Construction Environmental Management Plan (CEMP)

Transport for NSW
Supply, Operate, Maintain (SOM) Package 5
Parramatta Light Rail

May 2021
PLR1SOM-GLR-ALL-PM-PLN-000014 Rev 5

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About this release

Title	Construction Environmental Management Plan Parramatta Light Rail – Stage 1 – Supply, Operate and Maintain (SOM) Package 5

Version	Date	Prepared By	Approved By
A	10 April 2019	Advisian on behalf of GRCLR	
B	3 March 2020	Mott MacDonald Australia Pty Ltd on behalf of GRCLR	
C	6 April 2020	Mott MacDonald Australia Pty Ltd on behalf of GRCLR	
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5	17 May 2021	GRCLR	

Construction Environmental Management Plan

Parramatta Light Rail – Stage 1 – SOM Package 5

February 2021

PLR1SOM-GLR-ALL-PM-PLN-000014 Rev 5

Version control

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A	10 April 2019	Advisian on behalf of GRCLR
B	3 March 2020	Mott MacDonald Australia Pty Ltd on behalf of GRCLR
C	06 April 2020	Updated to address TfNSW and ER comments
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1	27 August 2020	Updated to include Consultation Report
2	29 September 2020	Updated to address DPIE comments
3	30 September 2020	Updated to address ER comments
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Contents

Delivery Phase Sustainability Management Plan

PLR1SOM-GLR-ALL-PM-PLN-000015

Version History Control Box

Date	Version Number	Revision	Author	Comments
21/06/2019	1	A		Draft for TfNSW review
8/11/2019	1	B		Updated to address TfNSW comments
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Approval Box

Action	Responsible Person
Approved by	Project Director
Document owner	Environment, Planning and Sustainability Manager

Table of Contents

Definitions and Acronyms

Terms	Meaning
BAU	Business As Usual
CERT	Carbon and Energy Reporting Tool
CRA	Climate Risk Assessment
DDR	Detailed Design Review
DSMP	Delivery Phase Sustainability Management Plan
EPD	Environmental Product Declaration
ETS	Electronic Ticketing System
GHG	Greenhouse gas
GRCLR	Great River City Light Rail
IC	Independent Certifier
IMS	Integrated Management System
Interface Contractor	Any relevant Rail Transport Agency, RMS (and its contractors), the Infrastructure Contractor, the Remediation Contractor, the Enabling Works Contractor, the RTR Contractor, and the ETS Contractor
IS	Infrastructure Sustainability
ISCA	Infrastructure Sustainability Council of Australia
JSEA	Job Safety and Environmental Analysis
LCA	Life Cycle Assessment
LRV	Light Rail Vehicle
O&M	Operation & Maintenance
PDMI	Plan-Do-Measure-Improve
PDR	Preliminary Design Review
PLR	Parramatta Light Rail
RMS	Roads and Maritime Service
RTR	Robin Thomas Reserve
RVTM	Requirements Verification Traceability Matrix
SaM Facility	Stabling and Maintenance Facility
SDG	Sustainable Design Guidelines v4.0
SDR	System Definition Review
SMT	Senior Management Team
SOM	Supply, Operate and Maintain

Terms	Meaning
TERM	TfNSW Enterprise Risk Management
TfNSW	Transport for New South Wales, the Principal

1 Introduction

Parramatta Light Rail (PLR) is a dual-track, light rail project aimed at meeting the growing public transportation needs in the Greater Parramatta region. Stage 1 of the PLR project includes the construction and operation of a 12 kilometre light rail service from Westmead to Carlingford via Parramatta CBD and Camellia. The PLR Stage 1 alignment is shown in Figure 1.

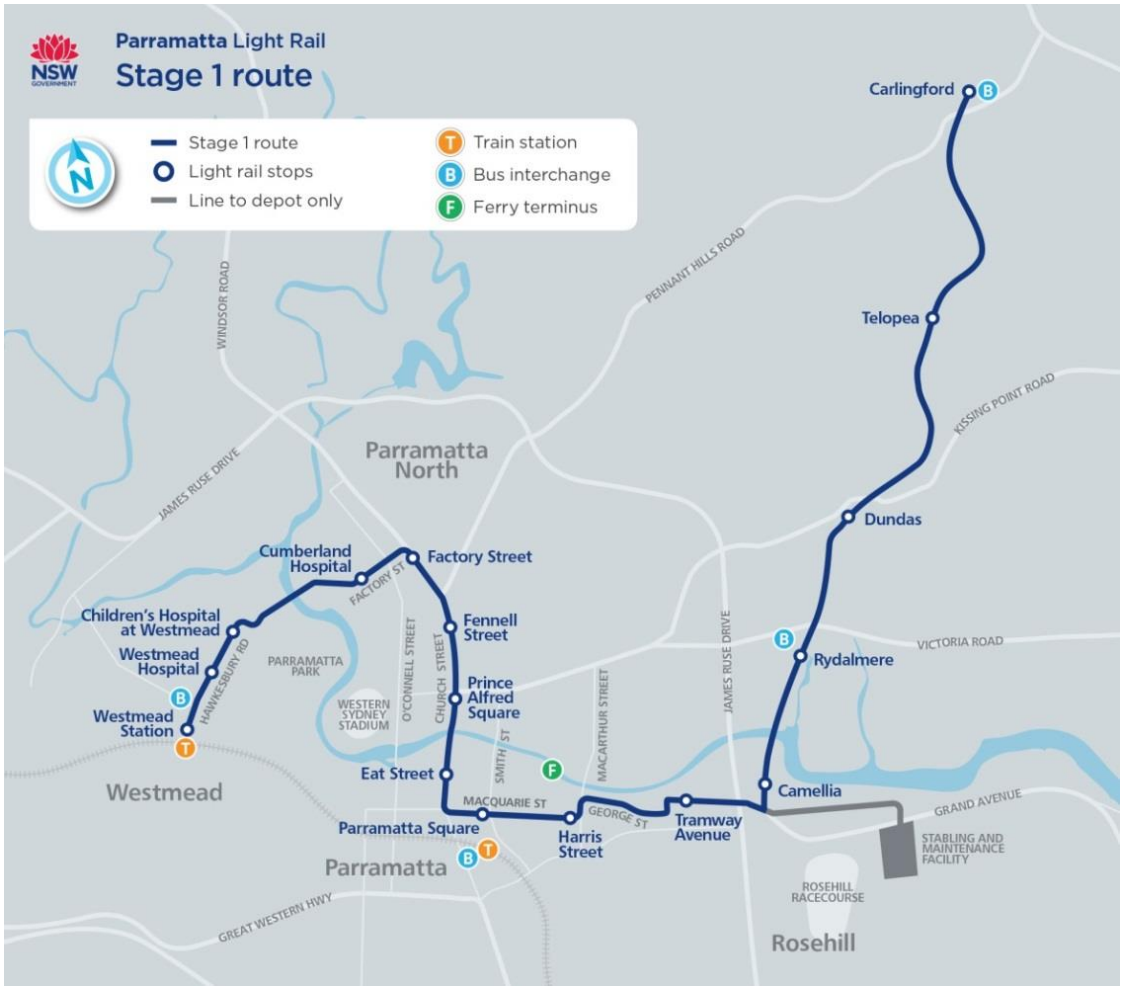


Figure 1: PLR Stage 1 Alignment

As shown in Figure 2, Transport for New South Wales (TfNSW) has divided the delivery for PLR Stage 1 works into seven packages, including the Supply, Operate and Maintain (SOM) Contract.

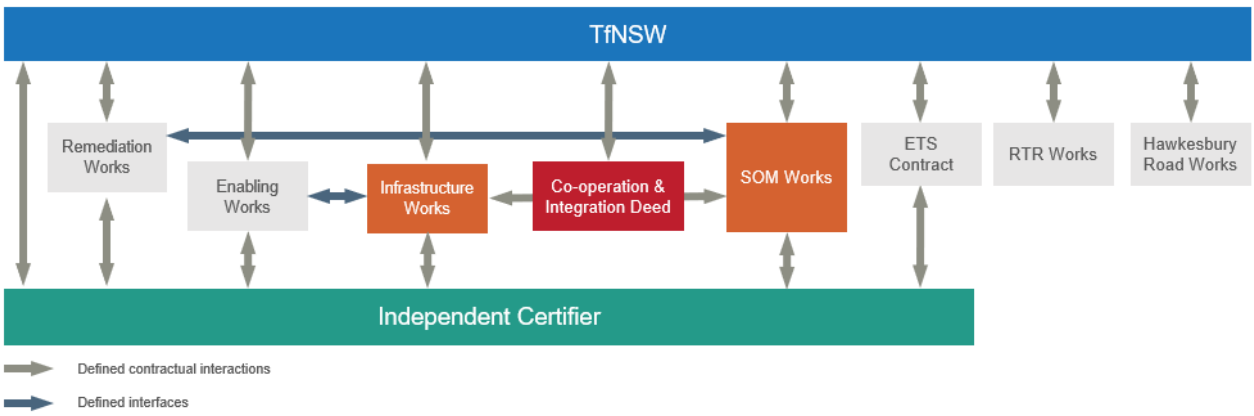


Figure 2: Project Contractual Interfaces

The SOM Contract defines any relevant Rail Transport Agency, RMS (and its contractors), the Infrastructure Contractor, Remediation Contractor, Enabling Works Contractor, RTR Contractor and ETS Contractor as Interface Contractors. As the SOM Contractor, Great River City Light Rail (GRCLR) will proactively coordinate and integrate the SOM Contractor's Activities with those activities carried out by the Infrastructure Contractor and the Interface Contractors.

The SOM Contractor's Activities involve all things or tasks that GRCLR may be required to do (as the SOM Contractor) to comply with our obligations under the Deed. This includes:

- Delivery Activities;
- Light Rail Vehicle (LRV) Procurement Activities;
- Operation and Maintenance (O&M) Activities;
- Anything required under the Co-operation and Integration Deed;
- Anything required under the Contract Independent Certifier Deed; and
- Anything incidental or ancillary to the obligations listed above.

Figure 3 further details these activities. The main obligations and activities required under the Co-operation and Integration Deed and the Contract Independent Certifier Deed are set out in Sections 1.1 and 1.2 below.

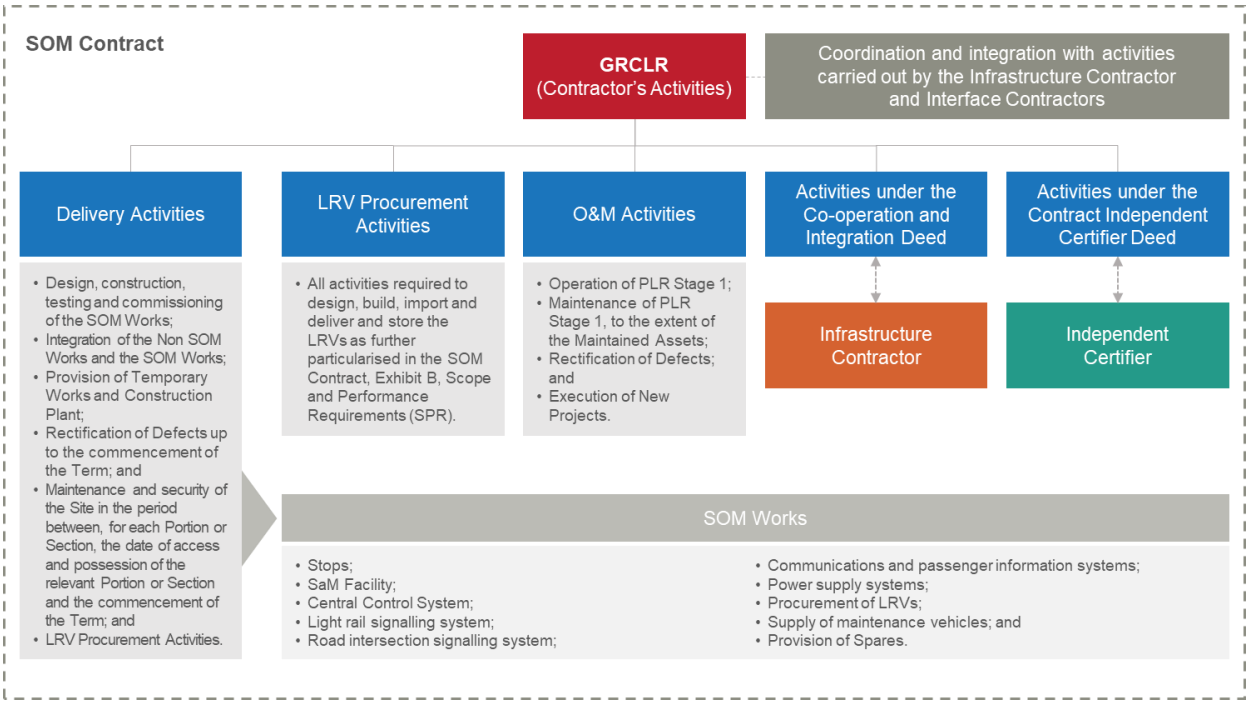


Figure 3: SOM Contractor's Activities for PLR Stage 1

1.1 Co-operation and Integration Deed

The Co-operation and Integration Deed sets out how GRCLR and the Infrastructure Contractor will cooperate with each other and TfNSW in relation to the delivery of PLR Stage 1. For the purposes of the Co-operation and Integration Deed, Primary Deeds means the Infrastructure Contract and the SOM Contract.

1.1.1 Co-operation and Integration

GRCLR acknowledges that the Infrastructure Contractor's Activities interface with the SOM Contractor's Activities. A high level of cooperation, coordination and collaboration must be

achieved to ensure the Infrastructure Works and SOM Works are fully integrated with each other, and to ensure that they each comply with their respective obligations to TfNSW under the Infrastructure Contract and the SOM Contract (as applicable).

We acknowledge that we will be executing work on parts of the Site adjacent to the Interface Contractors, and that failure to cooperate with each other and to properly integrate work may adversely impact on or delay PLR Stage 1.

1.1.2 Design

The Primary Deeds and Management Requirements (as defined in the Infrastructure Deed) specify a process for the development of the Design Documentation that involves GRCLR reviewing and commenting on the Design Documentation prepared by the Infrastructure Contractor, together with participation in design interface meetings.

Under the SOM Contract, at the relevant Design Stage, GRCLR is entitled to specify the SOM Design Criteria in response to Design Documentation (as that term is defined in the Infrastructure Contract) prepared by the Infrastructure Contractor. If GRCLR provides that information to the Infrastructure Contractor within the time specified in Clause 5.9(j) and (k) of the SOM Contract, the Infrastructure Contractor is obliged to comply with the SOM Design Criteria and incorporate into the Infrastructure Works.

This process is detailed in the Systems Engineering, Assurance and Design Management Plan.

1.1.3 Reciprocal Obligations

GRCLR must comply with our reciprocal obligations under Clause 2.13 of each Primary Deed. This includes:

- Working directly with the other Contractor in preparing any asset management information required under their respective contracts;
- Closely cooperating with the other Contractor in relation to community and stakeholder liaison issues; and
- Using best endeavours to resolve any problems, and working closely and iteratively, with the other Contractor and the Principal to achieve a solution to any interface issues.

1.1.4 Meetings

As detailed in the Interface Management Plan, GRCLR will attend and participate in the Project Interface Meetings and the Design, Systems Integration and Assurance Interface Meetings in a frank and cooperative manner.

1.2 Contract Independent Certifier Deed

Schedule 1 of the Contract Independent Certifier Deed sets out the Services that the Independent Certifier (IC) are responsible for providing as part of the Project.

1.2.1 Co-operation and Assistance

Under Section 8 of the Contract Independent Certifier Deed, GRCLR has a responsibility to cooperate with and reasonably assist the IC, and act honestly and fairly to enable the IC to perform the Services.

Subject to any Law or duty of confidentiality, and without limiting any other clause in the Contract Independent Certifier Deed, GRCLR must:

- Provide the IC with any information reasonably necessary to enable them to perform the Services; and
- Provide the IC with any such information within the time required by Contract Independent Certifier Deed or any relevant Contracts.

1.2.2 Information Provided to the IC

GRCLR has a responsibility to ensure that all information provided to the IC is accurate and true.

Where GRCLR is required to comment on Design Documentation, we agree to provide all comments in a format reasonably required by the IC, which as a minimum must contain:

- A unique reference number;
- A description of the Design Documentation; and
- The reasons for the non-compliance.

The author of any such comments (or appropriate personnel) must be made available to meet with the IC to clarify any comments.

1.2.3 Access

GRCLR must:

- Give access to the IC to such places that we control and which may be reasonably necessary to enable the IC to perform the Services; and
- Within a reasonable time of request by the IC, allow the IC access to any records held or systems maintained by us or our subcontractors or sub-consultants in relation to the works to which the Services relate, and which are reasonably necessary to enable the IC to perform the Services.

The IC must (within a reasonable time of any request) give GRCLR access to and copies of any records, reports, advice or other documents received, prepared, or generated by or for the IC in the course of performing the Services. The IC must also comply with the reasonable requirements of GRCLR when accessing any place under our control, including in relation to safety.

1.2.4 Copies of Notices and Documents

Under the Contract Independent Certifier Deed, all notices and documents provided by the IC to one Principal Party must be copied to the Other Party, and notices and documents provided by a Principal Party to the Independent Certifier must be provided by the Independent Certifier to the Other Party. For the purposes of the Contract Independent Certifier Deed, the Principal Party means TfNSW and GRCLR.

2 Scope

2.1 Purpose

This Delivery Phase Sustainability Management Plan (DSMP) describes how GRCLR will comply with the sustainability management requirements of the SOM Contract and the sustainability related Conditions of Approval, Revised Mitigation Measures and Environmental Performance Outcomes during the Delivery Phase of PLR Stage 1, including design and construction.

These sustainability requirements are listed in the Sustainability Requirements Matrix (Appendix B), and detailed in the following Deed documents:

- Exhibit A *(Management Requirements)*, Management Requirements, Section 11 *(Sustainability Management), dated 12 December 2018*;
- Exhibit A *(Management Requirements)*, Annexure 2 *(Project Plan Requirements)*, Section 3.2.3 *(Delivery Phase Sustainability Management Plan), dated 12 December 2018*;
- Exhibit A *(Management Requirements)*, Annexure 13 *(Reporting Requirements)*, Section 3.2.3 *(Delivery Phase Sustainability Management Plan), dated 12 December 2018*;
- Exhibit B (*SPR*), Scope and Performance Requirements, Section 7.12 *(Sustainability Requirements), dated 12 December 2018*;
- Exhibit B (*SPR*), Appendix D *(Sustainability Requirements), dated 12 December 2018*; and
- Exhibit B (*SPR*) Appendix L (*LRV Performance and Data Characteristics*), *dated 12 December 2018;*

In addition, GRCLR is aware of the sustainability-related requirements of the Infrastructure Contract, and will comply/support, as required, including:

- Exhibit B (*SPR*) Appendix N (*Infrastructure SPR*), *dated 12 December 2018; and*
- Exhibit B (*SPR*) Appendix O (*Infrastructure SPR – Sustainability Requirements*), *dated 12 December 2018.*

2.2 Objectives

The objective of this DSMP is to provide the platform and outline the processes to:

- Drive sustainability through the design and construction elements of the SOM Deed;
- Ensure GRCLR meets and exceeds, where practicable, the requirements of the SOM Deed;
- Set the sustainability targets that will achieve sustainability outcomes and assist with Infrastructure Sustainability (IS) rating credit delivery;
- Develop the management processes for the implementation of sustainability targets;
- Integrate sustainability throughout design and construction of the SOM Deed;
- Identify and manage sustainability risk and opportunities;
- Capture the information and outcomes required to deliver the 'Design' and 'As Built' rating score certified by the Infrastructure Sustainability Council Australia (ISCA); and
- Assess, review and communicate sustainability performance and outcomes of initiatives.

2.3 Quality Assurance and Integration of Sustainability Management

This DSMP forms part of GRCLR's Integrated Management System (IMS). It is a quality assurance document prepared in accordance with AS/NZS ISO 9001:2016. The IMS integrates all SOM systems and processes, including sustainability management, required for the execution and delivery of the SOM Contractor's Activities. Further details are included in the Quality Management Plan.

GRCLR's quality and planning process is based on the application of the Plan-Do-Measure-Improve (PDMI) cycle for all aspects of the SOM Contractor's Activities, as shown in Figure 4. The quality and planning process ensures that this DSMP, and sustainability information developed through the IS Rating process, are used as a basis for decision-making and accountability at all relevant levels. It

integrates the process for managing sustainability into the overall governance, strategy and planning, management, reporting processes and culture.

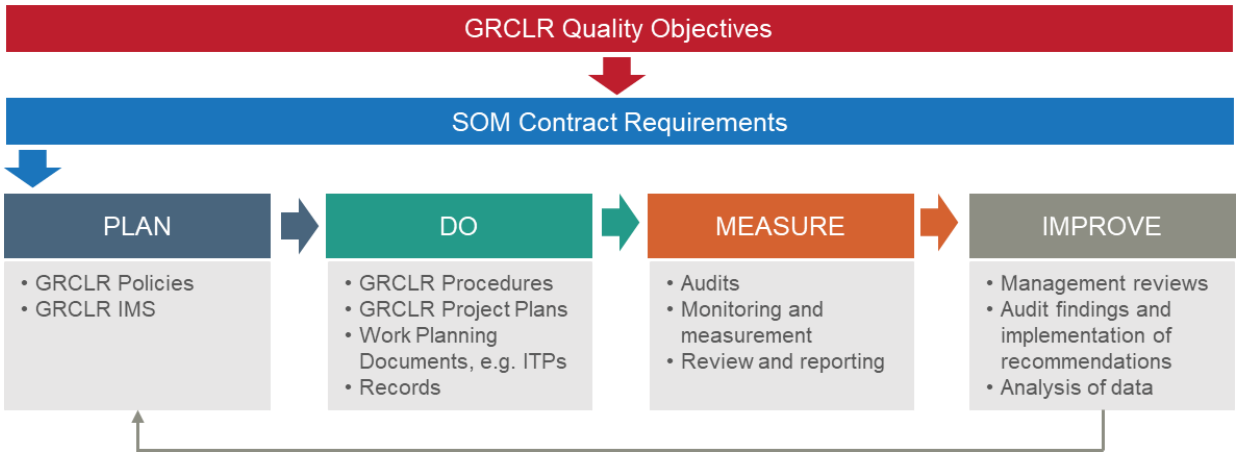


Figure 4: GRCLR Quality Management Approach – PDMI Cycle

2.4 Ongoing Development

The DSMP will be developed, amended and updated in line with the requirements set out in the SOM Contract, Exhibit A, Annexure 2, Section 2(d). The DSMP will be updated annually until the Date of Readiness for First Passenger Service and where reasonably requested or required by the Principal's Representative or any Authority in accordance with Section 2(a). Refer to the Contract Management Plan for further details relating to this process.

