, mitigation measures, project contact information.	Station site distribution list Surrounding residents/businesses/stakeholders
Email	Project introduction letter and outline of initial activities Sent at start of construction to advise timeframes, potential impacts, mitigation measures, project contact information etc.	Project-wide distribution list
Project information sessions	Drop-in session to advise of design, timing and mitigation measures.	Directly Affected Persons and surrounding residents/ businesses/stakeholders Road and public transport users
BMTMC update	Start of construction notification BMTMC updates, as required by traffic management protocols.	Road and public transport users
Signage	Signage erected on site to advise of project works, closure of public access areas, changes to access, site hoardings.	Road and public transport users Pedestrians and cyclists Surrounding businesses and residents

Action	Comments	Stakeholder Group
Website updates	Overview of works added to construction page of the project website.	All groups.
Social media	Social media posts, as required.	All groups.
Media statement	Media statement regarding start of works.	All groups.
Enquiry management	Ongoing responses to enquiries via 1800 number and project email.	All groups.
Prior to construction activities: ongoing basis		
Variable message signage	Changed traffic conditions signage, as per approved traffic management plan.	Road and public transport users Pedestrians and cyclists Surrounding businesses and residents
Social media updates	Social media posts to advise of works commencement.	Social media users
During construction activities: ongoing basis		
Monthly emails (eNews)	Upcoming works and project progress update.	Surrounding residents/businesses/stakeholders who subscribe to updates Road and public transport users who subscribe to updates.
Meetings	Meetings as required by construction activity or stakeholder contact.	Schools Special interest groups Impacted residents/businesses/ stakeholders.
Works Notifications	Distributed in advance, as required to inform of changed construction activity, out of hours work or disruptive activity.	All groups.
Check in calls/ meetings	Telephone and face-to-face contact with impacted residents and businesses to proactively identify any concerns around construction management.	All groups.
Social media updates	Upcoming works and project progress updates.	All groups.
Website updates	Information on current works activity, progress updates, images and videos on the construction page.	All groups.
Media opportunities	Media opportunities at project milestones as identified.	All groups.
Enquiry management	Ongoing responses to enquiries and complaints via 1800 number and project email.	All groups.

7 Communication Management

7.1 Contacting Cross River Rail Delivery Authority

There are various avenues through which the community can contact and engage with the Delivery Authority, including by phone, email and post as per the details listed below:

- 1800 010 875 (24 hours, seven days a week)
- crossriverrail@cbgujv.com.au
- PO Box 15476, Brisbane City East, QLD 4002.

Stakeholders and the community can also stay informed of project updates through the project's social media channels on Facebook, Twitter and LinkedIn at the below addresses:



CBGU will respond to enquiries and complaints as outlined below:

Table 16 Enquiries

Enquiry Source	Initial Response Time	Resolution Time
Project hotline	4 hours	3 working days
Email	24 hours	5 working days
Social media	4 hours	24 hours
Written correspondence	2 working days	5-10 working days

7.2 Issues and Complaints Management

CBGU has identified a number of potential impacts which may be experienced during ongoing construction. The proposed mitigation, monitoring and verification measures that will be implemented are outlined in the table below.

