

# Hazard and Risk Management Plan

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

REV	DATE	PREPARED BY NAME & SIGNATURE	REVIEWED BY NAME & SIGNATURE	APPROVED BY NAME & SIGNATURE	REMARKS

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# Compliance Matrix

Table 1 Compliance matrix

CRRDA REFERENCE	REQUIREMENT	ADDRESSED IN SECTION
Coordinator-General's change report Appendix 2		
Recommendation 3. Silicosis	<p>The proponent should consider the findings from the Coal Workers' Pneumoconiosis Select Committee final report, Black Lung White Lies – Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland. Implement relevant recommendations regarding the potential impacts from silica to underground workers involved in tunnelling construction (silicosis) and include in:</p> <p>(a) The Hazard and Risk sub-plan</p>	Section 3.2.1

## 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 before being distributed / implemented.

### 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.

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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 2      *Referenced Documents*

Document Number	Document Name	Location of Controlled Version
Referenced Project Plans include:		
CRRTSD-EN-ENMP-CBGU-000015	Asbestos Management Plan	TeamBinder
CRRTSD-EN-MPL-CBGU-000019	Construction Environmental Management Plan	TeamBinder
CRRTSD-TM-MPL-CBGU-000012	Construction Traffic Management Plan	TeamBinder
CRRTSD-CS-MPL-CBGU-000036	Construction Worksite Management Plan	TeamBinder
CRRTSD-EN-ENMP-CBGU-000007	Hazardous Goods Management Plan	TeamBinder
CRRTSD-SH-MPL-CBGU-000003	OHS Management Plan	TeamBinder
CRRTSD-CU-MPL-CBGU-000018	Communications and Stakeholder Engagement Management Plan	TeamBinder
CRRTSD-EN-ENMP-CBGU-000002	Waste Management Plan	TeamBinder
CRRTSD-RM-MPL-CBGU-000007	Risk & Opportunity Management Plan	TeamBinder
CRRTSD-SH-MPL-CBGU-000017	Emergency Response and Incident Management Plan	TeamBinder
	Onboarding Guideline (Health and Safety)	TeamBinder
	CPB Safety Essentials Booklet	TeamBinder

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

# Glossary of Terms

Table 3 Terms

Term	Meaning
AMP	Asbestos Management Plan
AQMP	Air Quality Management Plan
BCC	Brisbane City Council
CBGU	D&C Contractor comprising a joint venture with CPB Contractors Pty Ltd, BAM International Australia Pty Ltd, Ghella Pty Ltd and UGL Engineering Pty Ltd
CMS	CPB Management System
CEMP	Construction Environmental Management Plan
CRRDA	Cross River Rail Delivery Authority acting on behalf of the State
CRR TSD (the Project)	Cross River Rail - Tunnels, Stations and Development (TSD) Project
CSEP	Community and Stakeholder Engagement Plan
CTMP	Construction Traffic Management Plan
DTMR	Department of Transport and Main Roads (QLD)
ERP	Emergency Response Plan
FM	Facilities Manager
GIS	Geographic Information System
HGMP	Hazardous Goods Management Plan
HRMP	Hazard and Risk Management Plan
ISA	Independent Safety Assessor
NVMP	Noise and Vibration Management Plan
O&M	Operations and maintenance
OEMP	Outline Environmental Management Plan
OHHP	Occupational Health and Hygiene Plan
PIC	Project Independent Certifier
PSTR	Project Scope and Technical Requirements
QAS	Queensland Ambulance Services
QOHA	Qualitative Occupational Hygiene Assessment
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
ROMP	Risk and Opportunity Management Plan

Term	Meaning
SPMP	Spoil Placement Management Plan
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 - Tunnels, 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
WHSMP	Workplace Health and Safety Management Plan

# 1 Introduction

## 1.1 Purpose

The Design and Construction Joint Venture comprising of CPB Contractors Pty Ltd, BAM International Australia Pty Ltd, Ghella Pty Ltd and UGL Engineering Pty Ltd (CBGU D&C JV or CBGU) is responsible for delivering the Cross River Rail (CRR) Project (the Project) on behalf of the Cross River Rail Delivery Authority (the Delivery Authority).