A suite of sustainability-related documents (including Sustainability Requirements Matrix, Sustainability Dashboard, Sustainability Opportunities Register and Climate Risk Assessment) are 'live' documents, and will be utilised and updated on a regular basis.

A separate Operations Phase Sustainability Management Plan will be developed prior to the commencement of operations, in accordance with the Deed.

3 Policy Statements

Table 1 identifies the policy statements that relate to the DSMP.

Table 1: Related Policy Statements

Policy statements relating to this Plan	
1	GRCLR Environment and Sustainability Policy
2	GRCLR Risk Policy
3	GRCLR Quality Policy
4	TfNSW Parramatta Light Rail Environment and Sustainability Policy

The GRCLR Environment and Sustainability Policy and TfNSW Parramatta Light Rail Environment and Sustainability Policy are included in Appendix A.

4 Interaction with Other Plans

This DSMP interfaces directly with a number of Project Plans. Table 2 illustrates these interfaces by identifying the Project Plans from which the DSMP receives inputs, and the Project Plans where the outputs from the DSMP contribute to the development and implementation of the plan. This process, and a matrix detailing how the full suite of Project Plans interface, are included in the Contract Management Plan.

Table 2: Cross Reference Table

Sustainability Management Plan	Input from	Output to
General Plans		
Contract Management Plan	●	
Quality Management Plan	●	
Systems Engineering, Assurance and Design Management Plan	●	●
Digital Engineering Execution Plan		
Communication and Engagement Plan	●	●
Safety Management Plan		
Incident Management Plan		
Transport Integration Plan		
Workplace Relations Management Plan		
ICT & Software Systems Management Plan		
Delivery Phase Plans		
Construction Management Plan	●	●
Construction Environmental Management Plan	●	●
Interface Management Plan	●	
Construction Traffic and Transport Management Plan		
Utility Service Management Plan		
Property Management Plan		
Operational Integration Plan		
Operational Readiness Plan		
Testing and Commissioning Plan		●
Delivery Phase Workforce Development Plan	●	●
Operations Phase Plans		
Operations Management Plan		●
Business Continuity Plan		
Operations Environmental Management Plan		●
Operations Phase Sustainability Management Plan		●
Revenue Protection Plan		
Asset Management Plan		●
Annual Works Plan (Maintenance Plan)		●
Transition-Out Management Plan		
Operations Phase Workforce Development Plan		●

5 Reference List

Table 3 lists key legislation, authority approvals, standards, codes, programs, agreements and proposed agreements, drawings and reports that are applicable to the DSMP.

Table 3: Reference List

Reference documents
AS ISO 31000:2018 – Risk Management – Principles and guidelines
ISCA - Infrastructure Sustainability Rating Tool v1.2 - Technical Manual - Design & As Built (and supporting resources)
ISO 20400:2017 - Sustainable procurement - Guidelines
ISO 14025:2006 - Environmental labels and declarations - Type III environmental declarations
Office of Environment and Sustainability - NSW Government Resource Efficiency Policy (2019)
TfNSW - Carbon Estimate and Reporting Tool (CERT) Manual - 7TP-SD-100/2.0
TfNSW - Climate Risk Assessment Guidelines - 9TP-SD-081/3.0
TfNSW - Enterprise Risk Management (TERM) Standard (30-ST-164)
TfNSW - Sustainable Design Guidelines Version 4.0 (and supporting resources)

6 Project Sustainability Requirements

6.1 PLR SOM Contract Requirements – Management / Project Plan Requirements

Table 4 identifies where the DSMP addresses the Project Plan requirements in the SOM Contract, Exhibit A (*Management Requirements*), Annexure 2 (*Project Plan Requirements*). The full list of sustainability-related requirements from the SOM Deed and the Conditions of Approval, Revised Mitigation Measures and Environmental Performance Outcomes is included in the Sustainability Requirements Matrix (Appendix B).

Table 4: Compliance Table (Project Plan Requirements)

Project Plan Requirements	Cross reference to where this Plan meets those requirements	Cross reference to associated reference documents
(a) The Contractor must develop, maintain and implement a Delivery Phase Sustainability Management Plan which identifies how Contractor will comply with the sustainability requirements of the Deed.	This Plan	
(b) The Delivery Phase Sustainability Management Plan must, as a minimum, address and detail:	-	

Project Plan Requirements	Cross reference to where this Plan meets those requirements	Cross reference to associated reference documents
(i) the sustainability management team structure, including key personnel authority and roles of key personnel, lines of responsibility and communication, minimum skill levels of each role and interfaces with the overall project organisation structure;	Sections 7.1 and 7.2	
(ii) how the Contractor will interface and integrate with the Infrastructure Contractor and Interface Contractors for sustainability in alignment with the Interface Management Plan;	Section 7.4	Interface Management Plan
(iii) a sustainability policy statement and strategies for adaptation to climate change, resource management (including energy, water and waste), social sustainability and sustainable procurement;	Section 3 and Appendix A	
(iv) how the Contractor will achieve the IS Rating Scheme requirements described in the Management Requirements;	Section 9 and this Plan	
(v) the sustainability awareness programs that the Contractor will develop and maintain continual improvement for sustainable behaviour across the Contractor's workforce (including subcontractors);	Sections 7.3 and 12.4	
(vi) demonstrate how the Contractor will provide training to High Impact Suppliers as described in the ISCA rating tool;	Section 12.4	
(vii) the process for identifying and procuring suitable products with low life cycle environmental and social impacts under in the section of the plan that describes sustainable procurement management;	Sections 12 and 13	
(viii) describe the process for identifying and procuring suitable products with low life cycle environmental and social impacts in the Delivery Phase Sustainability Management Plan;	Sections 12 and 13	

Project Plan Requirements	Cross reference to where this Plan meets those requirements	Cross reference to associated reference documents
(ix) sustainability initiatives to be implemented during the performance of Contractor's Activities to meet the requirements and sustainability targets in the SPR;	This Plan Appendices B – D	
(x) how sustainability requirements and opportunities will be identified and addressed during construction activities;	Section 11	
(xi) the processes and activities for tracking the identification and implementation of sustainability initiatives;	Section 8 Appendices B – D	
(xii) the processes and methodologies for embedding sustainability initiatives into the Contractor's Activities;	Sections 7.3 and 8	
(xiii) the processes and methodologies for assurance, monitoring, auditing, corrective action, continuous improvement and reporting on sustainability performance;	Section 17	Quality Management Plan Audit Schedule
(xiv) the processes and procedures for undertaking climate change risk assessments, including nominating gateways requiring a climate change risk review, and the identification and implementation of climate change adaptation measures;	Section 13 Appendix E	
(xv) an outline of the systems that will be used to support sustainability management and their alignment with ISO14001:2015;	Section 8	
(xvi) an environmental performance declaration for LRVs in accordance with ISO14025:2006; and	Section 13	
(xvii) interfaces with other Project Plans.	Table 2 and this table	Contract Management Plan
(c) The Delivery Phase Sustainability Management Plan must also include the following separate sections covering:	-	
(i) climate change risk assessment and adaptation;	Section 13 Appendix D	
(ii) energy and carbon management; and	Section 16	

Project Plan Requirements	Cross reference to where this Plan meets those requirements	Cross reference to associated reference documents
(iii) infrastructure sustainability rating management.	Section 9	
(d) The climate change risk assessment and adaptation section of the Delivery Phase Sustainability Management Plan must address and detail:	-	
(i) project specific climate change related risks;	Section 13 Appendix E	
(ii) adaptation actions to be implemented to mitigate extreme and high level change risks and manage medium level climate change risks on the project;	Section 13 Appendix E	
(iii) the methodology used (including modelling and risk assessment), in accordance with the guidance and requirements *TfNSW Climate Risk Assessment Guidelines 2016* and the *Infrastructure Sustainability Council of Australia IS Rating Tool Technical Manual v 1.2* - climate change category;	Section 13 Appendix E	
(iv) the review and update process of the Climate Change Risk Assessment and Adaptation Plan; and	Section 13 Appendix E	
(v) the integration with the Contractor's RMIS	Section 13 Appendix E	Risk Management Plan
(e) The energy and carbon management section of the Delivery Phase Sustainability Management Plan must address and detail:	-	
(i) an "Energy and Carbon Inventory" covering at least Scope 1 Emissions, Scope Emissions 2 and land clearing across the infrastructure lifecycle in accordance with the requirements of TfNSW's Carbon Estimate and Reporting Tool (CERT). It must include both permanent SOM Works and Temporary Works;	Section 16	

Project Plan Requirements	Cross reference to where this Plan meets those requirements	Cross reference to associated reference documents
(ii) a carbon emission estimate determined using a carbon footprint assessment undertaken in accordance with ISO14064. The footprint must incorporate direct and indirect emissions associated with electricity and fuel consumption, on-site process emissions and embodied emissions for all concrete and steel used in delivery and operational activities. The carbon foot printing model to be used must be described;	Section 16	
(iii) a description of the overall approach to the identification of opportunities to reduce carbon emissions, energy use and embodied lifecycle impacts of the Contractor's Activities;	Section 16	
(iv) low carbon strategies and initiatives that will be implemented to minimise the carbon emissions associated with the Delivery Activities; and	Section 16	
(v) energy efficiency strategies and initiatives that will be implemented to minimise overall energy consumption.	Section 16	
(f) the infrastructure sustainability rating management section of the Delivery Phase Sustainability Management Plan must be developed in consultation with and to the standard required by the Infrastructure Sustainability Council of Australia.	Section 9	Communication and Engagement Plan

6.2 Sustainability Objectives and Targets

Table 5 identifies Sustainability Objectives and Targets defined in the SOM Contract, Exhibit B – Sustainability.

Table 5: Sustainability Objectives and Targets

Relevant Target	Objective	Minimum Target (SOM Deed)	Aspirational Target
Sustainability Rating	IS Design, As-built and Operations Rating	70/110	80+/110
Climate Change	Identify all necessary adaption measures that comprehensively address climate change risks during asset life in accordance with ISO31000.	Implement Measures to mitigate all climate change risks classified as “Extreme” and “High” and a minimum of 25% of risks classified as medium “Medium”	-
Emissions Reduction	Reductions in greenhouse gas emissions compared to a base case footprint, including scope 1, scope 2 and land clearing emissions	15% Reduction in Greenhouse Gas emissions during construction, AND Offset a minimum of 25% of total electricity use during construction	>15%
Water Reduction	Reduction in total water use compared to a base case footprint	15% Water Reduction	>15%
Water Substitution	Water use from non-potable sources, from reclaimed or recycled waste water or harvested water	50% replacement of potable water	>50%
Environmental Labelling	Material or products have an ISCA approved environmental label	3-9% Environmentally Labelled Products	9%
Material Lifecycle Impact Measurement and Reduction	Monitoring and modelling of materials lifecycle impacts is undertaken using the Materials Calculator and a reduction is demonstrated compared to a base case footprint across the infrastructure lifecycle.	15% Reduction in life cycle impacts	>15%

Relevant Target	Objective	Minimum Target (SOM Deed)	Aspirational Target
Quantity of Waste to be Recycled	Percentage of spoil waste diverted from landfill for recycling or reuse	100%	-
	Percentage of inert or non-hazardous waste diverted from landfill for recycling or reuse	90%	>90%
	Percentage of paper and cardboard / co-mingled office waste diverted from landfill for recycling or reuse	60%	>60%
Procurement	IS v1.2 Credit Pro-1	Level 2	Level 3
	IS v1.2 Credit Pro-2	Level 3	Level 3
	IS v1.2 Credit Pro-3	Level 3	Level 3
	IS v1.2 Credit Pro-4	Level 2	Level 3

7 Organisation Structure, Responsibilities, Culture and Collaboration

7.1 Organisation Structure

GRCLR's Organisation Structure for the Delivery Phase is shown in Figure 5. The Senior Management Team (SMT) are shown in the blue boxes (including the Project Director). The Environment & Sustainability Manager is indicated by the green dashed box.

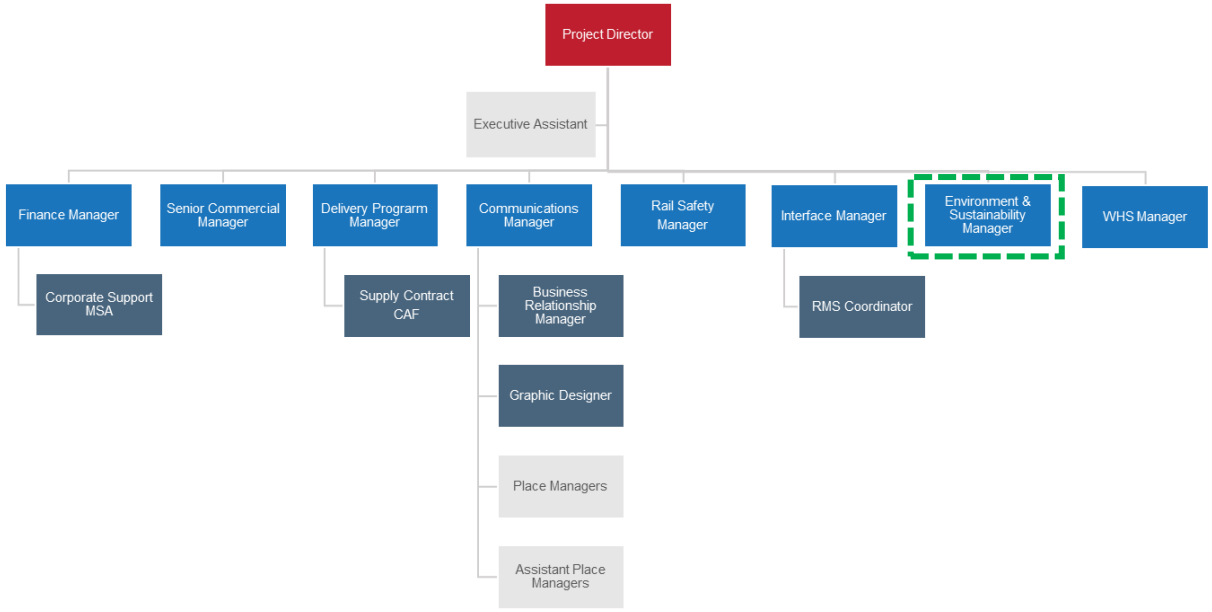


Figure 5: GRCLR Delivery Phase Organisation Structure

7.2 Roles and Responsibilities

The entire GRCLR Project Team has responsibilities in relation to sustainability. In summary:

- GRCLR's Project Director is accountable for the sustainability outcomes across the SOM Contract. The Project Director also provides the leadership and sets the sustainability culture and expectations for the Contract.
- GRCLR's SMT is responsible to ensure that sustainability expectations are set across their teams and functions, and that adequate resources are allocated to ensure requirements can be met.
- GRCLR's Environment and Sustainability Manager is responsible for managing the development and implementation of the strategies, plans, initiatives and tasks to realise the sustainability requirements across the Contract. The Environment and Sustainability Manager sits on the SMT and influences key strategic decisions.
- The entire GRCLR Project Team (including sub-contractors) is empowered to identify sustainability opportunities and risks across the SOM Contract.

Key sustainability management related responsibilities and skills for key roles are presented in Table 5. Further details are included in the Contract Management Plan.

Table 5: GRCLR Roles and Key Responsibilities Related to Sustainability Management

Role	Key Responsibilities	Qualifications or equivalent experience
Project Director/ General Manager	▪ Ensure adequate resources, both human and systems are in place to achieve sustainability requirements; ▪ Provide sustainability leadership and ensures that sustainability is driven across the business; ▪ Authorise expenditure of Project resources for sustainability initiatives; and ▪ Maintain oversight of the DSMP and propose amendments as required.	▪ +15 years' experience in commercial management on projects similar to PLR Stage 1; ▪ Hold a recognised qualification relevant to the position and the Contractor's Activities; and ▪ Hold professional accreditations in commercial and/or business management.
Sustainability Manager	▪ Be responsible for and have the authority to develop and implement the sustainability requirements in accordance with the requirements of the Deed and the DSMP; ▪ Provide strategic direction; ▪ Interface with TfNSW, ISCA, Infrastructure Contractor, GRCLR SMT; ▪ Provide oversight / guidance of ISCA process; ▪ Provide oversight and review of reporting;	▪ Possess a recognised qualification relevant to sustainability management and have recent relevant experience in sustainability management on projects similar to the SOM Works; ▪ Have at least 5 years' sustainability management experience in similar roles such as management of sustainability in design, construction and operation of infrastructure; and ▪ Be an IS Accredited Professional.
Sustainability Officer/s	▪ Support the embedding of sustainability requirements through design & construction; ▪ Support collection of evidence for each ISCA credit; ▪ Facilitate inputs to and maintenance of relevant live documents (e.g. Sustainability Opportunities Register, Sustainability Requirements Register, ISCA Tracker and Sustainability Dashboard); and	▪ Relevant experience and qualifications; and ▪ Have IS experience and be an IS Accredited Professional (preferred). NOTE: this role will be fulfilled by multiple people across the GRCLR team, including CAF's Environment & Sustainability / Health & Safety Lead,

Role	Key Responsibilities	Qualifications or equivalent experience
	▪ Provide inputs to monthly and annual reporting.	Laing O'Rourke's Sustainability Advisor and WSP's Sustainability Advisor
SMT (within their areas of responsibility)	▪ Endorse and advocate the sustainability management process throughout the organisation in relation to all SOM Contractor's Activities; and ▪ Ensure appropriate processes and systems are in place to realise sustainability requirements.	▪ +15 years' experience in relevant discipline on projects similar to PLR Stage 1; and ▪ Hold a recognised qualification relevant to the position and the Contractor's Activities.
Discipline Leads	▪ Ensure sustainability requirements related to their discipline are understood and realised; and ▪ Review sustainability opportunities, and provide guidance on whether to accept or dismiss or seek additional information.	▪ Relevant experience and qualifications.
Other Project personnel, including subcontractors	▪ Realise sustainability requirements related to their scope and responsibilities; and ▪ Identify sustainability opportunities.	▪ Relevant experience and qualifications.

7.3 Creating a Positive Sustainability Culture

GRCLR will instil a positive sustainability culture by embedding sustainability management at all levels of the organisation. Key mechanisms that will assist with this process include:

- Sustainability training and awareness to GRCLR staff, contractors and suppliers, commencing with inductions;
- GRCLR Sustainability Working Group (meeting fortnightly during early design);
- Sustainability updates at relevant project meetings;
- Tools and processes to embed sustainability through design and construction, as outlined in Sections 0 and 11; and
- Reporting on sustainability outcomes, risks and opportunities in line with the monthly and annual reporting requirements, as outlined in Section 17.

7.4 External Collaboration

In addition to the internal collaboration described above, GRCLR will collaborate with key external stakeholders, including TfNSW, ISCA, Infrastructure Contractor and other Interface Contractors in alignment with the Deed, the IS Rating Agreement, the Contract Management Plan, the Communication and Engagement Plan and the Interface Management Plan.

The ISCA Tracker (Appendix C), in conjunction with the ISCA Technical Manual v1.2, provides a means of identifying and tracking the sustainability-related stakeholder participation and engagement activities, and the means to achieve the target scores for Sta-1 to Sta-4.

During early design, meetings will be held on a fortnightly basis with TfNSW, and on an ad hoc basis with the Infrastructure Contractor and other Interface Contractors.

8 Sustainability Requirements

8.1 Overview

The sustainability requirements in the SOM Deed incorporate:

- Principles of the TfNSW PLR Stage 1 Sustainability Strategy;
- ISCA Design & As-Built v1.2 guidance and requirements; and
- A suite of TfNSW tools, guidelines and requirements, including Sustainable Design Guidelines v4.0 (SDG), Carbon and Energy Reporting Tool (CERT), Climate Risk Assessment (CRA) Guidelines and TfNSW Enterprise Risk Management (TERM) Standard, among others.

There are overlaps and linkages between these elements, as shown in Figure 6. For example, a number of TfNSW tools and guidelines align with and support the requirements of various ISCA credits.

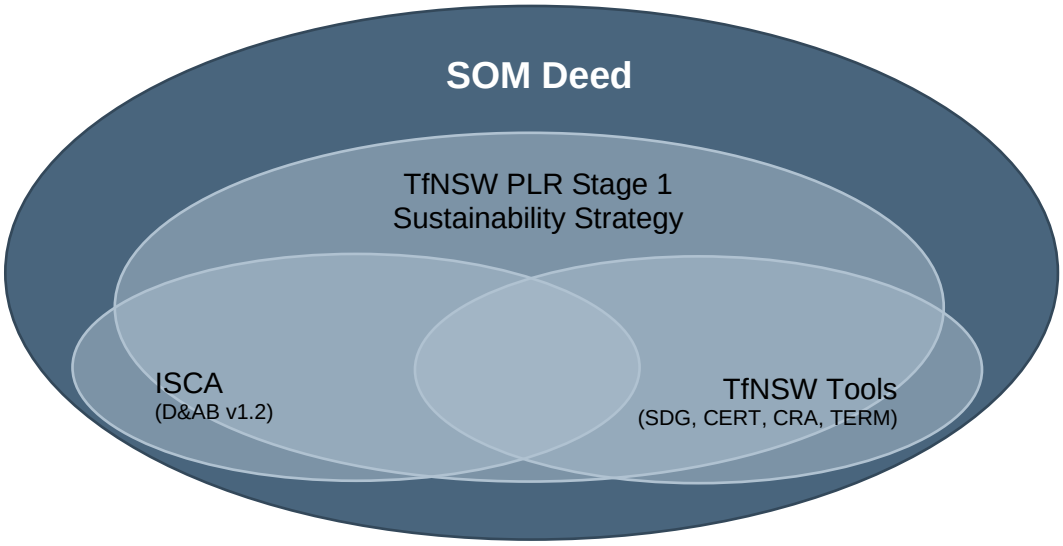


Figure 6: Linkages between sustainability requirements in SOM Deed and supporting documents and resources

8.2 Governance and Technical Requirements

Broadly speaking, there are three main types of sustainability requirement:

- Governance / contract-wide requirements;
- Technical – prescriptive requirements; and
- Technical – non-prescriptive requirements.