Table 17 Issues Management

Item	Key Actions	Mitigation or Engagement Required
Survey, PUP and geotechnical investigations	<p>Advise the community of work activities, potential impacts</p> <p>Notify the broader community of any changes to public access (eg. site investigation activities along local roads, bicycle and pedestrian paths).</p>	<p>Taking into consideration potential timeframes for the mobilisation of early works activities, public notifications will be provided via:</p> <ul style="list-style-type: none"> • An information flyer/construction notification, including 24-hour contact details for registering complaints or obtaining further information about activities or their impacts • Works notifications to be uploaded to the Cross River Rail website. <p>Changes to public access, particularly bicycle and pedestrian pathways, will be communicated to users via signage and on-site traffic control and direct notification to the Bicycle user groups.</p> <p>Any work affecting private property access will be communicated directly with the property owner/resident/tenant as required.</p>
Site establishment (creation of access roads, minor excavation, installation of sheds / amenities and hoarding / fencing)	<p>Advise neighbouring residents/businesses of activities to set up precinct sites and potential localised impacts.</p> <p>Notify the broader community of the progress of activities</p>	<p>Notification:</p> <ul style="list-style-type: none"> • Types of equipment required • General layout / location of site • Expected hours of operation, including permitted site preparation works to occur outside standard hours • Contact details for further information and complaints (1800 number). <p>Meetings will be held with sensitive receptors and adjacent property owners/residents/businesses to outline the methodologies and determine suitable mitigations, including identified Directly Affected Persons.</p>
Demolition and stock pile management	<p>Advise neighbouring residents/businesses of activities and potential localised impacts.</p> <p>Notify the broader community of the progress of activities.</p>	<p>Notification:</p> <ul style="list-style-type: none"> • Types of equipment required • Specific work activities/methodologies • Expected hours of operation, including permitted site preparation works to occur outside standard hours • Contact details for further information and complaints (1800 number). <p>Meetings will be held with sensitive receptors and adjacent property owners/residents/businesses to outline the methodologies and determine suitable mitigations, including identified Directly Affected Persons.</p>
Piling	<p>Advise neighbouring residents/businesses of activities and potential localised impacts.</p>	<p>Notification of the use of piling and associated equipment, expected durations of the activity and hours of work.</p> <p>Meetings will be held with sensitive receptors and adjacent property owners/residents/businesses to outline the</p>

Item	Key Actions	Mitigation or Engagement Required
	<p>Notify the broader community of the progress of activities</p>	<p>methodologies and determine suitable mitigations, including identified Directly Affected Persons.</p>
<p>Tunnel excavation – Noise and Vibration</p>	<p>Advise stakeholders located on the tunnel path of potential impacts from tunnelling and progress of activities</p>	<p>Where the works in a locality have potential to exceed the vibration and noise goals nominated, undertake advanced consultation with Directly Affected Persons to determine suitable mitigations as outlined in CEMP and CAP's and inform them of the construction program including timing of activities.</p> <p>Undertake advanced consultation with sensitive receptors and adjacent property owners/residents/businesses ahead of tunnelling activities. Consultation is to include information on the rate of progress, the potential effects and the monitoring program which may require involvement from residents located above the main tunnel alignments.</p>
	<p>Respond promptly to enquiries and complaints.</p>	<p>General enquiries and complaints regarding vibration will be handled by phone, email or in person.</p> <p>If necessary, the Environment team member will set up a measuring device to monitor vibration for that area and, if vibration is within operational goals, the stakeholder will be notified.</p>
<p>Noise impacts – ongoing activities</p>	<p>Advise neighbouring stakeholders of potentially disruptive works.</p>	<p>Notifications will detail:</p> <ul style="list-style-type: none"> • Reason for the activity • Types of equipment required • Expected hours of operation, including permitted site preparation works to occur outside standard hours • Likely duration and impact of the operation and any requirement for subsequent additional works • Contact details for further information and complaints (1800 number). <p>Meetings will be held with sensitive receptors and adjacent property owners/residents/businesses to outline the methodologies and determine suitable mitigations, including identified Directly Affected Persons where works in a locality have potential to exceed the noise requirements nominated.</p> <p>Operators of construction equipment to be made aware of the potential noise/ vibration problems and of techniques to minimise emission through a continuous process of operator education. This will include regularly training staff and subcontractors (i.e. via toolbox talks) through to using equipment in ways to minimise noise</p> <p>Installation of noise walls or acoustic screens where practical and deemed to be effective.</p>
	<p>Respond promptly to enquiries and complaints about noise.</p>	<p>The severity of noise impacts depends on a stakeholder's sensitivity/threshold levels and physical proximity to the source of noise.</p>