This Hazard and Risk Management Plan should be read in conjunction with the Project's overarching Construction Environment Management Plan (CEMP).

The CEMP provides specific details regarding the background of the Project, the scope of the Project and the staging and timing of key milestones associated with the construction of the Project.

## 1.2 Objectives

The objectives of this Hazard and Risk Management Plan (HRMP) which is a sub-plan of the Construction Environmental Management Plan (CEMP) are to:

- Guide staff and subcontractors on hazardous materials management within the Project area and/or Project vicinity during construction
- Appropriately manage specific construction activities that have the potential to cause contamination as a result of hazardous material use
- Minimise risks to the environment, workers and to the public
- Ensure that all hazardous materials stored onsite are handled in a responsible manner and in accordance with legislative requirements.

## 1.3 Legislative Framework

### 1.3.1 Commonwealth Legislation

- *Environmental Protection and Biodiversity Conservation Act 1999.*

### 1.3.2 State Legislation

State legislation that is relevant to the Project and this HRMP includes:

- |   |   |
|---|---|
| • <i>Building Act 1975</i>                            | • <i>City of Brisbane Act 2014</i>                    |
| • <i>Cross River Rail Delivery Authority Act 2016</i> | • <i>Dangerous Goods Safety Management Act 2001</i>   |
| • <i>Economic Development Act 2012</i>                | • <i>Environmental Protection Act 1994</i>            |
| • <i>Environmental Protection (Air) Policy 2008</i>   | • <i>Environmental Protection (Noise) Policy 2008</i> |
| • <i>Environmental Protection (Water) Policy 2008</i> | • <i>Explosives Act 1999</i>                          |



- *Land Act 1994*
- *Planning Act 2016*
- *Queensland Heritage Act 1992*
- *Transport Planning and Coordination Act 1994*
- *Transport Security (Counter Terrorism) Act 2008*
- *Building (Flammable and Combustible Liquids) Regulation 1994*
- *Transport Operations (Passenger Transport) Act 1994*
- *Local Government Act 2009*
- *Public Health Act 2005*
- *Transport Infrastructure Act 1994*
- *Transport (Rail Safety) Act 2010*
- *Work Health and Safety Act 2011*
- *State Development and Public Works Organisation Act 1971*
- *Transport Operations (Road Use Management) Act 1995*

### 1.3.3 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.

All relevant approvals, permits and licences have been identified in the CEMP.

### 1.3.4 Guidelines and Standards

Guidelines and standards related to the management of noise and vibration, that must be met include, but are not limited to:

- AS/NZS ISO 14001 Environmental management systems
- AS/NZS ISO 31000 Risk Management – Principles and Guidelines
- AS/NZA 3833:2007 The Storage and Handling of Mixed Classes of Dangerous Goods, in Packages and Intermediate Bulk Containers
- Australian Explosives Code for the Transport of Explosives by Road and Rail (AEC3)
- ISO/IEC 31010 Risk management – risk assessment techniques
- AS4292 Rail Safety Management
- Rail Safety National Law
- Queensland Rail Limited's Safety Management System including MD-11-1338 Standard – Risk Management, MD-12-219 and Safety Change Management
- AS 1216 Classification, Hazard identification and Information Systems for Dangerous Goods
- AS 1678 Emergency Procedure Guides – Transport
- AS 1940 Storage and Handling of Flammable and Combustible Liquids
- AS 3780 The Storage and Handling of Corrosive Substances

- AS 2809 Road Tank Vehicles for Dangerous Goods
- AS 2931 Selection of Use of Emergency Procedure Guides for Transport of Dangerous Goods
- AS 2187 Explosives – Storage, Transport and Use.

## 2 Required Outcomes

### 2.1 Coordinator-General Conditions

The Imposed Conditions do not contain any specific Hazard and Risk requirements. However, in complying with the Imposed Conditions more broadly, the Project will aim to achieve the below recommendation within the Coordinator General's Change Report and can be found on the Coordinator-General's website (<http://www.dsdmip.qld.gov.au/coordinator-general/assessments-and-approvals/coordinated-projects/completed-projects/cross-river-rail-project.html>).