Table 6 shows a description, examples and associated actions for each type of sustainability requirement.

Table 6: Types of Sustainability Requirements

Type	Description	Examples	Actions
Governance (contract-wide)	Deed and ISCA requirements which apply across the entire contract and/or are addressed by governance systems and structures	"Ensure that sustainability is embedded into the Design and delivery of the Contract" [Exhibit A, MR, 11(e)(ii)] "Use the ISCA IS Rating Scheme version 1.2 to achieve the minimum ratings specified for design, as-built and O&M Activities." [Exhibit B (SPR), App D 1.1(d)]	▪ Establish the governance systems and structures required to meet requirements; and ▪ Track progress and compliance through the Sustainability Requirements Matrix (refer to Appendix B).
Technical – prescriptive	Deed and ISCA requirements are clearly defined parameters, and/or can be fulfilled by a single design or construction activity	"Use asphalt and reclaimed asphalt pavement with a minimum recycled substitutions rate of 25% for asphalt and 100% for subbase" [Exhibit B (SPR), App D 1.3(a)(ix)] "Ensure all surface coatings comply with the Australian Paint Approval Scheme (APAS) Volatile Organise Compounds Limits" [Exhibit B (SPR), App D 1.4(a)(ii)] "Irrigate the SaM Facility landscape using 100% recycled or rain water" [Exhibit B (SPR), App D 1.6(a)(xi)]	▪ Assign each requirement to specific design and construction packages; ▪ Include requirements in basis of design, and through construction planning and execution; and ▪ Track progress and compliance through the Sustainability Requirements Matrix (refer to Appendix B).
Technical – non-prescriptive	Deed and ISCA requirements are not prescriptive, and/or cannot be fulfilled by a single design or construction activity	".. greenhouse gas emissions reduction of 15% below a base case footprint" [Exhibit B (SPR), App D 1.6(a)(v)] "Maximise the use of regenerative braking energy to the extent practicable" [Exhibit B (SPR), App D 1.6(a)(xvi)] ".. reduction in water use of 15% compared to a base case footprint" [Exhibit B (SPR), App D 1.7(a)(i)]	▪ Assign each requirement to specific design and construction packages; ▪ Include requirements in basis of design, and through construction planning and execution, however, additional support required (e.g. Sustainability in Design training; innovation workshops; opportunity register); ▪ Identify and assess opportunities to meet requirements; and ▪ Track progress and compliance through the Sustainability Requirements Matrix (refer to Appendix B).

8.3 Process

The process to ensure sustainability requirements are met across the delivery phase of the SOM Contract is demonstrated in Figure 7. These activities are captured and tracked in the Sustainability Requirements Matrix, a dynamic document which will be regularly reviewed and updated. An example of the Matrix is included in Appendix B.

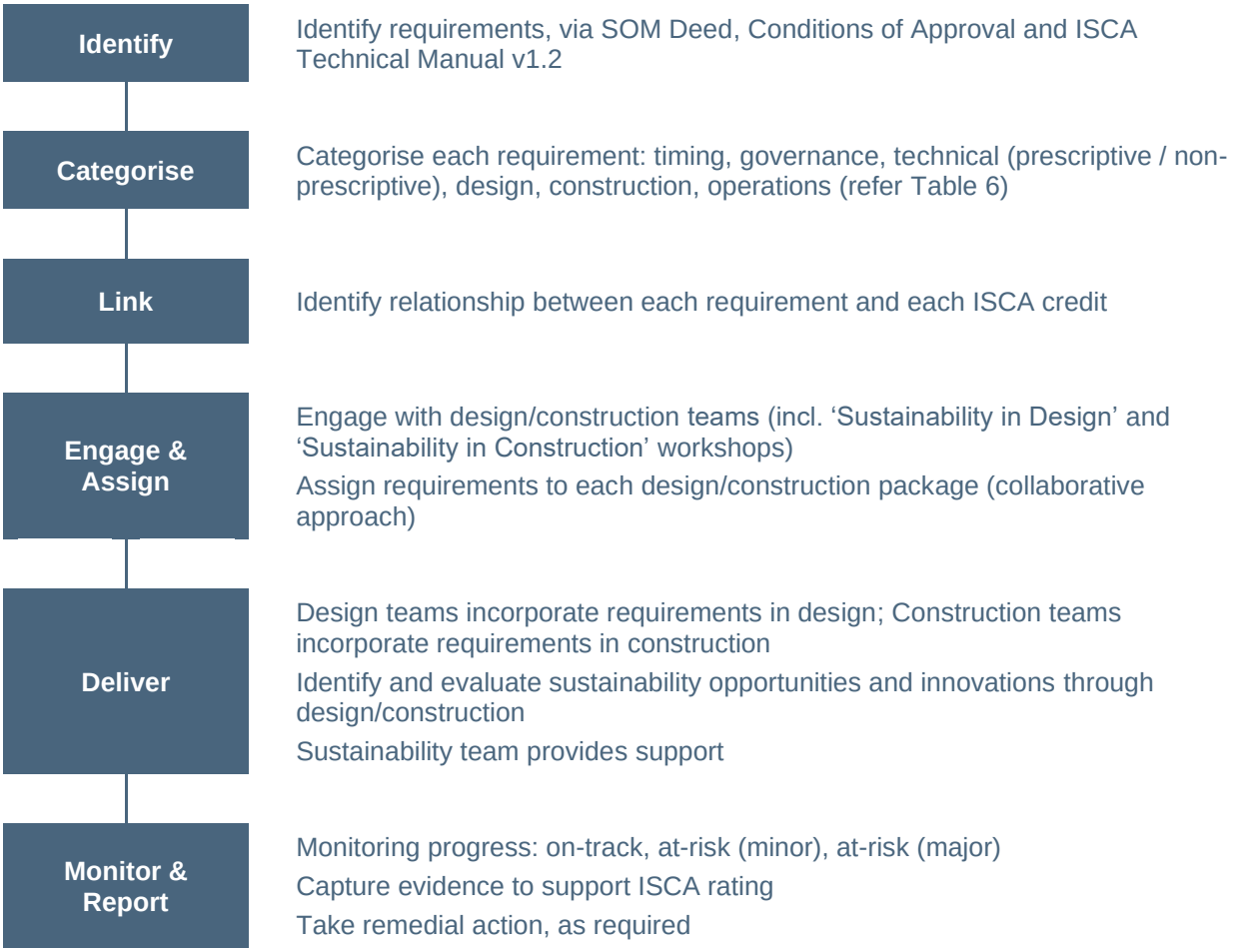


Figure 7: Process to ensure sustainability requirements are met

8.4 Decision Making

Throughout the design and construction process critical decisions will be made and design changes implemented that will impact the sustainability outcome of the project. Implementing a well-developed decision-making framework is essential in ensuring designers consider the environmental, social and economic impacts of a change prior to implementation.

GRCLR has employed multi-criteria analysis to assess key decisions and design methodology changes. The multi criteria analysis is based on the following four categories:

- economic – covering capital, operational, program and indirect costs
- environmental – covering energy, water, materials, emissions, indoor environment and waste
- social – covering community outcomes, perception, social benefits and priority job seekers
- technical – covering design, performance, constructability, reliability and operation.

During the detailed design phase, key actions will be further identified, assessed and implemented:

- sustainability as an agenda item in all coordination meetings
- including sustainability targets and obligations in all relevant management plans to raise awareness
- inclusion of the sustainability team in design review process
- inclusion of sustainability in all relevant design packages
- ready access for the design team to the project specific multi-criteria analysis tool

A decision making framework outlining the GRCLR decision making process has been developed and included as Appendix H.

9 Infrastructure Sustainability (IS) Rating Management

9.1 Overview

The IS Rating Scheme is developed and administered by ISCA as a tool to evaluate sustainability across design, construction and operation of infrastructure. It aims to:

- Provide a common national language for sustainability in infrastructure;
- Provide a vehicle for consistent application and evaluation of sustainability in tendering processes;
- Help in scoping whole-of-life sustainability risks for projects and assets, enabling smarter solutions that reduce risks and costs;
- Foster resource efficiency and waste reduction, reducing costs;
- Foster innovation and continuous improvement in the sustainability outcomes from infrastructure; and
- Build an organisation's credentials and reputation in its approach to sustainability in infrastructure.

The IS Scheme is comprised of the IS Rating Tool, rating process, and ISCA education and training programs (including the IS Accredited Professional program).

9.2 Scope of IS Scheme

The themes and categories covered under the IS scheme are shown in Table 7.

Table 7: ISCA v1.2 Overview (ISCA, 2018)

Theme	Category	Description
Management and governance	Management Systems	Management systems aim to ensure consistent and efficient activities within an organisation, project or asset management.
	Procurement and Purchasing	Goods and services should be procured in a manner that optimises economic, social and environmental outcomes.
	Climate Change Adaptation	Infrastructure needs to be designed, constructed and operated to cope with projected hotter, drier and stormier climatic conditions, with higher sea levels.

Theme	Category	Description
Using resources	Energy and Carbon	Energy and carbon monitoring and reduction, and the use of renewable energy.
	Water	Conserving water, and managing runoff and wastewater to prevent pollution.
	Materials	Ensuring that materials such as aggregates, concrete, steel, oil and wood are responsibly sourced, and used efficiently.
Emissions, pollution and waste	Discharges to Air, Land and Water	Concerned with pollution to waterways, noise and vibration, air pollution, and light pollution.
	Land	Ensuring that the land used is not of high environmental or social value.
	Waste	Construction should avoid the generation of waste, manage waste as a resource, and ensure that waste treatment, disposal, recovery and re-use is undertaken in a sound manner.
Ecology	Ecology	Considers local ecosystems (soil, water, air, biomass and wildlife).
People and place	Community Health, Well-being and Safety	This relates to the concept of livability, and that community well-being is considered in the construction of infrastructure.
	Heritage	This encompasses the conservation of indigenous, historic and natural heritage in a local area.
	Stakeholder Participation	Refers to the processes and mechanisms that enable stakeholders who have a direct or indirect interest in infrastructure development to be part of decision making.
	Urban and Landscape Design	Concerned with the arrangement, appearance and function of infrastructure within an area.
Innovation	Innovation	Innovation is the creation of more effective infrastructure, processes, services, technologies or ideas.

Source : https://www.isca.org.au/isv_12_overview

9.3 IS Rating Process

The key stages of the IS Rating process are shown in Figure 8.

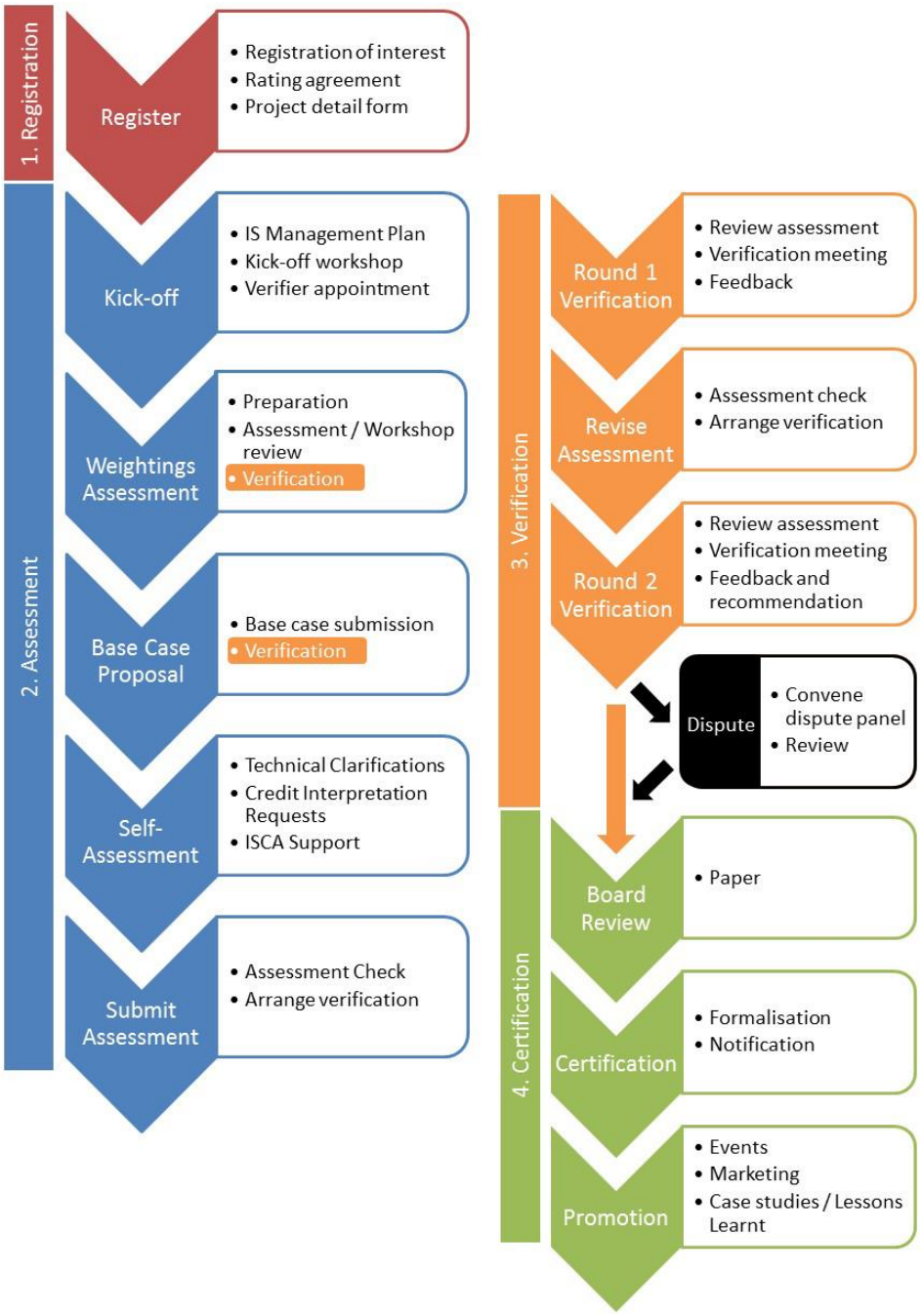


Figure 8: IS Rating Process (ISCA, 2018)

9.4 ISCA Resources

Table 8 outlines the ISCA resources that will be utilised through the execution of the Deed.

Table 8: ISCA resources

Resource	Description	Application
IS Technical Manual Version 1.2	Describes the aims, benchmark criteria, evidence criteria and additional guidance for each credit	Specifications for obtaining an IS rating.
IS Design Review Guide	Guidance to support the Technical Manual	Applied when completing Urb-1 in the Urban and Landscape Design category.
IS Materials Calculator	A calculator that evaluates environmental impacts associated with the use of materials	For use with Mat-1 in the Materials category.
IS Rating Tool Scorecard	Excel spreadsheet tool that facilitates self-assessment during the rating / scoring process	Calculation of IS score.
AGIC Climate Change Adaptation Guideline	Information on climate change risks and opportunities, and guidance to industry on developing adaptation measures	Supports the assessment of credits in the Climate Change Adaptation category.
Ecological Value Calculator	Part of the Green Star – Design and As Built rating tool (not developed by ISCA), this calculates total change in ecological value after construction compared to before	For use with Eco-1 in the Ecology category.

This DSMP has been developed in alignment with the Deed requirements and the IS Management Plan template developed by ISCA (Appendix F). Informal consultation with ISCA has informed the development of the DSMP.

9.5 Approach to meet ISCA score >70

GRCLR is required to achieve at least a certified ‘Excellent’ Design and As-Built rating with a minimum score of 70 under ISCA v1.2. GRCLR is also required to target an ISCA IS ‘Leading’ rating (i.e. IS score greater than 75).

The pathway to the minimum and target scores has been mapped, using the ISCA Tracker (Appendix C). A target level for each credit has been determined, based on the Deed requirements, project objectives and previous experience. Each level within each credit is assessed to determine the ‘degree of confidence’ (high-medium-low) of meeting the requirements of that level. This provides an overall understanding of the confidence of attaining the required scores, or rather, highlights the risk areas which require further attention. The ISCA Tracker is a ‘live’ document which will be updated regularly and reviewed at least monthly. The confidence level should be conservatively assessed (i.e. erring on the side of underestimating the confidence level rather than being over-confident). This then serves as a motivator for the broader project team to improve performance and realise the minimum / target score.

10 Sustainability in Design

10.1 Design Process Overview

The design will be undertaken in defined stages which allows the design to be progressively developed, refined, reviewed and endorsed by the project team, the Configuration Control Board and the Principal. In this way, GRCLR can ensure the proposed solutions fulfil all project requirements, including functionality, construction cost, coordination, interfaces, integration, construction methodology, commissioning and operability, as well as environmental and sustainability requirements.

The design will be finalised with the issue of approved for construction/issued for construction documentation.

The key design stages are shown in Figure 9, and outlined below. The design process is detailed in the Systems Engineering, Assurance and Design Management Plan (SEADMP). The SEADMP (Section 4.8.2) also notes that this DSMP (including the Sustainability Requirements Matrix) forms part of the design requirements, in addition to specific reference that the design will take into account climate change risks.

Design leads will ensure that the sustainability section in each design package includes tangible detail on sustainable design decisions, opportunities, initiatives and outcomes which have been considered and implemented for the design package. This is in addition to contract-wide sustainability progress which will be captured in the sustainability design package / report at SDR, PDR and DDR. Section 4 of the SEADMP notes the requirement

Figure 9: Key Stages in Design Process

10.2 Design Planning

The objective of design planning is to map out the strategies, tools, resources, methods, deliverables, and personnel that will be used to successfully complete the design development, including requirements from a sustainability perspective.

10.3 Design Initiation

The objective of design initiation is to ensure that:

- The head contract obligations are communicated and understood by design team members;
- The plan for design production is communicated and understood by the project team;
- The information on which the design will be based is understood by the team; and
- The requirement for interdisciplinary reviews to be held for each package is understood.

From a sustainability perspective, the Design Initiation stage involved an introductory ‘Sustainability in Design’ presentation to the core design team to communicate the requirements

and opportunities around design and procurement. A high-level matrix of sustainability requirements was developed and circulated to senior members of the project team, allocating responsibilities to various parties in GRCLR and summarising key activities required during the design process to achieve the targeted IS ratings for each category.

10.4 System Definition Review (SDR)

The objective of the SDR is to demonstrate that the system and interface specifications are complete, unambiguous and consistent with the requirements of the Contract, that the design outputs, strategy, and choices taken in earlier design stages are valid, and that the solution provides a best for project outcome. The design works are also progressed to enable procurement and construction planning to proceed and/or continue.

The SDR represents a very early stage of the design process (~30% design). The majority of the sustainability requirements will be developed and incorporated during the subsequent PDR and DDR phases.

Key sustainability-related activities undertaken during SDR include:

- 'Sustainability in Design' workshops with design discipline leads;
- Formation of the SOM Contract Sustainability Working Group (consisting of GRCLR, CAF, Laing O'Rourke and WSP), to align on delivery of sustainability requirements, share information, and identify collaboration opportunities;
- Liaison with Environment & Sustainability Manager with PLR Infrastructure Contractor to identify collaboration and information sharing opportunities;
- Development of the Sustainability Requirements Matrix (Appendix B);
- Development of the Sustainability Opportunities Register (Appendix D);
- Development of the Sustainability Dashboard, to capture progress against key sustainability requirements;
- Progress on the CRA, including Climate Risk Assessment Report (refer to Section 13); and
- Preliminary specialist studies related to key design decisions, including Energy Efficiency and Renewable Energy and Water Footprint for the SaM Facility.

Further details of the sustainability activities undertaken during the SDR stage are presented in the SDR Sustainability Design Package Report (Package 15).

10.5 Preliminary Design Review (PDR)

The objective of the PDR is to demonstrate that the integrated design for PLR Stage 1 will meet systems, legal, stakeholder and authority requirements.

Key sustainability-related activities to be undertaken during PDR include:

- Ensure sustainability requirements are allocated to design packages/disciplines (refer to Section 8 and Appendix B):
  - Prescriptive requirements included in design specifications; and
  - Plan developed to ensure non-prescriptive requirements are managed and realised;
- Review and update Sustainability Requirements Matrix (Appendix B), and ensure sustainability requirements are included in and tracked through the GRCLR Requirements Verification and Traceability Matrix (RVTM);

- Undertake CRA workshop, develop CRA Report and ensure risks are mitigated through design, where practicable (refer to Section 13 and Appendix E);
- Develop base case calculations for energy/carbon, water and materials, and commence data collection (refer to Section 16);
- Produce estimates of operational electricity consumption;
- Further develop the photovoltaic study and the water study for the SaM Facility;
- Identify sustainability opportunities in the Sustainability Opportunities Register (Appendix D), and evaluate opportunities for inclusion in design;
- Collect evidence for ISCA credits; and
- Update ISCA Tracker and scorecard (Appendix C).

Details of these sustainability activities, progress and outcomes will be included in the relevant PDR design package reports.

10.6 Detailed Design Review (DDR)

The objective of the DDR is to ensure that the detailed design fully adheres to the engineering specification, and the requirements of the Contract. The Contractor must submit review design documentation of sufficient detail to ensure that the design that complies with the requirements of the SPR in Exhibit B of the SOM Deed, and can be constructed, manufactured and delivered.

Key sustainability-related activities to be undertaken during DDR include:

- Ensure sustainability requirements have been met in relevant design packages/disciplines (refer to Section 8 and Appendix B);
- Review and update Sustainability Requirements Matrix (Appendix B) and ensure sustainability requirements are tracked,
- Review and update CRA Report (including CRA workshop), and ensure risks have been mitigated through design, where practicable (refer to Section 13 and Appendix E);
- Produce estimates of operational electricity and water consumption;
- Demonstrate the required reductions in energy/carbon, water and materials against the base case;
- Identify sustainability opportunities in the Sustainability Opportunities Register (Appendix D), evaluate opportunities for inclusion in design, and confirm all design related opportunities have been closed out (accepted or dismissed);
- Collect evidence for ISCA credits; and
- Update ISCA Tracker and scorecard (Appendix C).

Details of these sustainability activities, progress and outcomes will be included in the relevant DDR design package reports.