Item	Key Actions	Mitigation or Engagement Required
<p>Night work (Out of hours activities, managed work and extended hours work)</p>	<p>Advise neighbouring residents and affected businesses of work outside of normal day time construction hours..</p>	<p>If necessary, the Environment Team will set up a noise monitor to measure noise levels, determine if they are within operational goals and inform the stakeholder if they are within goals. Other potential solutions to mitigate noise will be investigated and implemented if feasible.</p> <p>Potentially impacted residents, accommodation providers and/or businesses that operate at night will be advised of night work, the reasons for the work, and any proposed mitigation measures.</p> <p>Minimise the impact of noise and vibration associated with cutting, or hammering, by completing this work in the early part of shift where possible. Where it is essential to continue these activities through the night, the use of temporary noise barriers/controls will be investigated.</p> <p>Fence screens (with double-panels, where necessary) erected around the work to prevent the projection of noise toward residential areas where practical.</p> <p>Issue radios to crew members to avoid shouting and loud conversations within earshot of houses, and conversations in crib huts near residential areas to be kept quiet in consideration of sleeping residents.</p>
<p>Vibration impacts</p>	<p>Advise neighbouring stakeholders of expected vibration levels</p> <p>Respond promptly to enquiries and complaints about vibration.</p>	<p>Advise neighbouring stakeholders about the expected levels of vibration and the reasons for those levels through flyers and/or individual briefings (if necessary).</p> <p>General enquiries and complaints regarding vibration will be handled by phone, email or in person.</p> <p>If necessary, the Environment team member will set up a measuring device to monitor vibration for that area and, if vibration is within operational goals, the stakeholder will be notified.</p> <p>Meetings will be held with sensitive receptors and adjacent property owners/residents/businesses to outline the methodologies and determine suitable mitigations, including identified Directly Affected Persons.</p> <p>Selection of equipment to minimise vibrational impacts, where possible.</p> <p>Where the works in a locality have potential to exceed the vibration goals nominated, then the following actions would be applied as relevant:</p> <ul style="list-style-type: none"> • Building Condition Surveys to be undertaken at identified properties • Known sensitive receptors to be monitored only if activities exceed Construction Noise and Vibration goals • Identify residential properties and other places especially sensitive to sleep disturbance (e.g. hospitals, nursing homes and child care centres) • Identify and determine the specifications for building equipment known to be sensitive to vibration, such as computers, microscopes, surgical equipment

Item	Key Actions	Mitigation or Engagement Required
		<p>Implement practical and reasonable mitigation measures that would achieve the environmental outcomes or achieve alternative outcomes developed in consultation with Directly Affected Persons. These include:</p> <ul style="list-style-type: none"> • Substitution of alternate (quieter) methods • The use of silencers on major items of equipment • The use of barriers or hoarding where possible • Consideration of materials handling measures including the use of damped receptacles and avoiding the dropping of material from heights. <p>Ensure ground vibration levels transmitted from operating items of plant in the vicinity of buildings do not exceed levels that are close to the lower level of human perception inside the premises or cause structural damage to the buildings and other structures, through:</p> <ul style="list-style-type: none"> • Utilising existing baseline condition measurements already undertaken by CRRDA before commencement of the works. Additional vibration monitoring to be undertaken at known sensitive receptors if activity exceeds goals. • Progressively monitoring during the works to confirm conformance with approval conditions. <p>Where ground-borne vibration monitoring indicates either the vibration goals relative to human health and wellbeing would be exceeded, then engage with the Directly Affected Persons to develop mitigation measures.</p>
Air quality impacts	<p>Advise neighbouring stakeholders of air quality impacts</p> <p>Respond promptly to enquiries and complaints about dust.</p>	<p>Neighbouring stakeholders will be advised of potential dust impacts via community notification flyers and/or individual briefings (if necessary).</p> <p>General enquiries and complaints regarding dust will be handled by phone, email or in person.</p> <p>Air quality monitoring and reporting will be undertaken throughout construction, as per the CEMP.</p> <p>Stakeholder engagement team will work with the construction team to mitigate any air quality issues raised by stakeholders through:</p> <ul style="list-style-type: none"> • Managing dust-creating works according to meteorological conditions • Water sprays and covering loads of material transported from the worksites • Visually monitoring vehicle movements on a regular basis to prevent queuing in streets and preventing queuing vehicles idling • Installation of hoardings or barriers on worksite perimeters, where appropriate, to help mitigate dust impacts by acting as wind breaks • The site shall be visually monitored daily for excessive dust generation and corrective actions undertaken to minimise dust where possible