### 2.2 Environmental Outcomes

The following environmental outcomes in relation to hazard and risk are to be achieved for the Project:

- Construction activities are managed to mitigate the risks associated with inundation, construction failures or incidents, tunnel collapse, fire and life safety, hazardous chemicals, and traffic hazards.

### 2.3 Performance Criteria

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

- A safe working environment is maintained for the construction workforce, near neighbours and passers-by, including pedestrians, cyclists and motorists
- The Project hazard and risk register is maintained as a current and accurate central record of Project hazards and risk reduction/mitigation strategies that are adopted throughout construction

## 3 Impacts and Mitigation Measures

### 3.1 Impacts

The potential impacts associated with construction hazards and risks have been identified:

- The need to evacuate the underground tunnel and stations in the event of an emergency during construction was assessed as having the highest risk level
- Operating vehicles and equipment in a confined tunnel space
- Storing and using dangerous goods
- Transporting spoil
- Working with electricity
- Flooding or inundation
- Air quality for tunnel workers
- Changes of surface road and service.

### 3.2 Mitigation

#### 3.2.1 General Mitigation Measures

The following mitigation measures shall be implemented to achieve the nominated environmental outcomes and performance criteria:

- A Risk and Opportunity Management Plan (ROMP) has been developed that considers the potential risks associated with construction including, but not limited to:
  - risk minimisation and incident management
  - inundation of surface works
  - flood inundation of the underground works
  - tunnel collapse
  - fire and human safety
  - hazardous chemicals and dangerous goods
  - traffic hazards associated with construction traffic (Outline HRMP p.8).
- Implement, review and maintain the Principal Project Risk Register (PPRR) as the current and central record of Project hazards and risk reduction/mitigation strategies that will be adopted throughout construction (from the Outline Construction Environmental Management Plan – Outline Hazards and Risk Management Plan (OHRMP) p.8).
- A Hazardous Goods Management Plan (HGMP) outlines mitigation measures for storing and transporting hazardous chemicals and dangerous goods (from the Outline Construction Environmental Management Plan – Outline Waste Management Plan (OWMP) p.8).

- Implement risk mitigation strategies for the hazards identified for each Project aspect in the PPRR (OHRMP p.8).
- An Emergency Response and Incident Management Plan (ERIMP) and management procedures have been prepared in consultation with Emergency Service Authorities. These shall provide training for staff in the appropriate use, handling, storage and transportation of dangerous goods and hazardous substances and ongoing monitoring of compliance of personnel with safety procedures and also include as a minimum:
  - responsibilities in the event of an incident
  - traffic management and control systems
  - evacuation routes in the event of an incident
  - education and training programme for the construction workforce on the procedures
  - procedures for conducting simulated emergency response exercise. This is to be conducted at least once within 12 months of the commencement of construction works (OHRMP p.8).
- Access for emergency services vehicles to construction worksites and other work areas is provided and maintained at all times. Further details are provided in the Construction Traffic Management Plan (CTMP) (OHRMP p.8)
- The HGMP provides hazard mitigation measures for the storage of flammable and combustible liquids that comply with AS 1940, any other relevant standards, and the WHS Act (OHRMP p.8)
- The WHSMP outlines fire and life safety measures, including ventilation, smoke extraction and firefighting systems for enclosed spaces and enclosed work areas such as underground works areas, acoustic enclosures and sheds, for the duration of construction (OHRMP p.8)
- Each site is fitted with a back-up generator if loss of power occurs
- The Construction Management Plan (CMP) provide construction procedures that comply with the Rail Transport Operator's standards for track isolation and protection of rail infrastructure (OHRMP p.8)
- The Communications and Stakeholder Engagement Plan (CSEP) outlines measures to establish procedures for communication with the Rail Transport Operator about construction activities in or near to the rail corridor and potential hazards and risks (OHRMP p.8)
- The CSEP outlines measures to establish a communication process with Emergency Service Authorities in relation to temporary road closures and disruptions and relocation of water mains that would affect hydrants near construction works (OHRMP p.8)
- The CSEP outlines measures to establish procedures for communication with BCC and TMR about potential hazards and risks associated with construction activities in or near to state and local roads, and busways (OHRMP p.8)
- A Qualitative Occupational Hygiene Assessment (QOHA) will be undertaken to inform the Occupational Health and Hygiene Plan (OHHP).