11 Sustainability in Construction

Key sustainability-related activities to be undertaken during construction include:

- Ensure sustainability expectations and philosophy is included in site inductions;
- Ensure sustainability requirements are allocated to construction packages (refer to Section 8 and Appendix B):
  - prescriptive requirements included in work method statements and Job Safety and Environmental Analyses (JSEAs);
  - plan developed to ensure non-prescriptive requirements are managed and realised;
- Review and update Sustainability Requirements Matrix (Appendix B);
- Ensure Climate Change risks are being mitigated through construction;
- Ensure energy/carbon, water, materials and waste are monitored and tracked to quantify achievement of reduction targets;
- Ensure that all construction vehicles, plant and equipment are selected and operated for optimum energy efficiency;
- Identify sustainability opportunities in the Sustainability Opportunities Register (Appendix D), evaluate opportunities for inclusion in construction, and confirm all construction related opportunities have been closed out (accepted or dismissed);
- Collect evidence for ISCA credits; and
- Update ISCA Tracker and scorecard (Appendix C).

12 Sustainable Procurement Management

12.1 Overview

The IS Procurement and Purchasing category assesses the level of consideration afforded to economic, environmental and social elements and impacts associated with the identification, evaluation, selection and final procurement of goods and services.

The Project's commitment to sustainable procurement is demonstrated in the Sustainability Policy which is publicly available on the Project website. In developing, implementing and maintaining the procurement policy and processes associated with meeting the IS requirements, GRCLR will comply with the requirements of ISO 20400:2017. ISO 20400 defines sustainable procurement as 'procurement that has the most positive environmental, societal and economic impacts possible across the entire life cycle of and that strives to minimise adverse impacts'.

The Project will encourage a lasting positive supply chain legacy by influencing subcontractors and suppliers to consider and adopt more sustainable practices by:

- Committing to require environmental, social and economic aspects to be considered in the procurement process.
- Procuring products which possess recognised sustainability credentials, or third party certified eco-labels where available and feasible;
- Prioritising procurement from local businesses including contractors, subcontractors, voluntary sector organisations, consultants and suppliers as well as service providers and employment opportunities.

12.2 Supplier Identification, Evaluation and Contract Award

All suppliers and subcontractors tendering for work on the project will be issued a selection questionnaire or tender schedules requesting them to provide details of their sustainability policies, performance and management approach.

Completed questionnaires provided by subcontractors and suppliers will be evaluated by either the Sustainability Representative or Procurement team, with the resulting scores for these non-financial criteria contributing to at least 20% of the total tender score. The final scoring acts as a key factor in determining which subcontractor wins the tender.

For procurement packages with significant sustainability outcomes or risks, a member of the Sustainability Team may participate in a kick-off meeting organised by the delivery team to ensure the subcontractor/supplier is aware of their requirements.

12.3 Managing Supplier Performance

Supplier contracts considered to have a high materiality will have specific contract objectives and/or targets to address the risk or opportunity that they pose. Supplier performance against the targets and objectives will be monitored for the duration of the contract. This will involve performing brief audits of compliance with the sustainability requirements of the contract considered highest risk for the goods or services contracted.

Early identification of poor sustainability performance or non-compliance will ensure performance is actively managed before it impacts the Project. Similarly, positive performance will be identified and shared with the wider project team to promote sustainability opportunities.

Applicable material suppliers (e.g. concrete, quarry materials, waste) will be required to provide monthly reports detailing the requirements such as waste diversion, percentage of FSC timber supplied or percentage of Supplementary Cementitious Materials (SCM) used in concrete.

12.4 Sustainable Procurement for High Impact Suppliers

GRCLR will provide sustainability training to High Impact Suppliers defined as those suppliers with over 9% of materials / products of the SOM Works by value. GRCLR will follow the guidance provided in the IS Technical Manual and Compulsory Requirement 12 of TfNSW's SDG, which refers to materials / services that have known (or potentially) significant environmental, social or socio-economic impacts or opportunities. Under the SDG specific elements to consider include the level of spend, ability to influence, and corporate sustainability policy commitments.

GRCLR will identify High Impact Suppliers and undertake training outlined in the SDG to achieve Level P1 – Sustainability training for high impact suppliers. This training may include internal training (GRCLR-led seminars or workshops with relevant GRCLR and supplier staff) and external training, e.g. online modules, training through the Australian Supply Chain Sustainability School, and will be determined based on scope, supplier needs and schedule. Evidence will include documentation outlining the process adopted to identify High Impact Suppliers, and a summary of the type of training, date/s and suppliers involved.

13 Sustainability in LRV Design and Manufacture

Sustainability requirements related to the LRV design, manufacture and operations will be identified and implemented according to the process outlined in Section 8.3. The sustainable procurement process for the LRVs is described in Section 12. 'Social accountability' related to LRVs is described in Section 14.

An Environmental Product Declaration (EPD) for the LRVs will be developed in accordance with ISO 14025:2006, using the latest Product Category Rules for rolling stock as developed by The International EPD® System.

The key steps to develop an EPD under The International EPD® System are:

1. Perform a life cycle assessment (LCA) based on Product Category Rules;
2. Compile information in the EPD format;
3. Verification by an approved individual verifier or an accredited certification body; and
4. Registration and publication completed by the Secretariat.

In recent years, CAF has developed EPDs for heavy and light rail rolling stock across the world. This includes the Urbos 100 tram for the City of Zaragoza, which is very similar to the trams proposed for PLR. A copy of the Zaragoza Tram EPD is included in Appendix G.

The intent is to bring forward the development of the EPD for the LRVs (earlier than one year into operations, per the Deed) in order to meet the IS Mat-2 Level 2 requirement. This is under discussion with CAF to confirm this can be achieved. If not, ISCA approved environmental labels for other materials to be used across the SOM contract will be used to meet this requirement. This may include high-value, high-use materials such as concrete, steel and asphalt. These materials will be identified through a mapping process, where existing EPDs and product labels are mapped against the key materials to determine likely opportunities to meet this requirement. This mapping exercise will be undertaken during PDR when the bill of quantities is further developed, and will be progressed through DDR and during construction. The other option under consideration is the adoption of the ISCA v2.0 approach to sustainability labelled products (credit Rso-7), which will be undertaken in consultation with ISCA.

14 Social Accountability

SA8000 is the International Standard that defines and measures social performance in eight areas important to social accountability in workplaces. These include:

1. Child Labour
2. Forced or Compulsory Labour
3. Health and Safety
4. Freedom of Association and Right to Collective Bargaining
5. Discrimination
6. Disciplinary Practices
7. Working Hours
8. Remuneration
9. Management System

GRCLR, in collaboration with delivery partner, CAF and sub-contractor Laing O'Rourke, will be responsible for the majority of the workforce and procurement for the design and construction of the SOM scope. For Australian-based activities GRCLR (and sub-contractors) are governed by relevant Australian and state laws which are aligned with the principles of SA8000. In addition, each organisation operates under their respective Codes of Conduct, Sustainability Policies, and human resources and procurement policies and processes, which support the intent and objectives of key international frameworks, including SA8000, the International Labour Organisation, the Universal Declaration of Human Rights and the United Nations Global Compact. These policies and processes extend to cover procurement from suppliers across the world.

Relevant references include:

- CAF's Code of Conduct, Business Procurement Policy and Supplier Code of Conduct, which describe CAF's requirements regarding respect for human rights, working conditions, business ethics, the environment, health and safety, and confidentiality.

  https://www.caf.net/upload/accionista/corporate-social-responsability-policy-of-CAF.pdf

  https://www.caf.net/upload/accionista/informe-anual-modern-slavery-act-2015_2018_en.pdf

  https://www.caf.net/en/proveedores/proveedores.php
- Laing O'Rourke's Global Code of Conduct sets out standards for working together and with others – and describes the way they manage the social, economic and environmental impacts of operations. The Code provides practical guidance on issues such as bribery and corruption, equal opportunities and human rights, safety, sustainability and security.

  http://www.laingorourke.com/who-we-are/governance/code-of-conduct.aspx

  http://www.laingorourke.com/responsibility/marketplace.aspx

  http://www.laingorourke.com/responsibility/governance/modern-slavery.aspx
- TransDev's Corporate Social Responsibility plan, Human Rights Group Statement and Code of Ethics describe TransDev's approach and commitment to these globally important issues.

  https://www.transdev.com.au/about-us/growing-responsibly/

  https://www.transdev.com/en/about-us/ethics-and-compliance/

15 Climate Change Risk Assessment and Adaptation

A Climate Risk Assessment (CRA) is used to address climate change risks and uncertainties by identifying measures to adapt and build resilience. It involves the identification and assessment of the risks climate change poses to the project and prioritises any risks that require appropriate actions for adaptation.

The CRA will be undertaken in accordance with:

- TfNSW Enterprise Risk Management (TERM) Standard 30-ST-164 (Version 5.0);
- TfNSW Climate Risk Assessment Guidelines (V3.0 February 2018);
- TfNSW SDG v4.0 CR3 requirement – Climate change risk;
- Australian Standard 2013, *AS 5334 - 2013 Climate change adaption for settlements and infrastructure – A risk based approach*; and
- ISCA 2016, *Infrastructure Sustainability Rating Tool Technical Manual: Cli 1 – Climate Risk Management*.

The CRA process is shown in Figure 10, and further details are included in Appendix E.

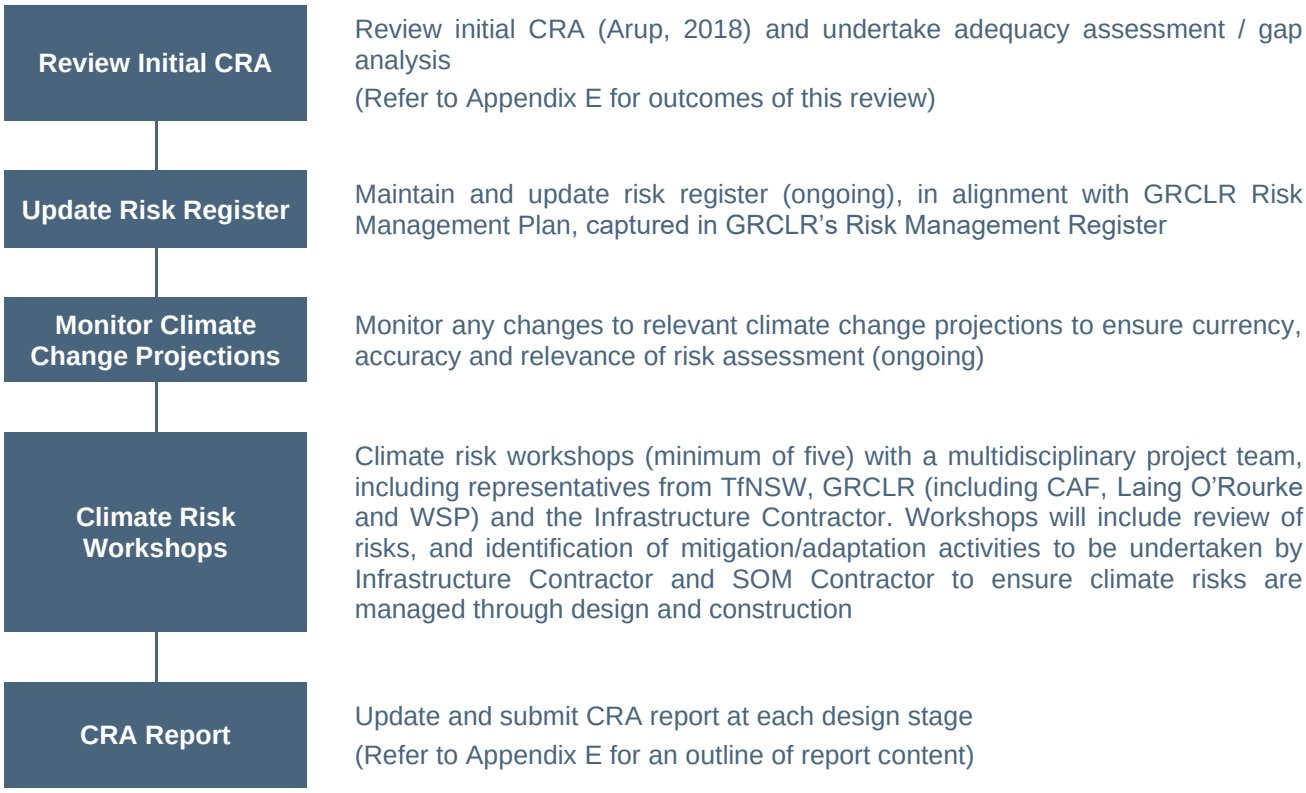


Figure 100: Climate Risk Assessment Process

16 Using Resources

16.1 Modelling

Resource reductions performance against the targets and objectives outlined in Section 6.2 will be assessed against a 'base case', in accordance with IS 1.2 Using Resources credits (Ene-1, Wat-1, Mat-1). A base case is determined from the reference design (e.g. tender design), then adding/subtracting emissions/resource usage for any scope changes, then making any adjustments to account for design decisions that were included in the reference design that go beyond Business As Usual (BAU).

Initiatives and activities to reduce resource consumption that are identified and included in the design are then subtracted from the base case to determine the 'actual design' consumption/emissions. This is demonstrated in . The base case will be calculated using data generated during SDR and PDR and subsequently submitted to ISCA for verification and approval. Emission reductions will be tracked through design and construction through a DDR life cycle assessment.

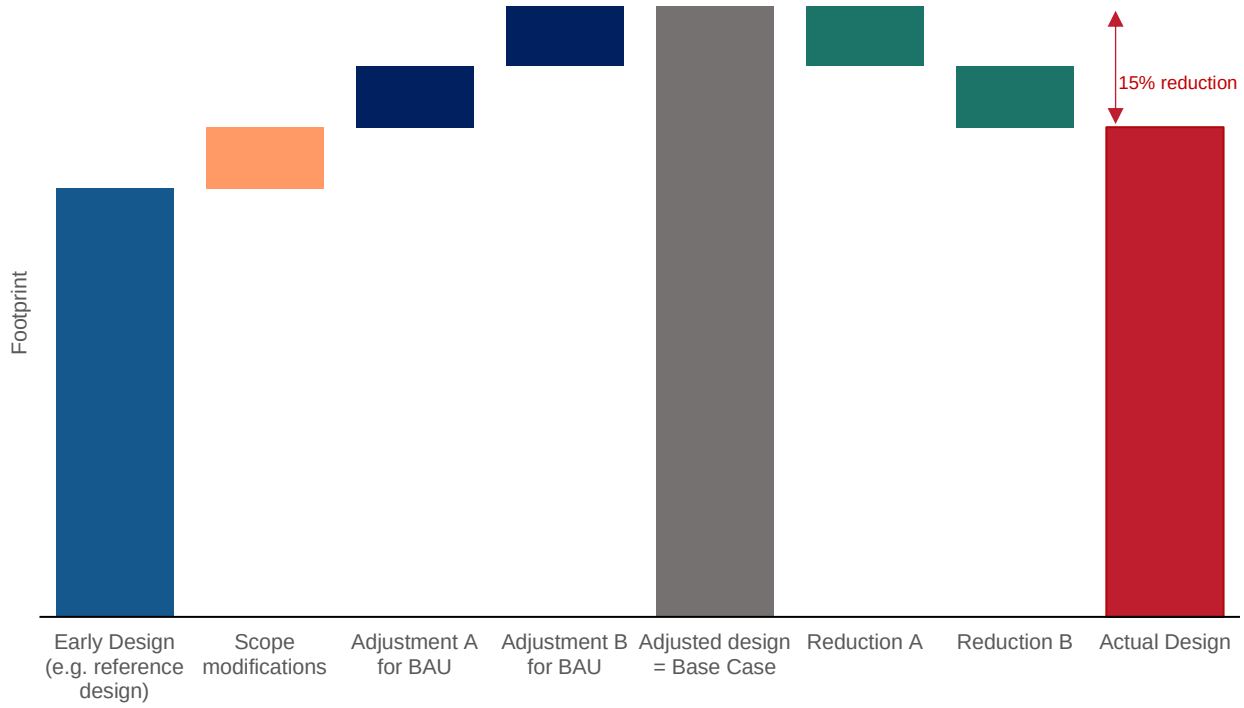


Figure 111: Base Case Determination and Resource Reduction

16.2 Energy, Carbon and Materials Management

The IS Energy and materials categories require energy use, GHG emissions and management strategies to be measured, verified and reported on during all infrastructure lifecycle stages. It also requires identification and evaluation of opportunities to understand sources of energy use, GHG emissions and material lifecycle impacts and develop effective management processes as part of a process of continual improvement.

The process for energy and materials management is outlined in Figure 12.

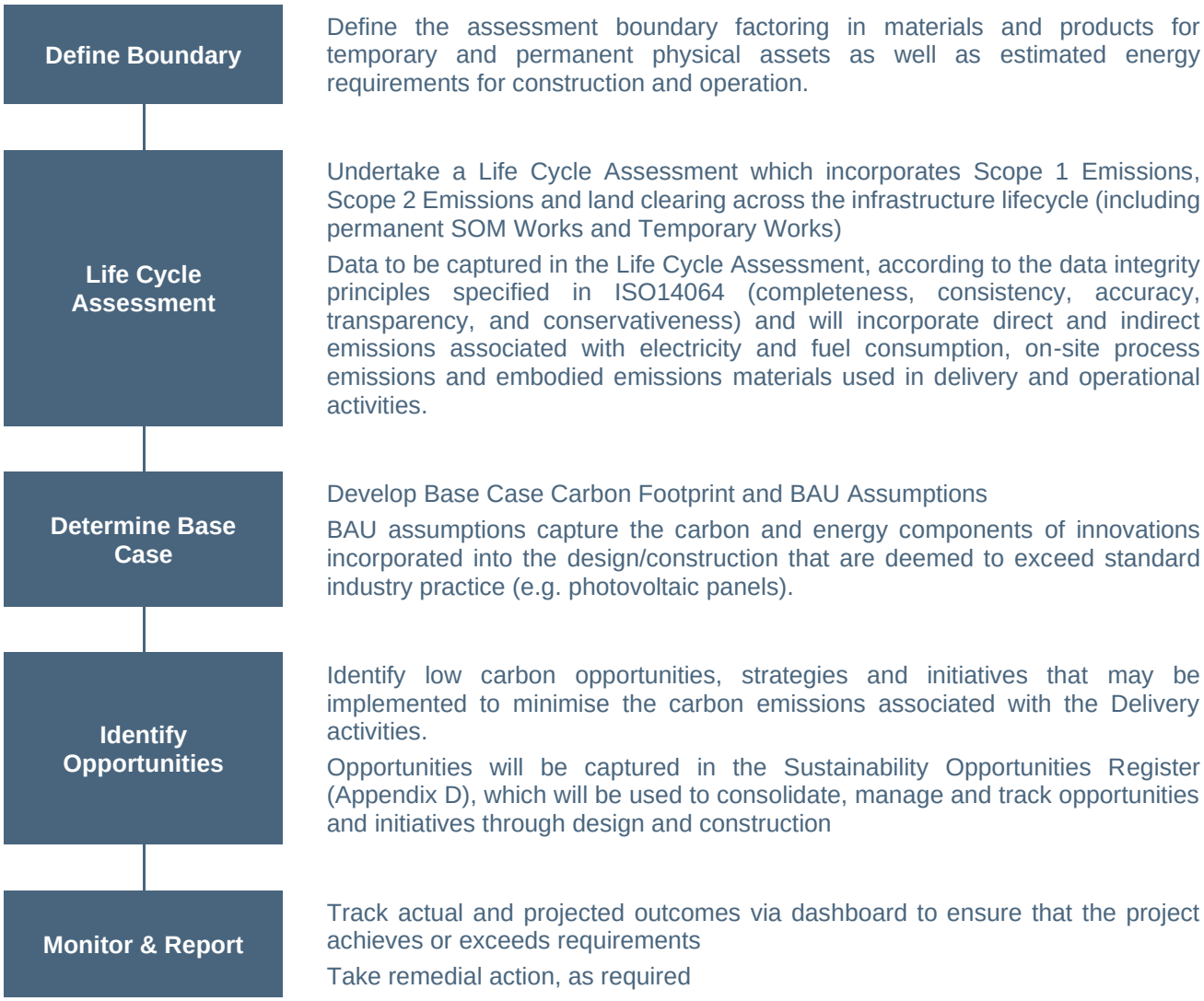


Figure 122: Energy and Materials Management Process

16.3 Energy Reduction and Renewable Energy

16.3.1 Energy Reduction Hierarchy

Energy-efficient design and construction principles are critical in creating infrastructure that is affordable and enduring. The project is committed to achieving greenhouse gas reductions during project construction and operation with initiatives such as:

- Construction planning reducing truck or materials movements
- Procuring recycled products/materials to ensure that new high embodied carbon materials are not required for the project
- Substituting materials with more carbon efficient materials such as reducing the percentage of portland cement

Reductions will be achieved through the implementation of construction and operational initiatives, such as energy efficient design and sustainable construction practices or energy substitutes such as renewable energy, which have been selected using a hierarchical approach as shown in Figure 13 - Energy Reduction Hierarchy.

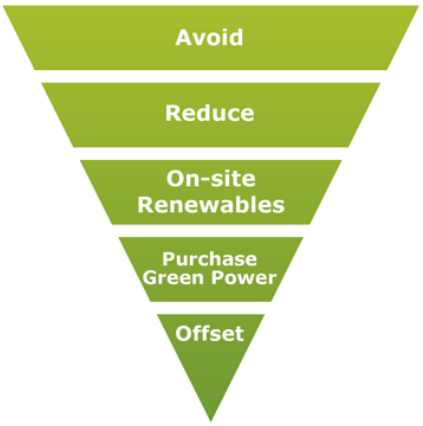


Figure 13 - Energy Reduction Hierarchy

Avoid: resource use through design refinement

Reduce: energy consumption by installing items such as efficient lighting, whitegoods, maintenance equipment, etc

Renewables: explore opportunities for renewables

Purchase: investigate green energy procurement

Offset: Reduction targets through energy offset/carbon credits.

16.3.2 Renewable Energy

Renewable energy opportunities, while primarily considered during design for long term operational reductions, will also be considered during construction.

GRCLR have established a criterion for consideration when renewable energy options are proposed for construction. The options are given a score (1-5) for each of the following categories, and the total score provides the basis for implementation.

1. Security of supply (connection, availability)
2. Emissions factors
3. Cost of supply (monthly across life of the project - 16 months)

16.4 Water Management

The IS Water category requires water reduction, substitution and management strategies to be measured, verified and reported on during all infrastructure lifecycle stages.

The process for water management is outlined in Figure 125.