Item	Key Actions	Mitigation or Engagement Required
		<ul style="list-style-type: none"> • Undertaking ambient odour inspections for potential odour-generating activities (e.g. excavation of contaminated soils) on a daily basis • Where piling work is being undertaken, 2 m high hoarding will be installed for dust control, rock piling pads will be used, with appropriate onsite water control measures.
Blasting	Advise the surrounding community of blasting activities	<p>In addition to normal project notification of upcoming work to the community, neighbouring stakeholders will be advised of blasting activities and potential impacts such as noise and vibration at least 48 hrs prior to activities (if necessary).</p> <p>General enquiries and complaints regarding blasting activities will be handled by phone, email or in person.</p>
Natural environment impacts	<p>Advise the community of potential impacts to the natural environment and mitigations</p> <p>Respond promptly to enquiries and complaints about impacts on the natural environment.</p>	<p>The CRR website, fact sheets and newsletters will contain information about environmental mitigation measures and standards to alleviate concerns about the project’s environmental impacts.</p> <p>The Environment Team will investigate complaints regarding the environment.</p> <p>CBGU will actively discuss environmental outcomes and procedures with environmental stakeholder groups to promote an open, transparent process.</p>
Changes to traffic / access	<p>Advise neighbouring stakeholders of any change to pedestrian, cycle or vehicle access</p> <p>Respond promptly to enquiries and complaints about access.</p>	<p>Notification:</p> <ul style="list-style-type: none"> • Include a full description of the relevant activities, including the intended start and finish dates, where relevant • Describe the impact the activities will have, including access restrictions, detours or diversions • Include 24-hour contact details for registering complaints or obtaining further information about the activities or their effects. <p>Affected neighbouring stakeholders will be advised of any changes to vehicle or pedestrian access to their properties and the reasons for the changes through flyers and/or individual consultation (as required).</p> <p>Changes to public access will be communicated to users via signage and email alerts.</p> <p>General enquiries and complaints will be handled by phone, email or in person.</p>
Pedestrian and cyclist safety	<p>Notify the community of any changes to public access (eg. footpath or bicycle path changes)</p> <p>Respond promptly to enquiries and complaints about access.</p>	<p>Cyclist access will be clearly defined through the construction site.</p> <p>The Delivery Authority will proactively engage with bicycle user groups.</p> <p>Defined pedestrian pathways will be used during construction.</p> <p>CBGU will proactively engage with nearby schools and has offered to provide briefings and information about safety around construction sites.</p>