## 4 Compliance Management

### 4.1 Roles and Responsibilities

The Contractor's organisational structure and overall roles and responsibilities are to be in accordance with those outlined in the CEMP, as agreed with the Authority. Specific responsibilities for the implementation of the environmental controls are to be detailed in the CEMP.

### 4.2 Induction and Training

To assist with fulfilling the legislative duties and obligations, a training plan has been developed that identifies the requirements for each role within the Project and includes environmental and cultural heritage awareness training.

All staff, sub-contractors and visitors to construction worksites must attend induction training that covers off the site wide controls as well as site-specific and work-specific risks and mitigation measures. The minimum contents of the inductions are outlined in the CEMP.

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

A training register will be maintained by CBGU to record training attendance and currency of training for each staff, contractor and visitor.

### 4.3 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 requirements of the overarching CEMP.

### 4.4 Incidents and Emergencies

All incidents and emergencies are to be managed according to the process as outlined in the CEMP and detailed in the Emergency Response Plan (ERP) and WHSMP.

Incidents that may occur during the Project include a non-conformance with this plan or an approval or permit condition, a complaint from stakeholders of an environmental nature, or an incident involving material or serious environmental harms.

All Project and subcontractor personnel will report all environmental incidents and near misses to their supervisor and notify the Authority's Environmental Team. The incident or near miss will be recorded using processes outlined in the CEMP.

### 4.5 Inspections, Monitoring, Auditing and Reporting

#### 4.5.1 Environmental Inspections

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

If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance is observed, they will be recorded on the Project's Environmental Checklist, contained within the CEMP. A register of all corrective actions including due date, closed out date, item description and responsible person will be recorded in such a way as to be able to be generated into a register when required.

Inspections are to be undertaken as nominated in the CEMP.

#### 4.5.2 Environmental Monitoring

Monitoring will be undertaken at various locations to validate the impacts predicted for the Project to measure the effectiveness of environmental controls and implementation of this HRMP. The monitoring also helps in addressing any potential Community Complaints that may be made. The monitoring requirements specifically related to hazard and risk are outlined below:

- Routine worksite safety inspections and hazard and risk assessments are to be carried out each month during construction
- Within 12 months of the commencement of construction works, a simulated emergency response exercise is to be conducted in conjunction with the above-mentioned Emergency Services, on at least one occasion (OHRMP p.11).

#### 4.5.3 Environmental Auditing

Audits will be undertaken to assess the effectiveness of environmental controls, compliance with the CEMP, compliance with Environmental Design Requirements, and other relevant permits, approvals, and guidelines. There will be a monthly internal audit undertaken by CBGU as per the CEMP, who is to report findings to the Environmental Monitor and the Authority. This includes reporting on compliance with the CEMP and the Imposed Conditions.

Audits will be undertaken in accordance with the overarching CEMP.

#### 4.5.4 Environmental Reporting

To ensure compliance with Coordinator-General Condition 6, CBGU will prepare and submit a monthly report within 6 weeks from the end of the month.

Reporting requirements associated with this HRMP are outlined below:

- Ensure any incident is reported immediately on completion of the incident investigation and the Project hazard and risk register is updated as required.

The specific requirements of the Monthly Report have been identified in the CEMP.

#### 4.5.5 Incidents and Non-Compliance Event Reporting

Environmental incidents meeting the criteria of an NCE shall be notified verbally as soon as practical and to the Coordinator-General in writing within 48 hours of becoming aware of an incident occurring. Notification will generally be undertaken by the Environment and Sustainability Manager or delegate. Additional notification of the incident to the relevant authorities, EM and parent companies will also be undertaken as required. Further details regarding reporting, including provision of interim and detail reports have been provided in the overarching CEMP.

## 4.6 Document Reporting

The Contractor will coordinate the preparation, review and distribution as appropriate, of the environmental documents as detailed throughout the CEMP.

The Project will implement a document control procedure to control the flow of documents within and between Contractor, Regulatory Agencies, the Authority, the Environmental Monitor and relevant stakeholders and subcontractors.