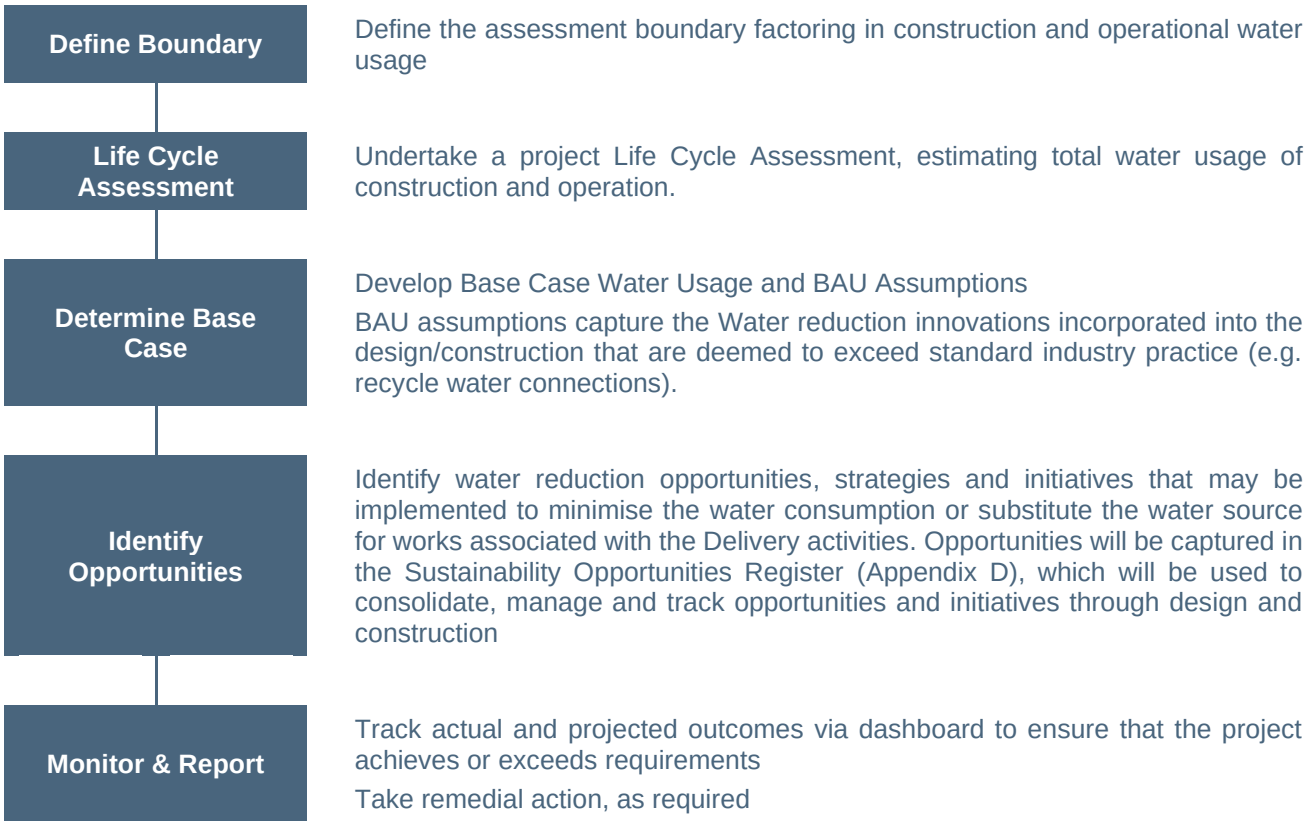


Figure 134: Water Management Process

17 Management and Governance

17.1 Risk Management

Sustainability risks and opportunities will be continually identified throughout the design and construction of the project with formal reviews occurring at least annually. High level sustainability risks and opportunities for the Project will be integrated within the Project's risk management plan.

A sustainability representative will participate in the risk management process by attending risk review meeting as part of the Senior Leadership Team and participating in risk workshops.

17.2 Auditing and Monitoring

Assurance, monitoring, auditing, corrective action and continuous improvement will be undertaken in accordance with the Quality Management Plan.

In addition to audit requirements captured in the GRCLR Audit Schedule (PLR1SOM-GLR-ALL-PM-SCH-001001), opportunities for obtaining ISCA credits through undertaking audits and/or reviews may include the following, if required:

- Management Systems Review/Audit - ISCA Man-4: Environment and/or Sustainability audits of the management system are conducted. At least one external review or audit is conducted during design, and during construction, at least four audits are conducted per year where at least one is external;
- Energy/GHG Review/Audit - ISCA Ene-1: monitoring and modelling of energy use and GHG emissions, and actions undertaken to reduce them;
- Noise Review/Audit - ISCA Dis-2: monitoring and modelling of noise, including divergences/exceedances;
- Lighting Review/Audit - ISCA Dis-5: night time audit of mitigation measures during construction;
- Contaminated Site Review/Audit - ISCA Lan-3: site assessment and remediation appraisal, per National Environment Protection (Assessment of Site Contamination) Measure (1999);
- Waste Review/Audit - ISCA Was-1: monitoring and management of waste, including both systems and data i.e. the systems used to manage waste and the data recording and reporting;
- Ecological Review/Audit - ISCA Eco-1: review of Ecological Management Plan (or equivalent);
- Heritage Assessment Review/Audit - ISCA Her-1: review of Heritage Assessment / Management Plan (or equivalent);
- Stakeholder Engagement & Communications Strategy Review/Audit - ISCA Sta-1, Sta-3 & Sta-4: review of Stakeholder Engagement Strategy, effectiveness of community communications and addressing of community concerns, issues or feedback; and
- Urban Design / Landscape Management Plans Review/Audit - ISCA Urb-1 & Urb-2: review of Urban & Landscape Design Plan, and/or compliance check of implementation of urban design and landscape management plans or maintenance manuals or similar.

Specific additional audits and reviews that will be undertaken to achieve the ISCA credit levels detailed above will be explored in consultation with TfNSW and ISCA during the development and review of GRCLR's overall ISCA pathway.

Additionally, ongoing verification will occur through the IS Rating process (refer to Section 0).

17.2.1 Internal Tracking Tools

Key internal tools that have been developed to track sustainability performance include:

- Sustainability Dashboard: a live document used to track overall progress and will be updated regularly as a key tool for internal management and reporting, including the following:
  - ISCA credit status: red, amber, green;
  - ISCA score: target, projected, realised;
  - Savings in water, emissions, electricity, materials, waste; and
  - Opportunities: identified, dismissed, accepted/implemented;
- Sustainability Requirements Matrix (Appendix B): following initial development, this matrix will be reviewed and updated regularly in line with each design stage and prior to construction, and includes the following:
  - SOM Deed reference;
  - Description of the requirement;
  - Notes / Actions;
  - Timing;
  - Whether the requirement is related to:
    - Governance;
    - Design (Prescriptive / Non-Prescriptive);
    - Construction (Prescriptive / Non-Prescriptive);
    - Each of the ISCA credits; and
    - Each of the Design Disciplines;
- ISCA Tracker (Appendix C): a live document that captures progress against all ISCA credits, including:
  - Credit title;
  - Requirements for Levels 1, 2 and 3;
  - Materiality score;
  - Target level and confidence of attaining;
  - Evidence requirements and reference;
  - Discussion / comments;
  - Risk mitigation action;
  - Compliance strategy; and
  - Scope split
- Sustainability Opportunities Register (Appendix D): a live document that will be updated on an ongoing basis, which captures opportunities across the SOM Deed, including:
  - Opportunity summary;
  - Opportunity description;

- Sustainability benefit/cost evaluation (related to ISCA credits), as well as financial and schedule impacts;
- Tracker to tag each opportunity as ‘progress’, ‘further investigation required’, or ‘dismiss’;
- Justifications and actions; and
- Any related references.

17.3 Reporting

The reporting methodology used to address the specified reporting requirements in the relevant sections of Exhibit A, Annexure 13 (*Reporting Requirements*) of the SOM Contract is outlined in the Contract Management Plan. This will be supported by inputs from the independent sustainability professional, engaged under ISCA Man-3.

17.3.1 Monthly Report

As a minimum, the sustainability section of the Monthly Report will address and detail:

- GRCLR’s performance against the targets identified in this DSMP, summarised within a compliance table and a dashboard showing the status of compliance with the sustainability requirements and specified targets of the Contractor's Activities;
- Progress towards achieving the "Design" and "As Built" ISCA IS rating tool v1.2, including completed and updated checklists and scorecards;
- Data to support reporting on targets, and a commentary / analysis of trends including actions to be undertaken to improve performance, for the following:
  - Greenhouse gas emissions throughout construction in accordance with the requirements of the Principal's CERT;
  - Current and accumulated level of energy use and greenhouse gas emissions and performance against the target identified in this Plan;
  - Electricity consumption and generation, including any on-site renewable energy generation, renewable energy sources and offsets for the SOM Works, and performance against the targets in this Plan;
  - Fuel consumption and performance against fuel consumption targets;
  - Volume and percentage of potable and non-potable water consumed for the SOM Works, and performance against targets;
  - Quantities of waste generated, recycled, beneficially re-used or disposed of and performance against waste targets, including spoil targets;
  - Volume weighted average of substitute cementitious content in concrete used for the SOM Works, and the substitute materials specified and categorised;
  - Details of sustainable training and inductions provided to major Subcontractors and suppliers including sustainable procurement;
  - Details where low carbon and greenhouse gas reduction initiatives have been implemented in the design and construction of the SOM Works and Temporary Works;
  - Climate change risk assessments undertaken and details of where the assessments have influenced the design and construction for the SOM Works and Temporary works;

- Life cycle assessments undertaken, and details of environmental impact reduction initiatives which have been implemented in the design and construction of the SOM Works and Temporary Works; and
- Details of any innovative sustainable design initiatives.

17.3.2 Annual Sustainability Report

During the Delivery Phase, GRCLR will prepare and submit an annual sustainability report to TfNSW on 31 August each year for review in accordance with Section 2.2.5. of Annexure 13. The report will demonstrate and detail performance in sustainability in relation to this Plan and include progress against sustainability goals and targets over the last year including annual sustainability reporting metrics in line with the NSW Government Resource Efficiency Policy 2014.

Appendix A – Environment and Sustainability Policies

GREAT RIVER CITY LIGHT RAIL ENVIRONMENT AND SUSTAINABILITY POLICY

Intent

Great River City Light Rail Pty Ltd (GRCLR) is the Supply, Operate and Maintain (SOM) Contractor for Parramatta Light Rail Stage 1. We understand what goes into making every journey an exceptional customer experience that is safe, reliable and integrated with other modes of transport.

GRCLR will design, construct, operate and maintain a world-class light rail network that empowers prosperity for the Greater Parramatta Area and supports the realisation of the Future Transport 2056 Strategy.

GRCLR is committed to ensuring an environmentally sustainable future for Parramatta Light Rail, our customers and the Greater Parramatta Area.

Policy

To achieve this, GRCLR will:

1. Lead effectively and live our accountabilities and responsibilities at all levels of the organisation, starting with the Directors through to employees and Subcontractors. This includes all upholding the principles of social sustainability and social accountability across our workforce, our activities and our supply chain;
2. Comply with all environmental requirements included in relevant legislation, the Conditions of Approval, Preferred Infrastructure Report and the Environmental Impact Statement;
3. Integrate sustainability principals across all GRCLR activities, including design, construction, procurement, commissioning, operations and maintenance;
4. Collaborate with and proactively engage with all stakeholders at all levels;
5. Create a culture of continuous improvement for environment and sustainability management;
6. Understand, comply with and embrace our environment and sustainability compliance obligations;
7. Establish annual objectives for environmental management and regularly verify the compliance and effectiveness of the measures to ensure that objectives are met;
8. Promote an environmentally aware, sustainability-focused culture within GRCLR, stakeholders, customers and the Greater Parramatta Community;
9. Commit to the prevention of pollution, protection of biodiversity, implementation of restorative actions, minimisation of resource use and waste, reduction of greenhouse gas emissions, and enhancement of climate change resilience through adaptation and mitigation across the delivery of works and during operations; and
10. Plan effectively, and provide and use the necessary resources to meet environmental objectives.

To support this policy, GRCLR has established an Integrated Management System (IMS), with appropriate policies, procedures and practices in place, which captures the requirements of AS/NZS ISO 14001:2016.

This Policy will be communicated to and applies to all GRCLR employees and Subcontractors, and will be made publicly available.

[redacted]

Project Director

GREAT RIVER CITY LIGHT RAIL
LIFE MORE LIVEABLE

Document Owner	Document Number	Version	Date of Issue	24/09/2021
[redacted]	PLR1SOM-GLR-ALL-PM-PRO-000004	3	Last Review Date	09/09/2021
			Review period	Annual
			Next review Date	09/09/2022

Appendix A2 – TfNSW Parramatta Light Rail Environment and Sustainability Policy

Parramatta Light Rail

NSW Transport for NSW

NSW MAKING IT HAPPEN

Parramatta Light Rail Environment and Sustainability Policy

This policy relates to the delivery of the Parramatta Light Rail (PLR) project and is aligned with the Transport for New South Wales (TfNSW) Environment and Sustainability Policy approved by the Secretary in August 2015.

The PLR project will not only deliver a sustainable transport outcome but will also contribute to the urban renewal, sustainable growth and transformation of the Greater Parramatta to Olympic Peninsula Priority Growth area including Westmead Health Precinct, Greater Parramatta, Sydney Olympic Park and Camellia.

This policy outlines the commitment to:

- Develop effective and appropriate responses to sustainability including climate resilience, urban place making and integration of public and active transport modes.
- Minimising environmental impacts of the project and embedding sustainability principals into the planning, construction and operational phases of the project.
- Proactively comply with all applicable environmental laws, regulations and statutory obligations in both domestic and international jurisdictions where they apply.

To deliver on policy commitments the PLR team will work in the following areas:

Leadership

- Encourage innovation through design and procurement in the areas of sustainability and climate resilience.
- Explore new benchmarks for sustainability in the transport infrastructure sector by expecting quality, value for money and benefit maximisation (environment, economic and social) from our designers, contractors, and suppliers.
- Implement coordinated and transparent decision-making, through collaboration across government departments, stakeholders and suppliers.

Customers, Community and Stakeholders

- Deliver our customers an efficient accessible and convenient transport service.
- Establish positive relationships with the local community to maximise opportunities to create places our customers are drawn to by enhancing liveability, community and economic outcomes.
- Work with the community and our stakeholders to develop workforce skills and diversity.
- Develop and maintain collaborative relationships with our key stakeholders and other important partnerships in order to obtain mutually beneficial sustainability outcomes.

Embedding Sustainability

- Establish, monitor, measure and report on sustainability objectives and targets.
- Develop and integrate an environmental and sustainability management system throughout the project lifecycle.
- Apply assurance processes to monitor performance and identify appropriate rewards and corrective actions.
- Be responsible in the sourcing of goods and services by implementing best practice sustainable procurement protocols.
- Hold project employees and contractors accountable for proactively meeting their environmental, sustainability and climate resilience responsibilities and provide appropriate training, information and resources for all project personnel.

[redacted]

Project Director

23 March 2017

Date

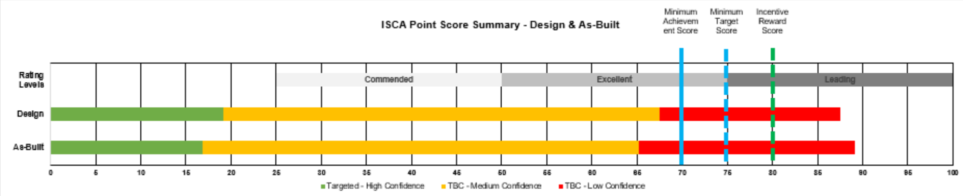
Appendix B – Sustainability Requirements Matrix

A snapshot of the Sustainability Requirements Matrix is included in this appendix. Refer to PLR1SOM-GLR-ALL-EN-REG-000001 for the live document which will be updated separately to this DSMP.

Source	Reference	Requirements	Item Applies to / Involvement : (Design, Construction, Operation, Management, Procurement)	Main Responsible Party (CAF, GRCLR, WSP, LORAC, SPS)	Contact Person	ISCA Category	CAF Design Packages - **Alex Heidari** Rail Systems - **(DP 3, 4, 5, 8)**	CAF Design Packages - **Alex Heidari** Substation Power - **(DP 6, 10)**	CAF Design Packages - **Lia Camellio / Renzo Tonin** Noise & Vibration - **(DP 17)**	CAF Design Packages - **Darren MacDonald** LRVs - **(DP 7)**	CAF Design Packages - **Darren MacDonald** SaMF Maintenance Plant - **(DP**
Exhibit B [SPR] Scope and Performance Requirements											
Exhibit B, SPR	**7.13.**	**General Requirements**									
Exhibit B, SPR	7.13. (a)	The Contractor must comply with the Sustainability Requirements set out in Appendix D - Sustainability Requirements.	All	All		All	●	●	●	●	●
Exhibit B, SPR	**7.2.20**	**SaMF Sustainability Elements**									
Exhibit B, SPR	7.2.20 (a)	The Contractor must comply with the sustainability requirements of **Appendix D – Sustainability Requirements** [See below for Appendix D - Sustainability Requirements]	All	All	All	All	●	●	●	●	●
Exhibit B, SPR	7.2.20 (b)	The Contractor must provide on-site solar photovoltaic (pv) generating systems integrated within the SaM Facility boundary that:	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (b) (i)	Have a minimum of 300 kW rated power output;	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (b) (ii)	Produces a minimum of 360 MWh in the first year of operation;	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (b) (iii)	Is oriented and tilted to optimise energy generation;	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (b) (iv)	Connects to the PLR low voltage network; and	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (b) (v)	Allows for export of power, taking into consideration the following Sections of the Principal's Technical Note - TN 031:2016 – "Requirements for photovoltaic installations connected via inverters to the RailCorp low voltage (LV) distribution network" 5 May 2016:	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (b) (v) (A)	Section 4.14 - Export into LDNSP network; and	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (b) (v) (B)	Section 4.18 - PV System connected solely to LDNSP.	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (c)	The design of the SaM Facility must allow for the provision of battery storage in the future considering the draft voluntary standard, DR AS/NZS 5139:2017.	Design	WSP	LORAC Design (Darren) WSP Design Manager	Ene, Inn	●	●	●	●	●
Exhibit B, SPR	7.2.20 (d)	The Contractor must make a physical allowance for storing up to 500 kWh of battery and an appropriate storage facility (stand-alone room or within existing plant room) with the ability to have this storage facility appropriately fire rated in the future.	Design	SPS / LORAC	LORAC Design (Darren) WSP Design Manager	Ene, Inn	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e)	The Contractor must provide and install:	Design	SPS / LORAC	LORAC Design (Darren)		●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (i)	High quality solar panels (Bloomberg Tier 1 manufacturer, although others may be considered on merit);	Design	SPS / LORAC	LORAC Design (Darren)	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (ii)	The Contractor must provide for recycling and general waste in all bin locations	Design	WSP	LORAC Design (Darren) WSP Design Manager	Was	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (iii)	A pv racking system to ensure optimal power generation potential;	Design	SPS / WSP	LORAC Design (Darren) WSP Design Manager	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (iv)	Systems and equipment produced by a well-known, quality manufacturer;	Design	SPS / LORAC	LORAC Design (Darren)	Pro, Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (v)	Inverters that are housed internally	Design	SPS / WSP	LORAC Design (Darren) WSP Design Manager	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (vi)	Connection to the low voltage power system;	Design	SPS / WSP	LORAC Design (Darren) WSP Design Manager	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (vii)	System requirements as specified by the electricity distributor (if necessary);	Design	SPS / WSP	LORAC Design (Darren) WSP Design Manager	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (viii)	A system capable of providing power data export via Ethernet link, and includes inbuilt Bluetooth (where possible);	Design	SPS / WSP	LORAC Design (Darren) WSP Design Manager	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (ix)	A system able to work with smart meters; and	Design	SPS / WSP	LORAC Design (Darren) WSP Design Manager	Ene	●	●	●	●	●
Exhibit B, SPR	7.2.20 (e) (x)	Safe roof access, including walkways with handrails, and water points for cleaning and maintenance.	Design	WSP	LORAC Design (Darren) WSP Design Manager	n/a	●	●	●	●	●
Exhibit B, SPR	7.2.20 (f)	The solar panels must be certified for all applicable loading conditions.	Design	SPS / LORAC	LORAC Design (Darren) WSP Design Manager	Ene	●	●	●	●	●

Appendix C – ISCA Tracker

A snapshot of the ISCA Tracker is included in this appendix. Refer to PLR1SOM-GLR-ALL-EN-REG-001002 for the live document which will be updated separately to this DSMP.