Item	Key Actions	Mitigation or Engagement Required
Changes to parking	<p>Advise community and neighbouring stakeholders of changes to parking and notify affected car park users of alternative car parking</p> <p>Liaise with BCC regarding parking arrangements</p> <p>Respond promptly to enquiries and complaints about changes to parking.</p>	<p>The community and neighbouring stakeholders will be advised of changes to parking and the reasons for those changes through flyers, advertisements and/or individual briefings (as required).</p> <p>General enquiries and complaints will be handled by phone, email or in person.</p>
Property impacts	<p><i>Pre-construction:</i> property condition surveys</p> <p>Eligible properties will be identified using noise and vibration predictive maps</p> <p>Assist with briefing owners/occupiers of affected properties.</p> <hr/> <p><i>During construction:</i> surveys/reports will be lodged with CBGU for reference</p> <p>Investigate any claims of damage to property.</p> <hr/> <p><i>Post construction:</i> surveys/ reports will be handed over to the operations team for reference</p> <p>Follow up on repair works and close claims.</p>	<p>Surveys/reports will be completed by an independent assessor and photos taken of existing damage.</p> <p>The CSET will assist with briefing owners/occupiers of properties requiring a survey/report via letter or in person (if required) and will answer any enquiries about the process.</p> <hr/> <p>CBGU will visit affected stakeholder to investigate the damage claim to determine if the damage was caused by construction. If so, arrangements will be made to undertake non-urgent repairs post-construction, or urgent repairs as soon as possible.</p> <hr/> <p>Properties that claimed damage and were assessed to have damage caused by construction will be revisited post-construction and any damage not repaired during construction will be repaired.</p> <p>CBGU will liaise between the stakeholder and construction team to ensure repairs are completed and signed off.</p>
Community claims	<p>Community claims are claims other than those that can be addressed by the property damage claims process above.</p> <p>The project team will take due care in carrying out the works. However, from time to time community claims may arise. CBGU will investigate and respond promptly to complaints / claims.</p>	<p>Damages claims will be handled by phone, email and in person.</p> <p>CBGU will visit the affected stakeholder to investigate the damage claim to determine if the damage was caused by the project. If so, arrangements will be made to undertake repairs as soon as possible.</p>

7.3 Making a Complaint

Enquiries, complaints and social media comments will be managed promptly and effectively in a manner that avoids unnecessary escalation.

Telephone contact will be made with a complainant where a phone number is provided or available in the Customer Relationship Management (CRM) database. All team members will employ the following methods to establish the nature of the complaint and the needs of the complainant:

- Active listening
- Reducing barriers
- Open and closed questioning
- Summarising the call
- Confirming level of satisfaction with the actions and timeframes.

CBGU will investigate and determine the source of a complaint immediately and provide an immediate response. The aim of complaints resolution is to adequately resolve the complaint to the satisfaction of the complainant, take all actions and implement all practicable measures to prevent the reoccurrence of stakeholder and community complaints.

7.4 Recording and reporting of enquiries and complaints

Enquiries and complaints made to the project team will be recorded in the Customer Relationship Management (CRM) database. This will include recording details of the person making contact with the project team including:

- Date and time of contact
- Preferred return contact details (at a minimum a phone number or email)
- Organisation (if representing on behalf of a company/organisation)
- Address
- Recorder of the complaint
- Details of the enquiry/complaint for investigation including area of project where concern has arisen. This includes a description of the specific activity causing the complaint including place, time and date
- The entity responsible for addressing the complaint
- The action taken to address the complaint, if necessary
- Feedback given to the complainant
- Time and date on which the complaint was addressed and closed out
- Any subsequent remedial action required to avoid cause for future complaints if relevant.

These details together with actions taken in response to the enquiry/complaint will be made available to the Delivery Authority, the Community Relations Monitor and the Independent Environmental Monitor through project reporting channels.

7.5 Dispute resolution

Should a complaint be of an ongoing nature, whereby every reasonable effort has been to resolve it between the complainant and the project team, the matter may be escalated to the Community Relations Monitor for mediation and to determine a result as shown in Appendix A. Details of the Community Relations Monitor are available on the project website crossriverrail.qld.gov.au

If a dispute relates to potential non-compliance with Coordinator-General Conditions then this may be escalated to the office of the Coordinator-General and the entity with jurisdiction (DTMR).