Credit		L1 Criteria	L2 Criteria	L3 Criteria	Materiality Score	No. Levels	Target (Design) Level (TBC)	Target (Design) Score (TBC)	Confidence (Design) High	Confidence (Design) Medium	Confidence (Design) Low	Target (As-Built) Level (TBC)	Target (As-Built) Score (TBC)	Confidence (As-Built) High	Confidence (As-Built) Medium	Confidence (As-Built) Low	Recommended Risk Mitigation Action	Meeting Notes of GRCLR (Advisian) Thursday 24th Oct.	Responsible (Primary and Secondary)	Evidence Requirements	Evidence Documentation	Compliance Strategy	Scope to Deliver	GRCLR Sustainability Manager Scope	CAF Sustainability Manager Scope	LOR Scope	WSP Scope	External Scope
Management																												
Man-5	Reporting and review	Sustainability performance is reported at least annually to senior management. AND The sustainability report includes sustainability objectives and/or targets and identifies areas for improvement. AND Sustainability performance is reviewed formally at least annually by senior management.	The requirements for Level 1 are achieved. AND Sustainability performance is reported at least quarterly to senior management	The requirements for Level 2 are achieved. AND Sustainability performance is reported annually publicly. AND Management review incorporates stakeholder participation.	2	3	3	0.84	0.56	0.28		3	0.74	0.49	0.25				CAF	Annual sustainability reports. (Level 1) Minutes of annual management review meetings. (Level 1) Quarterly sustainability reports. (Level 2) Minutes of quarterly management review meetings. (Level 2) Evidence that sustainability reports are made public. (Level 3) Minutes of stakeholder meetings showing input to management review. (Level 3)	Annual Sustainability Report (Sept 2019) Quarterly sustainability reports	Sustainability Reporting will be done by the Sustainability Manager. Reviews will be done by senior management.	Include in role responsibilities	Manage Sustainability Reporting	Manage Sustainability Reporting	Contribute to Sustainability Reports - LOR Construction section	Contribute to Sustainability Reports - WSP Design section	
Man-6	Knowledge sharing	Sustainability knowledge is shared within the project.	The requirements for Level 1 are achieved. AND Sustainability knowledge is shared beyond project boundaries to parent organisations and/or other key stakeholders. AND Sustainability knowledge is shared from outside the project/asset onto the project.	The requirements for Level 2 are achieved. AND Sustainability knowledge is shared beyond project and key stakeholder boundaries to the wider industry. AND Sustainability knowledge sharing includes 'lessons learnt' (that had negative consequences) as well as 'good practices.	2	3	3	1.88	1.25	0.63		3	1.66	1.11	0.55		Review credit with Advisian.	NOTE: - HW set up regular catchups with team to satisfy Level 1 - HW to set up catchups with INFRA to satisfy Level 2 - HW/MK to investigate opportunities for sharing in industry to satisfy Level 3	GRCLR and CAF	An example of sustainability knowledge sharing. (Level 1) Documentation of sharing knowledge with parent organisations and/or key stakeholders e.g. presentations, briefing notes and meeting minutes. (Level 2) Documentation of sharing knowledge with stakeholders and the wider industry including lessons learnt. (Level 3)	• Sustainability working group meeting minutes • Minutes of Design Improvement Workshop (12/06/19)	Sustainability Reporting (or at least an executive summary) will be shared by the Sustainability Manager to parent organisations; nominated parent organisation representatives to present at ISCA conferences or similar to share case study with lessons learned	Include in role responsibilities	Participate in knowledge sharing forums	Participate in knowledge sharing forums	Participate in knowledge sharing forums	Participate in knowledge sharing forums	
Man-7	Decision-making	For significant issues, decision making is characterised by: Considering options including business as usual and proven approaches taken in comparable situations. AND Evaluating options primarily on the basis of financial aspects but considering environmental, social and economic aspects qualitatively through risk assessment, constraint analysis or other non-scored means.	For significant issues, decision making is characterised by: Considering options including business as usual and proven approaches taken in comparable situations. AND Evaluating options by considering environmental, social and economic aspects through the use of multi-criteria analysis or other scored means. AND	For significant issues, decision making is characterised by: Considering options including business as usual, non-asset, technical limits and an option that specifically aim to address sustainability aspects. AND Evaluating options by considering environmental, social and economic aspects through incorporating their value into cost-benefit analysis or other quantified means. AND Evaluating options based on	2	3	2	1.81	0.91		0.91	2	1.60	0.80		0.80	Review credit with Advisian, CAF, WSP.	NOTE: - HW RFI info from WSP and CAF - MK to follow up with LORAC - HW/MK to determine if anything is required from TfNSW	CAF This needs to be incorporated into senior decision making very early on when key D&C decisions are being made. Needs to include whole of life cost/impacts.	Design report or similar evidence of implementation of the above guidelines for one or more significant issues. (Level 1) Evidence that the design report uses a form of multi-criteria analysis or other scored means to evaluate via environmental, social and economic aspects. (Level 2) Evidence that the design report uses a form of cost-benefit analysis or other quantified means to evaluate		A multi-criterias core card of economic, environmental, social and life cycle aspects will be developed and used to qualitatively evaluate significant issues during project delivery	Include in role responsibilities	Oversight & support	Manage the MAN-7 Decision Making activities and documentation	Include MCA for major procurement and construction issues	Obtain WSP input on major design decisions	

Appendix D – Sustainability Opportunities Register

A snapshot of the Sustainability Opportunities Register is included in this Appendix. Refer to PLR1SOM-GLR-ALL-EN-REG-001001 for the live document which will be updated separately to this DSMP.

PLR SOM - SUSTAINABILITY OPPORTUNITIES REGISTER

QUALITATIVE DESCRIPTION OF VALUE ENGINEERING / SUSTAINABILITY INITIATIVE						ISCA					STATUS & FOLLOW UP				QUANTIFIED SAVINGS			DOCUMENTATION AND EVIDENCE			
REF	Design Discipline	Further Classification	Raised by	Reference scenario (ISCA Base Case)	Explanation of initiative or optimisation	Energy	Water	Material	PD	LCC	Status	Action required	Designer comment	Responsibility	Program savings (weeks)	Quantified Benefits (energy, water, materials)	CAPEX ($k)	OPEX ($k)	SWTC Reference (if	Reference Case Doc	Optimisation Document	Other comments
SUS-IN-001	Lighting, Mechanical, Architecture	SaMF - PK 31; PK 41; PK 40	Tender Initiative	NCC 2016 reference building	Combined Section J improvements to the SaMF. This includes lighting, mechanical and building fabric contributing to the overall improved building energy consumption performance. At a minimum this will demonstrate the 15% improvement required over NCC 2016 Reference Building.	x					Implemented	Quantify energy saving				15% energy reduction against Section J NCC 2016 Reference Building						
SUS-IN-002	Lighting, Mechanical, Architecture	BOCC - PK 19	Tender Initiative	NCC 2016 reference building	Combined Section J improvements to the SaMF. This includes lighting, mechanical and building fabric contributing to the overall improved building energy consumption performance. At a minimum this will demonstrate the 15% improvement required over NCC 2016 Reference Building.	x					Implemented	Quantify energy saving				15% energy reduction against Section J NCC 2016 Reference Building						PK15 DDR Energy Consumption Report - PLR1SOM-GLR-ALL-SB-RPT-153006 - Section 5.2
SUS-IN-003	Lighting	SaMF - PK 45	Chris Cody	LORAC to confirm	All external and unconditioned space lighting to be LED to the SaMF. This includes unconditioned maintenance working areas, car park, stabling area, yard security lighting etc.	x					Implemented	Quantify				All specified Luminaires have LED light sources. It is estimated that the use of LED light sources will provide a > 50% reduction on the SDG lighting power density targets.						Refer to lighting luminaire schedule Appendix I and Section 7.3.2; PK45 Design Report.
SUS-IN-004	Lighting	BOCC - PK 19	Chris Cody	LORAC to confirm	All external and unconditioned space lighting to be LED to the BOCC. This includes external lighting to landscaped areas and carpark.	x					Implemented					All specified luminaires have LED light sources. Internal lighting achieves > 15% reduction on Lighting Power Density against Section J.6 NCC 2016. External lighting achieves > 15% reduction on TfNSW SDG 4 W/m2 Target.						Refer to Lighting Luminaire Schedule, PK19 Design Report; Appendix I.
SUS-IN-005	Lighting	TPS - PK 20	Chris Cody	LORAC to confirm	All external lighting to be LED at all TPS locations. This includes external/security lighting only.	x					Implemented					All external luminaires have LED light sources. External lighting achieves > 15% reduction on TfNSW SDG 4 W/m2 Target.						Refer to Lighting Luminaire Schedule, PK20 Design Report; Appendix I.

Appendix E – Climate Change Risk Assessment – Supporting Information

Initial CRA

An initial CRA developed for PLR Stage 1 (Arup, 2018) was completed in January 2018 based on a concept design for the EIS. The scope of the CRA was:

> *[…] future climate related risks to both the physical asset (PLR corridor, track, LRV stops, ancillary equipment and facilities) and the operation and customer experience. The primary factor of the assessment is to;*
>
> - *Assess potential vulnerabilities that need to be considered in the design, construction and the operation processes of the PLR Stage 1*
> - *Provide recommended control measures to incorporate into the design, and*
> - *Provide a working document that assists the mitigation of climate risks through each phase of project delivery and operation.*

The CRA used two different time periods:

- 2030, representing the near-term design life of the project asset components; and
- 2090, representing the long-term design life of the project asset components.

It identified the following risk types:

- 2030 scenario: 27 low, 15 medium and no high; and
- 2090 scenario: 21 low, 19 medium and two high.

Review of initial CRA

During SDR a review of the CRA was undertaken in accordance with section 3.3 in the latest revision of the *TfNSW Climate Risk Assessment Guidelines* (V3.0 February 2018). The purpose of this review was to ensure the following are still actual/accurate/appropriate:

- Climate change projections for relevant time series (2030 and 2090);
- Climate change risk and ratings;
- Climate adaptation actions and mitigations; and
- Residual risk ratings.

The results of the review are shown in Table E1. The ‘Status’ column indicates whether the relevant CRA component is still valid or applicable (‘tick’ or ‘cross’) or whether further action is required (indicated by a ‘!’). These actions will be addressed during the climate risk assessment.

Table E1: Initial CRA Review/Adequacy Assessment (as at June 2019)

CRA component	Review notes	Status
TfNSW CRA Guidelines	The initial CRA was undertaken in accordance with a previous version (V1.0) of TfNSW's Climate Risk Assessment Guidelines. No major differences existing between V1.0 and the latest version of the Guidelines (V3.0 February 2018), aside from the requirement to undertake a review of the CRA at detailed design phase, which will be undertaken.	✓
Historical climate data	Historical climate data was obtained from BoM to establish a climate baseline for the project area.	✓
Data on hot days	NSW and ACT Regional Climate Modelling (NARCliM) data was used as a reference source for the number of hot days (days over 35°C) experienced within the Sydney region.	✓
Climate projection data	Climate projection data was sourced from the CSIRO's Australian Climate Futures (hereafter referred to as Climate Futures). The Climate Futures data was selected instead of the NARCliM data (except for data on hot days) as it provides for more preferable time intervals and more detailed projections.	✓
Representative Concentration Pathway (RCP)	Out of the four RCPs, the worst-case scenario was used (RCP 8.5 – assumes global annual GHG emissions continue to rise throughout the 21st century).	✓
Climate change projection time series	The 2030 (near-term design life of project assets) and 2090 (long-term design life of project assets) time series were used in the initial CRA.	✓
Sea level rise projections	Projections in the now abandoned NSW Government's *NSW Sea Level Rise Policy Statement* (November 2009) were used in the initial CRA because City of Parramatta Council had not yet issued alternate sea level rise projections. No updated projections are currently available from the City of Parramatta Council. The projections used in the CRA are still the most suitable source.	✓
Flooding	Additional modelling to be undertaken for PLR will be used to update the flooding predictions used in the CRA.	!
Risk definition	As the initial CRA covered the full project scope, some risk descriptions may be modified to more clearly indicate the confirmed scope, and the contractor best placed to manage/mitigate through design, construction and operation. New risks will be added as they are identified.	!
Current controls accurate	Current controls may be amended or further developed to ensure their thoroughness, accuracy and relevance, including responsibilities	!
Risk ratings (initial and residual)	Risk ratings will be reviewed and amended to ensure consistency and accuracy	!
Adaptation measures	Adaptation measures may be added, amended or further developed to ensure their thoroughness, accuracy and relevance, including responsibilities.	!

Climate Change Impact Assessment Report

A Climate Change Impact Assessment Report will be updated and submitted at each design stage. Table E2 outlines the information that will be provided in the report.

Table E2: CRA Report summary

Report component	Details
Climate Data and Project Assets	▪ Relevant historical weather events that have impacted the project site to inform the project baseline; ▪ Relevant climate variables and data sources for at least two different time periods; and ▪ Tabulated breakdown of key project components relevant to the project time period.
Scope and Engagement	▪ Identification of assessment boundaries and scope of works; and ▪ List of project personnel providing input into the development of the risk statements.
Risk Assessment Approach and Assessment	▪ A summary of risk assessment parameters applied; ▪ A summary of the total number of climate risks identified for the project and breakdown of 'extreme/very high', 'high', 'medium' and 'low' risks for all time periods assessed; ▪ Discussion regarding the risk tolerance and level of acceptability to be provided for all 'extreme/very high' and 'high' risks, and at least 25% of all 'medium' risks; and ▪ A copy of the project's climate risk statements.
Adaptation and Residual risk ratings	▪ Summarises the adaptation actions identified for all 'extreme/very high' and 'high' risks, and at least 25% of 'medium' risks; ▪ Adaptation actions within the risk assessment table to be included in the report appendices; ▪ Summary of how the adaptation actions identified will reduce the residual risk ratings; and ▪ Inclusion of residual risk rating with the risk assessment table included in the report appendices.

Appendix F – Infrastructure Sustainability Rating Management Plan Template

Infrastructure Sustainability Rating Management Plan

{Insert Rating Type here}

{Insert project/asset name here}

Dated:

20th March 2018

Version:

Final

Prepared by:

{Insert Company Name} in collaboration with the

Infrastructure Sustainability Council of Australian Pty Ltd

Suite 6.03, 220 George Street

SYDNEY NSW 2000

{Insert Logo/s here}

{Insert logo/s here}

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{Instructions in Green highlights – these need to be deleted

{Places to review and replace text in Yellow highlights}

Document Control

Version	Date	Prepared	Reviewed and Revised	Approved
				Project Director

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Key Contacts

Project Registrant Contact (insert Organisation)

Name:

Address:

Phone:

Mobile:

Emails:

Project Proponent Contact (insert Organisation)

Name:

Address:

Phone:

Mobile:

Emails:

Project Director (insert Organisation)

Name:

Address:

Phone:

Mobile:

Emails:

IS Project Assessor (insert Organisation)

Name:

Address:

Phone:

Mobile:

Emails:

ISCA Case Manager (Infrastructure Sustainability Council of Australia)

Name:

Address: Suite 6.03, 220 George Street, Sydney 2000

Phone: +61 2 9252 9733

Mobile:

Email:

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{Insert logo/s here}

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Table of Contents

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1. Introduction

1.1. ISCA and the IS rating scheme

ISCA is a member based industry association committed to the delivery of more sustainable outcomes from the design, construction and operation of Australia's infrastructure.

The IS rating scheme for infrastructure is developed and administered by ISCA. The IS rating scheme is a comprehensive rating system for evaluating sustainability across planning, design, construction and operation of infrastructure.

The IS rating scheme is comprised of:

- The Infrastructure Sustainability (IS) rating tool, incorporating:
    - IS Scorecard
    - IS Materials Calculator
    - IS Technical Manual (available through training or registered projects/assets)

The IS rating scheme consists of the following sustainability themes and categories:

Themes	Categories
Management and Governance	Management Systems
	Procurement and Purchasing
	Climate Change Adaptation
Using Resources	Energy & Carbon
	Water
	Materials
Emissions, Pollution and Waste	Discharges to Air, Land & Water
	Land
	Waste
Ecology	Ecology
People and Place	Community Health, Well-being and Safety
	Heritage
	Stakeholder Participation
	Urban & Landscape Design
Innovation	Innovation

Each of these themes and categories should be addressed throughout the delivery of this project.t

1.2. Purpose of the IS Management Plan

Optional text to be included

The purpose of this management plan is to facilitate the management and implementation of an IS Design/As Built rating on x project/asset

The objectives of this management plan are to:

- Outline the approach to applying the IS rating tool on {project name}...
- Describe and facilitate planning towards key IS timing and milestone requirements on the project.
- Outline ISCAs role and specific support requirements for the duration of the rating process.
- Assign responsibility and key tasks associated with achieving the IS rating.

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1.3. IS Rating Objectives

The objectives for pursuing an IS rating are:

- List

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2. Project Description

2.1. General

Include general information about the project. This should include some information on location, context, size, infrastructure type.

2.1. Project Program

Include detail on the project program including key procurement and delivery milestones.

2.2. IS Rating Scope and Boundaries

Include any relevant information that might influence the IS rating scope and boundary. i.e. packages of works, works included and works excluded etc.

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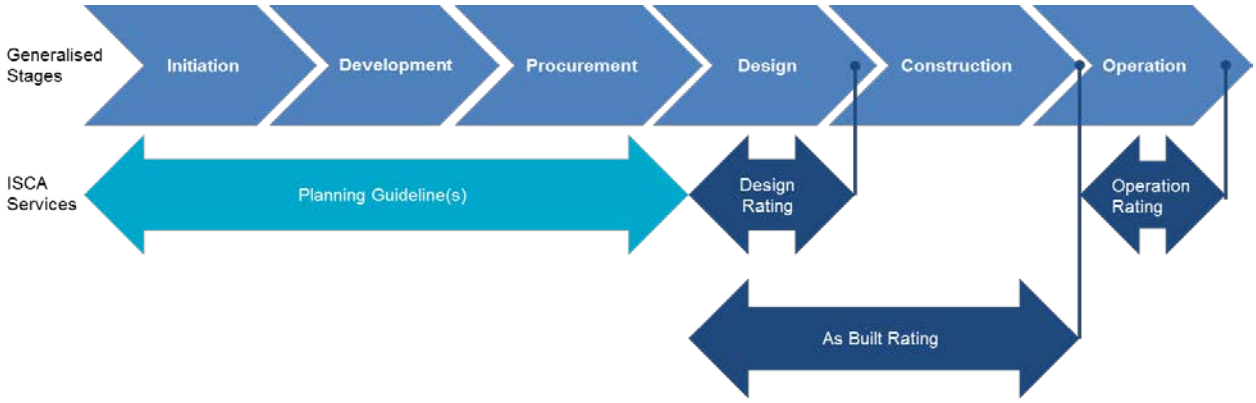
3. IS Rating Process

Across the infrastructure lifecycle, there are a number of ways that the IS rating scheme is currently being applied:

1. Design, Construction and Operation: Infrastructure projects or assets can use the IS rating tool as a performance management tool to integrate sustainability through registering, assessing and then verifying and certifying a rating through ISCA. Projects can be currently certified for Design, As Built and Operation ratings.
2. ISCA encourages the use of the IS rating tool to improve the sustainability of planning, design, construction and operation of all infrastructure projects and assets. IS can be informally applied to assess the sustainability of all projects without registering and seeking verification.
3. Planning: The IS rating tool is also used as a sustainability framework and decision support tool for projects at the various stages of infrastructure planning to assist with integrating applied sustainability from business to case to project procurement stages.

Application of the IS rating tool in design, construction and operation of infrastructure is through 1 (above) and is primarily through pursuit of certified IS ratings. Application in the planning phases (2 above) will be supported by the 'IS Planning Guideline' which is available to download for free from the ISCA website. The infrastructure stages intended to be covered by the guideline(s) and how these relate to the current rating types are illustrated below:



3.1. Design and Construction Phases

The below diagram outlines the process for completing an IS rating. The diagram includes required activities from Registration through to Certification.

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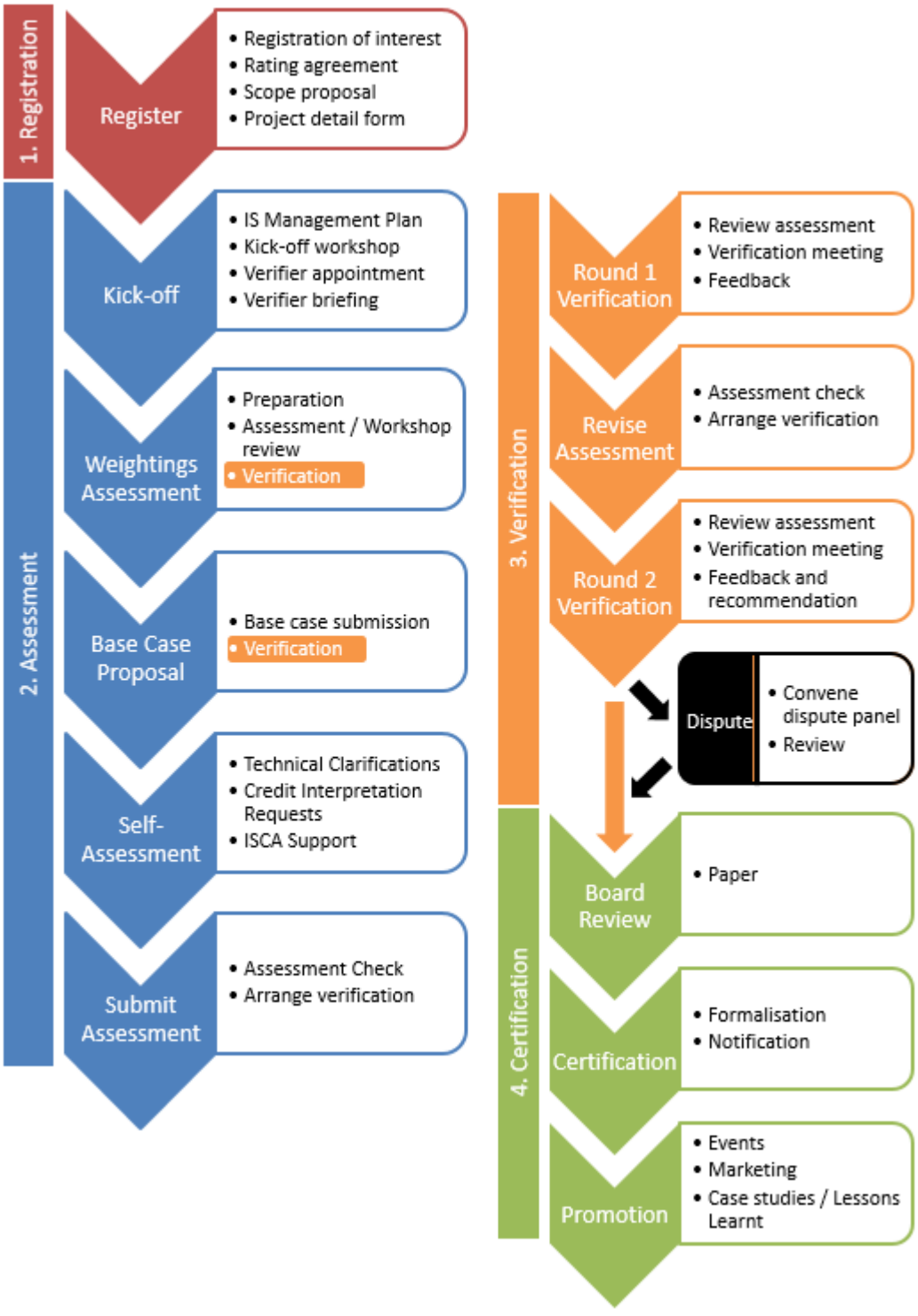
1. Registration
Register
• Registration of interest
• Rating agreement
• Scope proposal
• Project detail form
2. Assessment
Kick-off
• IS Management Plan
• Kick-off workshop
• Verifier appointment
• Verifier briefing
Weightings Assessment
• Preparation
• Assessment / Workshop review
• Verification
Base Case Proposal
• Base case submission
• Verification
Self-Assessment
• Technical Clarifications
• Credit Interpretation Requests
• ISCA Support
Submit Assessment
• Assessment Check
• Arrange verification
3. Verification
Round 1 Verification
• Review assessment
• Verification meeting
• Feedback
Revise Assessment
• Assessment check
• Arrange verification
Round 2 Verification
• Review assessment
• Verification meeting
• Feedback and recommendation
Dispute
• Convene dispute panel
• Review
4. Certification
Board Review
• Paper
Certification
• Formalisation
• Notification
Promotion
• Events
• Marketing
• Case studies / Lessons Learnt

3.2. Procedures and Forms

Relevant procedures and forms are presented in the below table. All procedures and forms are available within the appropriate assessment folder in the rating site on SharePoint.

Phase	Primary Procedure	Secondary Procedures	Relevant forms/templates
Registration	Registration Procedure		Rating Agreement
			Scope Proposal Form
			Weightings Assessment
			Rating Profile template
			IS Management Plan
Assessment	Assessment Procedure		Kick-off agenda template
		Base Case establishment procedure	Base Case proposal form
		Technical Clarifications (TC) and Credit Interpretation Requests (CIR) procedure	TC Form CIR Form
			Case Study template/s
Verification	Verification Procedure		Credit Summary Form (pre-populated for use in self-assessment for verification)
			Scorecard for verification
Certification	Certification Procedure		Certification form
			Communication Plan / Key messages

4. Governance

4.1. Sustainability Policy

Include the existing project sustainability policy. If there is no project sustainability policy the corporate sustainability policy should be included and it should be clearly stated that this policy applies to the project.

4.2. Sustainability Strategy (as appropriate)

Include any relevant information about other sustainability strategies/management plans or systems which will influence the implementation of sustainability on this project.

4.3. Roles and Responsibilities

Below is some optional text which could be included in the roles and responsibilities section. ISCAs support role should be clearly outlined in this section to enable the Case Manager to better support and assist the project/asset team where required. It also allows ISCA to manage resources throughout the rating process.

It may not be necessary to include a name

Role	Name	Responsibility
IS Assessor	xx	• Principal point of contact for ISCA in relation to the IS rating process. • Is an IS Accredited Professional (ISAP) (preferred) • Part of the project/asset management team. • Provides sustainability advice. • Has ongoing involvement in the project including during design and construction phases (note that these responsibilities could be transferred between individuals/organisations). • Has a detailed understanding of the IS rating process and can support the management team to understand the key aspects and milestones. • Monitors and reviews progress towards IS rating achievement. • Accountable for review and approval of readiness of documentation for verification.
ISCA Case Manager	xx	• Provides technical support to the assessor and project/asset management team during the IS rating process. - Advice regarding the IS rating tool, IS rating process and information contained within the IS Technical Manual - Attendance at regular progress meetings - Facilitating workshops/forums with various members of the project/asset management team - Review and advice on Weightings Assessment, Base Case, and TCs/CIRs - Advice regarding the self-assessment submission and evidence requirements • Manages the formal verification and feedback processes.
IS Verifiers	xx	• Industry experts nominated by ISCA from a verification panel. • Independently verify the Weightings Assessment, Base Case and self-assessment of the project/asset using the IS rating tool. • Make a recommendation for the Design and/or As Built ratings for the project/asset.

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5. Management

5.1. SharePoint (Information exchange)

All IS related information should be accessed through a rating SharePoint site. All relevant procedures and forms are contained within the relevant 'Assessment' folder within each rating site. The rating site should also be used by the Assessor to submit their self-assessment when they are ready for Verification.

ISCA establishes a rating site for each registered project. This rating site is secure and is only accessible by ISCA staff and other invitees. ISCA are the managers of this site and have administrative control. Invitations will be sent to the Assessor (plus others when requested by the Assessor) and the two rating Verifiers. The Assessors and Verifiers both have different access permissions.

To access the site, the invitees will receive an email invitation from their Case Manager. If they follow the link on the email it should take them to a login page through Office365. To access the site they must have an Office365 login and password. If they do not have one they will need to make one. Once they have logged into the site they should be able to see a SharePoint site and one folder called 'Assessment'.

5.2. Progress Meetings

Include any information about progress meetings that will be regularly scheduled with some or all of the following key IS stakeholders:

- ISCA
- In-house project team
- External advisors/consultants
- Etc.

5.3. Training

Include any training requirements for delivery of the project. This might include provisions for project personnel to undertake the IS Training for Professionals, Intro to IS, or IS for Project Managers (optional text included)

IS Training

The project has committed to having at least 2 IS Accredited Professionals involved as part of the project team at all times.

The IS Training for Professionals is facilitated by ISCA and will enable participants to have a good understanding of the IS rating scheme and be able to assess projects/assets using the IS rating tool. By attending the two-day course, people will:

- Learn how to apply IS tool to project/assets
- Achieve a better understanding of infrastructure sustainability
- Connect with like-minded individuals in the infrastructure industry
- Learn how to evaluate sustainability performance of projects/assets

5.4. Knowledge Sharing

Include information on knowledge sharing requirements for the project. This might include the identification of case studies / good news which ISCA can help to promote. Management objectives could be set around monthly information sharing sessions where a story/case study is submitted to ISCA to upload in the Knowledge Hub or on their news section of the website.

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5.5. Timing

Milestone	Activity	Agreed Timing
Registration	Approve rating profile for ISCA rating directory	
Assessment	Kick-off workshop	
	Submit Weightings Assessment and Base Case for verification	
	Submit Technical Clarifications and Credit Interpretation Requests for review and endorsement	
Verification	Submit round 1 self-assessment	
	Submit round 2 self-assessment	
Certification	Certification	
	Lessons learnt workshop	

6. Implementation

{Some optional headings for this section}.

This section of the management plan will describe the key implementation activities which the project team is using to implement the IS rating scheme.

6.1. Weightings Assessment

(If relevant) present information/detail on the verified Weightings Assessment

Relevant documents are presented in appendix x.

6.2. Base Case

(If relevant) present information/detail on the verified Base Case

Relevant documents are presented in appendix x.

6.3. Preliminary Self-Assessment

A preliminary self-assessment has been/will be completed to understand the IS rating score which might be achieved by this project.

The outcomes of this assessment showed that ……

The outcomes of this preliminary self-assessment has been presented in appendix x.

6.4. Credit Allocation / Share Responsibility

Include a description of any credit allocation/shared responsibility analysis completed following the preliminary self-assessment. This might include ownership of some credits once the contractor has been awarded, submission of some documents to ISCA to support the assessment submission, or submission of some documents to the contractor for inclusion in their assessment submission. Etc.

Relevant documents are presented in appendix x.

6.5. Technical Clarifications and Credit Interpretation Requests

(If relevant) present any information related to TCs/CIRs which might have been submitted for verification.

Relevant documents are presented in appendix x.

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7. Business Case Capture

The relationship between project or business excellence and sustainability is not always clear or well understood. It is therefore inherently valuable to track the costs and benefits associated with use of the IS rating tool. This will help with decision making and implementation of specific initiatives and to establish the overall costs and benefits (i.e. business case) for applying IS and the generation of case studies throughout the process.

ISCA encourages tracking of both quantitative and qualitative costs and benefits associated with applying the IS rating tool. The following table provides a framework for collecting and reporting costs and benefits. (This could be attached as an appendix rather)

Active tracking should be undertaken using the Spreadsheet incorporating the below Business Case Capture table.

	Costs				Savings/Benefits	
	Description			$	Description	$
ISCA rating fees						
Assessment costs:		**hrs**	**$/hr**			
Assessor time						
Preparation and assessment submission						
Rating facilitation						
Others time						
Other costs						
Initiatives investigated/pursued:						
Management and Governance						
Energy						
Water						
Materials						
Other resources						
Emissions and pollution						
Waste (reduction)						
Ecology						
Stakeholder engagement						
Community						
Social licence / reputation						
Innovation						
Tendering						
Risk management						
TOTAL						
Cost-Benefit Analysis:						
What is the overall cost-benefit of applying IS (benefit-cost)?						
BCR (benefit/cost)?						
Do you have any cost-benefit case studies for specific initiatives?						

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8. Reporting and Review

Include any required reporting and review requirements. These requirements could also be linked to IS credits where reporting and review are required. E.g. Man-5 reporting and review

Stakeholder	Report Type	Frequency	Description

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9. Communication

Include key points from the communication plan here and refer to the IS Communication Plan for full details.

Also provide a requirement the project will connect the organisations communication manager with the ISCA Engagement Manager.

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Appendix G – Environmental Product Declaration for Urbos 100 Tram for the City of Zaragoza

EPD®

URBOS 100

for the City of Zaragoza

Environmental Product Declaration
according to ISO 14025

Technological Innovation in support of the **environment** to reach further with **less power consumption**. Based on a **catenary-free** innovative operating system, **Urbos 100** conforms to the strictest **environmental requirements**, for perfect integration in architectural environments while maintaining **high running performance**.

A new generation of train that guarantees maximum power-efficiency and full passenger ride comfort. **Versatile, with Personality and Environmentally Friendly.**

Environmental Product Declarations Programme:
The international EPD® System
operated by EPD International AB
www.environdec.com

Independent verification of the declaration and data,
according to ISO 14025:2006:
☐Internal ☒External

Third Party Verifier:
Marcel Gómez Ferrer
www.marcelgomez.com
LCA study: Instituto Tecnológico de Aragón
www.itainnova.es

Registration number S-P-00284 V 2.0 / Date: 2015.03.05
Valid until 2018.03.05
UN CPC 495

EPDs within the same product category but from different programmes may not be comparable.

PCR review was conducted by:
The Technical Committee of the International EPD® System
Chair: Massimo Marino
Contact via info@environdec.com

CONSTRUCCIONES Y AUXILIAR DE FERROCARRILES S.A.

CAF COMMITMENT

Railways and the environment. On track to efficiency.

CAF, CONSTRUCCIONES Y AUXILIAR DE FERROCARRILES, S.A. is an international leader in the in the design, manufacture, maintenance and supply of equipment and components for railway systems across the globe. The company was founded at the beginning of the 20th century and initially served primary industries in Northern Spain. Since then the company has grown into the international company it is today with over 7,000 qualified professionals, over 25% of whom are degree qualified. The company holds onto its roots with the company headquarters still being in the original site at Beasain.

This education level combined with a commitment to R+D+I and the know-how built up from over 100 years of experience has meant that CAF has continued to lead and innovate their own state-of-the-art technology, which has significantly improved efficiency, safety and comfort of its products and of the sector itself. This technology includes solutions such as the GREENTECH energy efficiency family with the EVODRIVE kinetic energy recovery system, the FREEDRIVE for catenary-free running, or the EDRIS energy consumption controller, and others for the control of fleets and their maintenance such as AURA, NAOS for traffic and energy control, together with AURIGA the ERTMS wayside and onboard system of the CAFs group.

CAF integrates Corporate Social Responsibility into the company's general policy and is fully aware of the potential impact of industrial activities on the environment. For this reason the organisation includes Environmental protection as one of its primary objectives.

CAF's environmental management is aimed at controlling and minimizing environmental impact from emissions into the atmosphere, residues and energy consumption, with the principle aim of preserving natural resources. To achieve this CAF has implemented a sustainability function into the production processes, making the most of natural resources and generating energy via renewable methods. The CAF group operates photovoltaic solar, small scale wind and sustainable mobility business; with a hydro-electric plant and photovoltaic panels at their facilities to meet the energy requirements: The implemented environmental management system has been certified in accordance with ISO 14001 since 2001.

In order to provide more efficient and more environmentally friendly means of transport, CAF is currently implementing the "Product Sustainability Function", introducing eco design methods in the engineering processes to optimise and control the environmental impact of products throughout their entire operating cycle.

As a result of this effort, CAF has developed this **world's first verified EPD®** of a tram: The **Urbos Tram for the city of Zaragoza**.

ZARAGOZA TRAM

The Zaragoza tram is a passenger urban transport vehicle belonging to the third generation Urbos redesigned to improve maintenance ease and lightness, reducing the consumption of both resources and energy during its entire operating life.

In 2009, CAF was awarded the production and delivery of 21 URBOS trams for the city of Zaragoza. These are 100% low floor and consist of 5 modules each. The units are fitted with an on-board energy storage system (ACR) which permits both catenary free LRV travel between stops, and energy saving via maximum braking energy recovery. The first unit was set into service in April, 2011.

The Zaragoza Tram Project was awarded “Best project in the world” in the “Light Rail Awards 2012”.

Technical Data

Composition	Mc-S-T-S-Mc
Train length (mm):	32.314
Maximum speed (km/h)	70

Equipment

Cab air conditioning
Passenger saloon air conditioning
Audio and visual information for passengers
Events recorder (black box)
Control and supervision system
On board passenger counting system
Video surveillance ACR

FREEDRIVE OPERATION

1. The vehicle starts running with the Freedrive system fully charged.

2. Between the stops the Freedrive system supplies energy to the traction system.

3. The kinetic energy generated during the braking phase is recovered in the Freedrive system starting the recharge process.

4. When the vehicle arrives at the stop, the Freedrive system is fully charged.

CAF Power & Automation GREENTECH FREEDRIVE
Free catenary movement

This is an on-board energy storage system which permits dispensing with the overhead electric lines (catenary) between stops in urban environments. The Rapid Charge Accumulator (ACR) is a groundbreaking technology, entirely unprecedented in revenue service, which contributes to improved integration of urban transport in the cities, reducing visual impact in heritage districts and increasing energy efficiency.

Accessibility

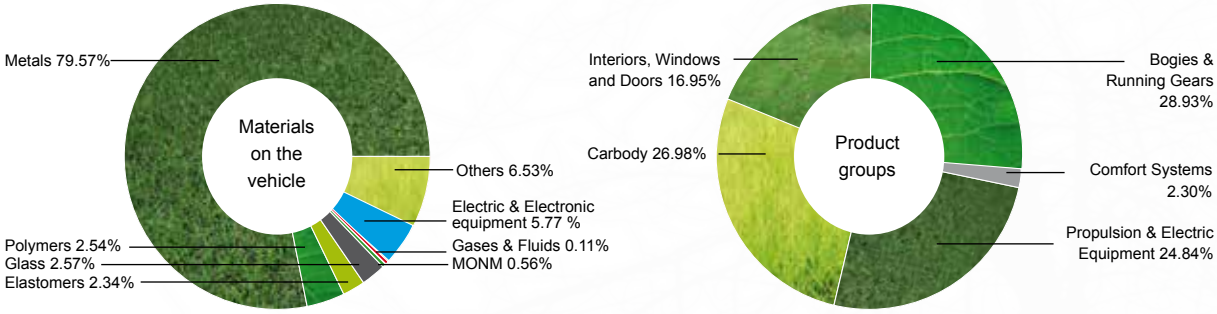
The Zaragoza tram has been carefully designed, in collaboration with persons with reduced mobility collectives, achieving a paramount comfort level for all passengers. The tram floor is low along the whole passenger saloon. In this way, the existing barriers are eliminated along the whole LRV and the entry and exit of passengers from platforms located at the level of the sidewalk is extremely comfortable.

LIST OF MATERIALS

In the design of the Urbos 100 for the City of Zaragoza, materials have been selected according to the functional, technical and regulatory requirements, as well as considering their recyclability and ease of dismantling at the end of their operating life. The following table shows the summarised inventory of the tram materials.

Materials Used	Carbody	Interiors, Windows and Doors	Bogies and Running Gears	Propulsion and Electric Equipment	Comfort Systems	TOTAL
Metals	23,84%	10,38%	28,34%	14,94%	2,07%	**79,57%**
Polymers	0,01%	0,43%	0,09%	2,00%	0,01%	**2,54%**
Elastomers	0,92%	0,80%	0,37%	0,25%	0,01%	**2,34%**
Glass	0,00%	2,52%	0,01%	0,04%	0,00%	**2,57%**
Gases & Fluids	0,01%	0,00%	0,01%	0,09%	0,00%	**0,11%**
MONM*	0,00%	0,56%	0,00%	0,0018%	0,00%	**0,56%**
Electric & Electronic equipment	0,00%	0,11%	0,00%	5,67%	0,0014%	**5,77%**
Others	2,21%	2,15%	0,11%	1,86%	0,21%	**6,53%**
TOTAL	**26,98%**	**16,95%**	**28,93%**	**24,84%**	**2,30%**	**100,00%**

* Modified organic natural materials



Values in % with respect to the vehicle total mass

In accordance with their policy, CAF meets the environmental requirements right from the very first stages of their projects. The use of materials related to high environmental impact values has been reduced to the bare minimum. Those materials which may involve a risk and which cannot be avoided using current technology are taken into account and controlled during the design and development stages.

PRODUCT ENVIRONMENTAL IMPACT

Noise

The main sources of noise emission involve the effects of the rolling gear, the HVAC unit and the vehicle's traction equipment. In accordance with standard ISO 3095, the unit's exterior noise emission is as follows:

Noise	dB(A)
Standstill	59
Constant Speed (40 km/h)	71

Energy Consumption

Energy consumption during operation has been calculated based on a simulation coherent with the reference document TecRec 100:001. Specification and verification of energy consumption for railway Rolling stock. and takes account of the route, timetables and frequency of the line the vehicle has been designed for (Valdespartera – Parque Goya), as well as its mechanical, electrical and auxiliary system characteristics. The considered vehicle occupation is for 200 passengers, corresponding to an occupied seat arrangement and 3.5 passengers/m2 of standing passengers in the assigned areas.
The energy consumption results are calculated with catenary reception extreme values. Two possible scenarios are considered: One where the required energy during braking is regenerated on the catenary (100% receptivity) and another where all the energy is dissipated (0% receptivity).

Manufacturing Phase
Electric Consumption (kWh)

By Functional Unit	0.0133

Use Phase
Electric Consumption (kWh/Km)

0% Receptivity	4.22
100% Receptivity	3.93

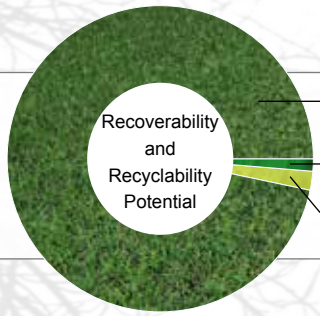
**The electric consumption for an average passenger ride, 2 km, is equivalent to approximately 2 and a half minutes of clothes ironing, 10 songs played on a stereo, or 6 minutes of playing videogames.*

POTENTIAL RECOVERABILITY AND RECYCLABILITY PROFILE

As a result of the studied design and modularity used during assembly and dismounting, high recyclability and recoverability potential ratios are achieved at the end of the trams' operating lives which, in accordance with UNI-LCA-001:00, are:

TZ Recoverability and Recyclability Potential

Recyclability Rate	93.0%
Recoverability Rate	98.6%



ENVIRONMENTAL PROFILE OF THE PRODUCT LIFE CYCLE

Environmental profile for the functional unit [1pass.1km]	Material and Component Production [UPSTREAM]	Transport and vehicle assembly [CORE]	Vehicle use [DOWNSTREAM]				TOTAL	
			Energy consumption		Maintenance and Consumables	End of Life	0% Receptivity	100% Receptivity
			0% Receptivity	100% Receptivity				
RENEWABLE RESOURCES CONSUMPTION								
Materials [kg/ pass.km] (TOTAL)	1,86E-05	5,62E-06	4,34E-10	4,05E-10	1,80E-06	6,88E-09	2,60E-05	2,60E-05
Wood	5,98E-06	1,97E-06	1,53E-10	1,42E-10	5,50E-07	2,22E-09	8,51E-06	8,51E-06
Carbon dioxide	1,24E-05	3,65E-06	2,81E-10	2,62E-10	1,22E-06	4,65E-09	1,73E-05	1,73E-05
Peat	1,56E-07	3,69E-10	1,41E-14	1,31E-14	3,25E-08	1,39E-11	1,89E-07	1,89E-07
Water use (*) ([l/pass.km]	2,13E-02	2,36E-03	1,70E-07	1,58E-07	1,13E-03	1,37E-05	2,48E-02	2,48E-02
Energy [MJ/ pass.km] (TOTAL)	5,43E-04	2,24E-04	3,54E-02	3,30E-02	6,63E-05	5,59E-07	3,39E-02	3,16E-02
Hydropower	1,87E-04	7,70E-05	1,22E-02	1,13E-02	2,28E-05	5,27E-07	1,25E-02	1,16E-02
Windpower	2,52E-04	1,04E-04	1,64E-02	1,53E-02	3,08E-05	2,38E-08	1,68E-02	1,57E-02
Solar energy	5,78E-05	2,38E-05	3,77E-03	3,51E-03	7,06E-06	3,83E-09	3,86E-03	3,60E-03
NON RENEWABLE RESOURCES CONSUMPTION								
Materials[kg/ pass.km] (TOTAL)	3,60E-04	4,35E-06	2,25E-07	1,86E-10	1,17E-04	2,68E-06	4,84E-04	4,84E-04
Gravel	1,47E-04	2,19E-06	1,33E-10	1,24E-10	9,32E-05	2,31E-06	2,45E-04	2,45E-04
Calcite	7,91E-05	8,59E-07	3,84E-11	3,57E-11	6,50E-06	5,64E-08	8,65E-05	8,65E-05
Iron	4,82E-05	8,91E-07	1,53E-11	1,43E-11	1,38E-05	5,70E-08	6,30E-05	6,30E-05
Energy[MJ/ pass.km] (TOTAL)	6,80E-04	2,80E-04	4,44E-02	4,13E-02	8,30E-05	9,58E-07	4,62E-02	4,17E-02
Coal	1,62E-04	6,69E-05	1,06E-02	9,85E-03	1,98E-05	1,19E-07	1,08E-02	1,01E-02
Nuclear	2,41E-04	9,94E-05	1,57E-02	1,46E-02	2,94E-05	6,13E-07	1,61E-02	1,50E-02
NG Combined Cycle	1,24E-04	5,09E-05	8,06E-03	7,50E-03	1,51E-05	1,07E-07	8,25E-03	7,69E-03
WASTE [kg/ pass.km] (TOTAL)	2,85E-07	3,78E-06	1,45E-12	1,35E-12	7,57E-05	4,86E-06	8,46E-05	8,46E-05
Hazardous	2,11E-07	2,96E-06	1,03E-12	9,58E-13	0,00E+00	2,36E-07	3,41E-06	3,41E-06
Non Hazardous	7,45E-08	8,22E-07	4,22E-13	3,93E-13	7,57E-05	4,63E-06	8,12E-05	8,12E-05
ENVIRONMENTAL IMPACT [/pass.km]								
Global Warming Potential (kg CO2-Eq)	6,83E-04	8,93E-05	6,89E-03	6,43E-03	7,35E-05	2,18E-06	7,74E-03	7,28E-03
Acidifiying Potential (kg SO2-Eq)	5,53E-06	4,94E-07	4,67E-05	4,35E-05	5,79E-07	9,20E-09	5,33E-05	5,01E-05
Eutrophication Potential (kg PO4 -3 -Eq)	4,16E-06	4,78E-08	1,00E-05	9,36E-06	1,99E-07	2,09E-09	1,44E-05	1,38E-05
Photochemical Ozone Creation Potential (kg C2H4-Eq)	3,19E-07	2,04E-08	1,82E-06	1,70E-06	3,75E-08	3,38E-10	2,19E-06	2,07E-06
Ozone Depletion Potential (kg CFC-11-Eq)	6,14E-10	1,19E-11	8,01E-10	7,47E-10	2,69E-10	2,68E-13	1,70E-09	1,64E-09

(*) except the use in hidroelectric power generation

The quality of the compiled data has been analysed with a Pedigree Matrix analysis (Pedigree Matrix - Weidema and Suhr Wesnaes, 1996). It has been verified that the quality of the data is “extremely high” in the CAF train assembly process and in the Urbos AXL composition, and it is “high” quality for the environmental assessment basis data.