Appendix A

Enquiries and Complaints Management
Process

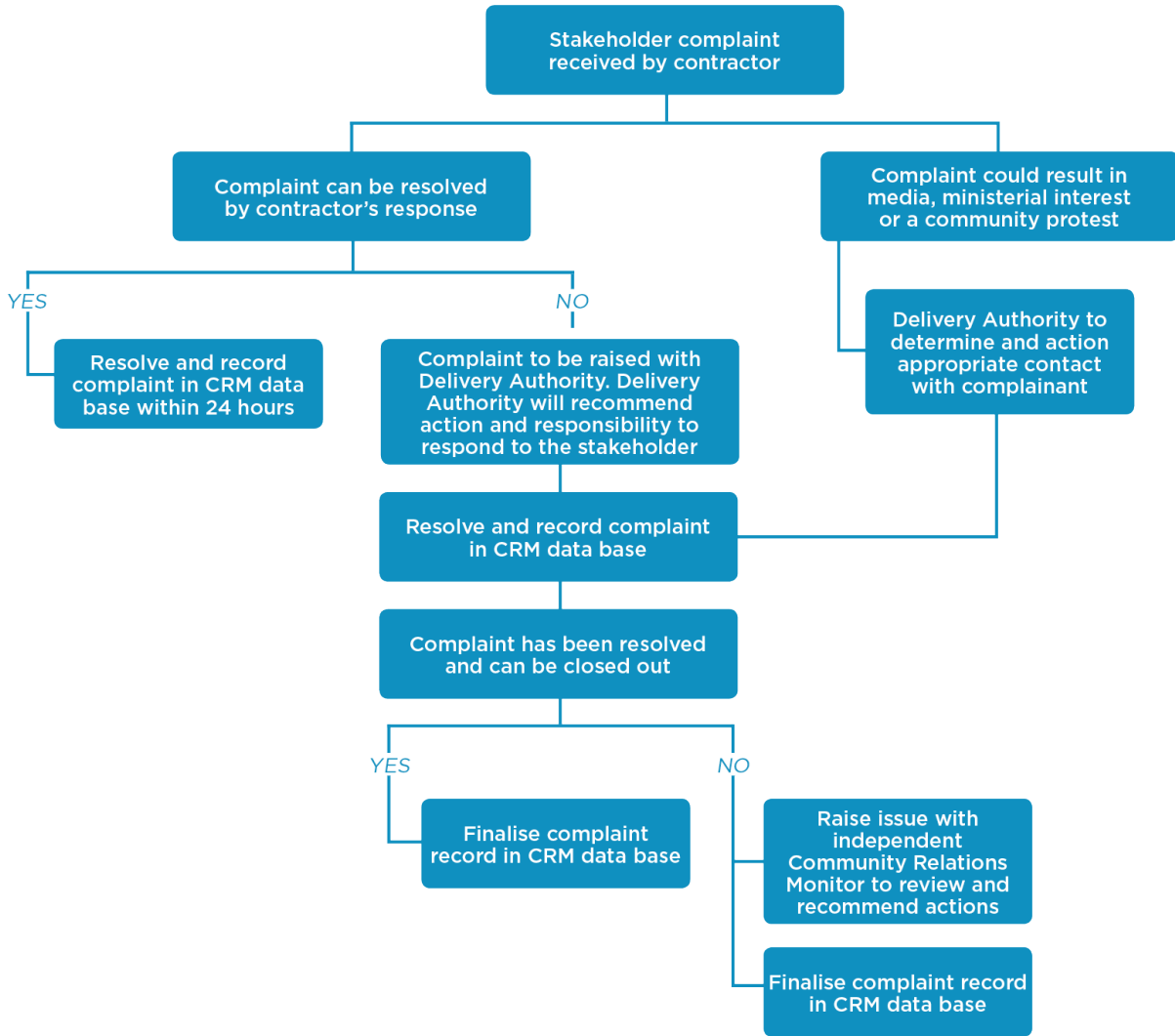


Figure 3 Enquiries and Complaints Management Process