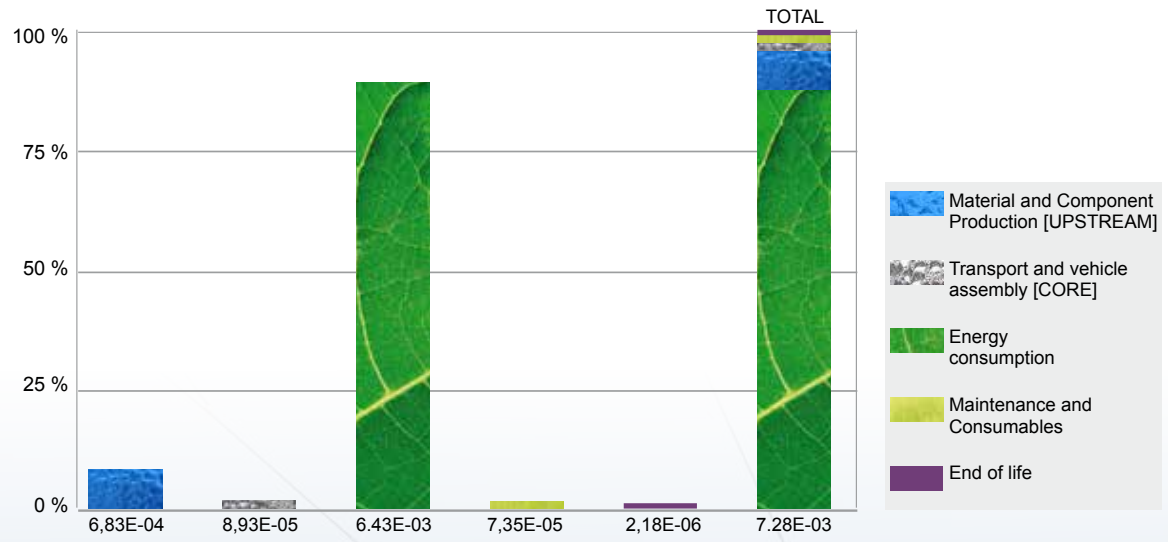
ENVIRONMENTAL PROFILE OF THE PRODUCT LIFE CYCLE

Under a Life Cycle approach, cost and environmental impacts reduction of the operation use have been core targets of the Urbos platform design process. Low specific energy consumption per passenger has been achieved, thanks to the lightness and large capacity of the train, together with a low consumption of maintenance materials, as a result of the reliability and durability of the components, and the modularity and standardisation of the solutions employed.

Consumption during use, particularly energy consumption during the 30 years of operating life, causes the main environmental effects of an Urbos tram, as shown in the adjoining graph which uses the reference environmental indicator "Global Warming Potential", for a 100% catenary receptivity scenario.

The ACR on board energy storage system allows for a reduction of energy consumption during operation of the tram and minimises the difference of impacts between the extreme receptivity scenarios. In this way, the tram units fitted with this system are much less sensitive to the availability of the catenary for receiving energy and therefore, the energy consumption during the use stage is less than on vehicles which are not fitted with this technology.

Total Global Warming Potential (kg CO2 eq.)



"In 2010 Spanish CO2 emissions were 5.8 metric tons per capita. (Source: http://data.worldbank.org)"

INFORMATION ABOUT THE ENVIRONMENTAL DECLARATION

This environmental declaration was made following the requirements of the reference document “PCR 2009:05 Version 2.11 Product category rules for preparing an environmental product declaration for Rail Vehicles. UNCPC CODE: 495” published by Environdec (www.environdec.com) and is based on the data of the URBOS 100 tram units for the City of Zaragoza, for all the stages of the product’s life cycle (production of raw materials and components, assembly of the vehicle, distribution, use and end of life). The functional unit in this study is the transport of 1 passenger over 1km and the operating life of the vehicle analyzed has been set at 30 years.

The Urbos 100 environmental impact study has been quantified by means of an Life Cycle Analysis in accordance with standards ISO 14040 and ISO 14044. The method of the characterization of the environmental impact of the compiled operating life inventory was CML 2001. Information regarding the materials and production of the vehicle has been obtained directly from the Management Systems of CAF and the information provided by the suppliers themselves. Data from the Ecoinvent database (version 2.0) has been used for the environmental definition of the processes and materials. Those processes not available in Ecoinvent database were generated using first hand data.

For vehicle assembly, the effect of the procurement of materials and components making it up have been considered, as well as the transport of materials (over 80% of the tram weight) to the assembly plant, the assembly itself, handling of the waste from both the assembly and dismantling of the vehicle and the transport of the vehicle from CAF’s Zaragoza plant to Valdesparatera depot during year 2009.

For the environmental impact of the energy consumption during assembly, the 2009 Spanish electricity production mix has been taken into account, with data provided by the Spanish Ministry for Industry. For environmental impact characterization of the energy consumption during use phase an average of 66,500 km per year has been considered and electricity mix supplied for operation during year 2013 has been considered.

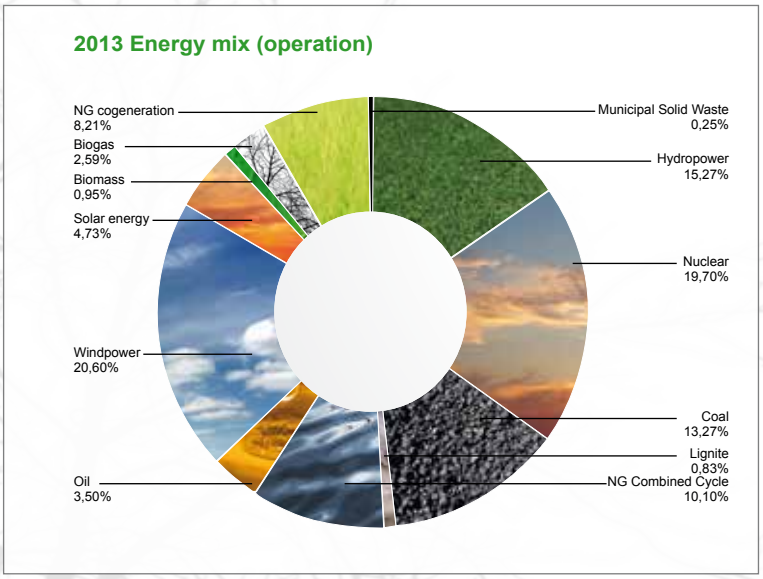
The maintenance of the train has been considered for the entire operating life, with inventories for the materials and spare parts of a Life Cycle Cost (LCC) of Urbos 100 study, including operation related consumables, such as traction sand or brake pads, but not those involved in train cleaning operations or passenger waste treatment and disposal.

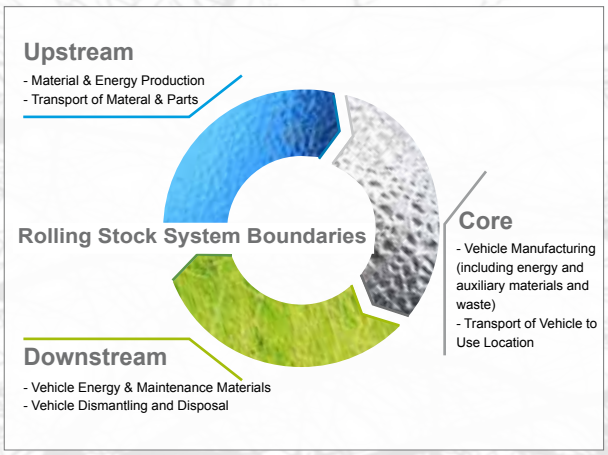
In the end of life, and vehicle dismantling stage, has been modelled according to UNI-LCA-001:00 Railway Rolling Stock - Recyclability and Recoverability Calculation Method (89.4% recyclability / 92.7 % recoverability). The potential advantage of recycling and recovery of the energy from incineration processes has not been accounted for in the study.

Reference Documentation

- ISO14040:2006. Environmental management. Life cycle assessment. Principles and framework.
- ISO14044:2006. Environmental management. Life cycle assessment. Requirements and guidelines.
- ISO 14025:2006 Environmental labels and declarations. Type III environmental declarations. Principles and procedures.
- PCR 2009:05. Product category rules for preparing an environmental product declaration for Rail Vehicles.
- General Programme Instructions for environmental product declarations, EPD, version 2.1
- ISO 22628:2002. Road vehicles. Recyclability and recoverability. Calculation method.
- TecRec 100:001. Specification and verification of energy consumption for railway Rolling stock.
- EN 15663:2009. Railway applications. Definition of vehicle reference masses.
- ISO 3085. Railway applications - Acoustics - Measurement of noise emitted by railbound vehicles.
- Railway Industry Substance List, (www.unife-database.org).
- UNI-LCA-001:00 Railway Rolling Stock - Recyclability and Recoverability Calculation Method.

DEFINITIONS:





Acidification (potential):

Acidification results from the emission of sulphur dioxide and nitrogen oxides. In the atmosphere, these oxides react with the existing steam, forming acids which fall back to the earth in the form of rain or snow, or as dry deposits. Its effect on the earth generally shows itself in the form of reduced forest development and in aquifer ecosystems, such as lakes, acidification is apparent in the disappearance of some living organisms. Other objects such as constructions, monuments and buildings may also be damaged as a result of the effects of acid rain. Acidification potential measures an emitting substance's contribution to acidification expressed in sulphur dioxide equivalents (SO2).

Eutrophication (potential):

Eutrophication results in the enrichment of water ecosystems with organic compounds and nutrients, which give rise to an increased production of plankton, algae and other water plants with the resulting reduction in water quality. In this case the main sources related to this phenomenon are nitrogen and phosphorous. A secondary effect is the decomposition of dead organic material, a process which consumes oxygen and may result in anaerobic environments. The eutrophication potential, expressing in equivalent PO-43, quantifies nutrient enrichment via the release of a substance in water or land.

Global Warming (potential):

Greenhouse effect emissions into the atmosphere absorb some of the infrared solar radiation reflected on the earth's surface resulting in a troposphere temperature increase. The global warming potential is an index, in equivalent kg of CO2, to measure the global warming contribution of a substance released into the atmosphere in a span of 100 years.

Ozone depletion (potential):

The ozone layer in the atmosphere protects the flora and fauna from harmful ultraviolet radiation from the sun. Some substances emitted into the atmosphere deplete this layer resulting in a higher level of UV radiation on the earth. The ozone layer depletion potential is the contribution of a substance compared with the impact caused by CFC-11.

Ozone photochemical formation/ Photochemical oxidation (potential):

The photo-chemical formation of the ozone in the troposphere is mainly provoked by the decomposition of volatile organic compounds (VOCs) in the presence of nitrogen oxides (Nox) and light. The formation of ozone by means of this process can be quantified by using the so-called ozone photo-chemical formation potentials (POCPs) expressed in equivalent kg of ethane (C 2H4).

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[redacted]

[redacted]

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Appendix H – Project Decision Making Framework

Decision Making Framework

1.1.1 Introduction

As described in section 8.4 above, a formal decision making process must be adopted for the project to enable all significant project decisions from an early stage to be reviewed against qualitative and quantitative sustainability criteria.

This Significant Decision Making Framework has been developed to define what is considered a "Significant" Project Decision and detail the Projects Decision Making Process.

1.1.2 What is a "Significant Decision"

For the PLR SOM Project, a significant issue is considered to be one that has a substantial implication for project cost, schedule or community/environmental impact.

For the purpose of this framework a Significant Decision to address these issues has been defined as the following:

1. A decision made by, or requiring the endorsement of the Senior Leadership Team (SLT)
2. A Major Design Change (requiring approval of the Senior Engineering Manager or Project Director)
3. Major Departures from Project Requirements or Scope
4. Significant changes to manage risk and/or opportunities

Decisions that may also classify as significant include:

5. Selection of major material types.
6. Financial impacts of greater than $1 million
7. Have significant impacts on project stakeholders including the community or social impacts.

1.1.3 Multi Criteria Analysis

To assist in identifying preferred options and to inform significant decisions the decision making process will be underpinned by a Multi-Criteria Analysis (MCA) that provides a rapid qualitative assessment of options by incorporating environment, sustainability and economic factors.

The project MCA reviews options against seven assessment criteria divided into four distinct categories, with each category contributing a weighted percentage of the overall score (out of 4). A breakdown of assessment criteria and the contributed weightings is provided below:

Social Impacts (15%)

1. The reliability of the solution (10%)
2. Impact on sensitive receivers or project customers (5%)

Environment and Resources (20%)

3. Environmental Impacts (10%)
4. Resource consumption (10%)

Economic (45%)

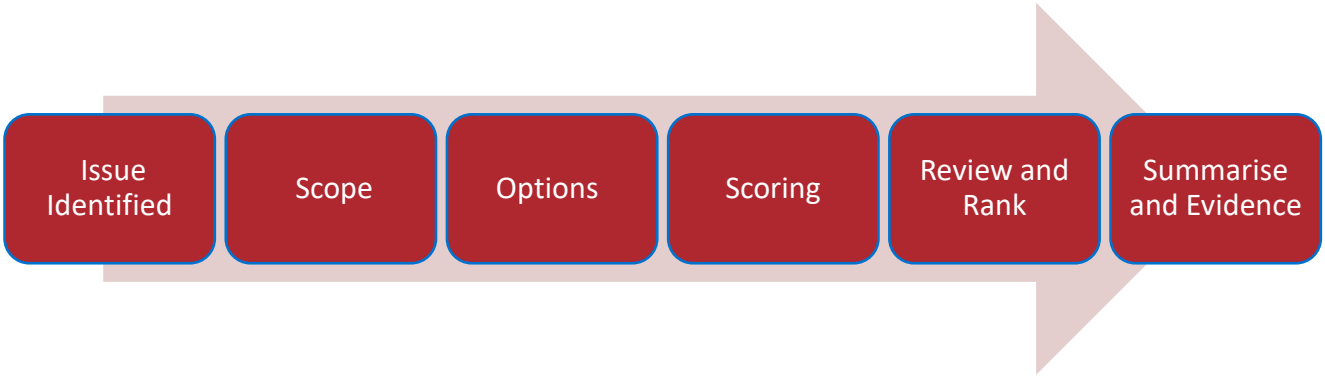
5. Economic Impacts / Cost

Safety (20%)

6. Safety in the Operability / Maintenance of the option (10%)
7. Ease / safety in construction of the option (10%)

1.1.4 Decision Making Process

During project delivery the following decision-making process will be undertaken:



1. An issue is identified and presented to the appropriate member of the management team, including but not limited to, the Senior Engineering Manager, Design Managers, Project Director, Construction Manager, Commercial Manager and/or Environment and Sustainability Manager.
2. Scope – Determine whether the identified issue meets the criteria for a significant issue as defined above. Where the issue is not considered significant, no further action taken. If the issue meets the above criteria, proceed to item 3.
3. Options – Determine the options to be considered.
4. Scoring – Score the options using the MCA Sustainability Evaluation Tool.
5. Review and Rank – The MCA will automatically weight the scores. A summary score (out of 4) will be calculated for each component as well as provide an overall score for each option. The model will generate a ranking to indicate which options is the most favourable.
6. Summary and Output - a summary report of the overall score of each option against the relevant sustainability criteria will be recorded for inclusion in the project monthly reporting. Where relevant in design, the summary report will be included in the sustainability in design report for the design package.

Tables

Figures

Glossary / Abbreviations

Abbreviation	Expanded Text
AA	Acoustics Advisor
AHMP	Aboriginal Heritage Management Plan
Ancillary facility	A facility established for construction of the project which will be decommissioned at the end of construction, which may include an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory and material stockpile area
AQMP	Air Quality Management Plan
ASS	Acid sulphate soils
BOCC	Back Up Operations Centre
CAF	Construcciones y Auxiliar de Ferrocarriles
CAP	Construction Area Plan; the main document prepared during the construction planning for that work area. Includes construction methodology, risk assessment, constructability reviews and Work Pack listing
CBD	Central business district
CCS	TfNSW Project Community Communication Strategy
CEMP	Construction Environmental Management Plan
CLM Act	*Contaminated Lands Management Act 1997*
CLMP	Contaminated Land Management Plan
Compliance audit	Verification of how implementation is proceeding with respect to a CEMP, which incorporates the relevant approval conditions
CoA	Minister's Conditions of Approval
Construction Area	A separable portion of work that is identified early in construction planning to help drive early definition of construction methodology and alignment of design activities. Work Areas should be listed in the overall construction methodology. The planning document for a work area is called a CAP
CSR	Combined Services Route
CSSI	Critical State Significant Infrastructure
CTP	Compliance Tracking Program

Abbreviation	Expanded Text
D&C	Design and Construct
DPIE	NSW Department of Planning, Industry and Environment
EA	Environmental Advisor
EES	Environment, Energy and Science Group (DPIE)
EIS	Environmental Impact Statement
EMS	Environmental Management System
ECM	Environmental Control Map
Ecological sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992).
Environmental aspect	Defined by AS/NZS ISO 14001:2004 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2004 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An unexpected event that causes, or has the potential to cause, harm to the environment and requires some action to minimise the impact or to restore the environment.
Environmental objective	Defined by AS/NZS ISO 14001:2004 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2004 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Environmental Representative	A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EWMS	Environmental work method statements

Abbreviation	Expanded Text
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
EPO	Environmental performance outcomes
ER	Environmental Representative
ERA	Environmental risk assessment
ETS	Electronic ticketing system
ESCP	Erosion and Sediment Control Plan
EWMS	Environmental Work Method Statement, a component of the environmental management system that addresses environmental management issues relevant to a specific site and/or activity
FMP	Flood Management Plan
FFMP	Flora and Fauna Management Plan
GHG	Greenhouse gas
GRCLR	Great River City Light Rail (responsible for the delivery of the SOM works for PLR)
HMP	Heritage Management Plan
IC	Independent Certifier
IMS	Information management system
LORAC	Laing O'Rourke Australia Contractors
LRV	Light rail vehicle
NVMP	Construction Noise and Vibration Management Plan
Non-compliance	Failure to comply with the requirements of the Project Approval or any applicable license, permit or legal requirements
non-compliance	An occurrence, set of circumstances or development that is a breach of the planning approval but is not an environmental incident.
NOW	NSW Office of Water
O&M	Operate and Maintain

Abbreviation	Expanded Text
PLR	Parramatta Light Rail
Project	Construction of the PLR light rail systems, high-voltage power supply and stops above slab level, and the stabling and maintenance facility
POEO Act	*Protection of the Environment Operations Act 1997*
REMMM	Revised Environmental Mitigation and Management Measure (from the Submissions Report incorporating the Preferred Infrastructure Report)
RMS	NSW Roads and Maritime Services (merged with TfNSW)
SaMF	Stabling and maintenance facility
SOM	Supply, Operate and Maintain Contract (Package 5)
Secretary	Secretary of the NSW Department of Planning, Industry and Environment (or delegate)
SPIR	Submissions and Preferred Infrastructure Report
SWMP	Soil and Water Management Plan
TPS	Traction power sub-station
TfNSW	Transport for New South Wales (PLR proponent)
TTAMP	Transport and Access Management Plan
Ventia	Remediation Contractor – Responsible for the remedial works at the Stabling and Maintenance Facility Site at Rosehill
WRMP	Waste and Resource Use Management Plan

Documents Referenced in this Plan

Document Name	Relationship to this Plan
Traffic, Transport and Access Management Plan	Sub plan under CoA C3
Flora and Fauna Management Plan	Sub plan under CoA C3
Noise and Vibration Management Plan	Sub plan under CoA C3
Soil and Water Quality Management Plan	Sub plan under REMMM
Heritage Management Plan	Sub plan under CoA C3
Aboriginal Heritage Management Plan	Sub plan under REMMMs
Air Quality Management Plan	Sub plan under REMMMs
Construction Waste and Resource Management Plan	Sub plan under REMMMs
Site Establishment Management Plan	Standalone plan under CoA C18
Flood Management Plan	Sub plan under CoA C3
Landscape and Temporary Works Plan	Sub plan under REMMM
Sustainability Strategy	Overarching strategy
Sustainability Management Plan	Standalone plan
GRCLR Staging Report	Standalone report
Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia EIS	Standalone report
Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report)	Standalone report
GRCLR Environmental and Sustainability Policy	Standalone document
Environmental Control Maps	Standalone documents
Communication and Engagement Plan	Standalone plan

Status of this Plan

The Parramatta Light Rail Westmead to Carlingford (SSI 8285) was approved by the Minister for Planning on 29 May 2018, and subsequently been modified twice under Section 5.25 of the *EP&A Act*, with approvals issued on 21 December 2018 and 25 January 2019 respectively.

It has also been the subject of two Staging Reports:

- November 2018, prepared by Transport for NSW (TfNSW); and superseded by
- September 2019 prepared by Transport for NSW (TfNSW).

A second Staging Report was prepared by Parramatta Connect (Infrastructure Contractor) to refine the allocation of the Conditions of Approval (CoA) and the Revised Environmental Mitigation and Management Measures (REMMM) to better reflect the allocation of scope between the delivery packages. This Staging Report was approved by DPIE in September 2019.

A third version of the Staging Report to further refine the allocation of environmental requirements between the different delivery contractors and reflect the staging of the GRCLR CEMP for the SOM works was prepared.

This CEMP has been prepared to meet the requirements of the CoAs and REMMMs as allocated by Staging Report Revision 7.02, approved in May 2020, Package 5 Activity B for the entirety of the SOM scope of works.

This CEMP was prepared in stages to reflect the construction program which is reliant on the completion of works by the Remediation and Infrastructure contractors. It also allowed time for consistency assessments to be undertaken for changes relating to some of the TPS sites and the BOCC without delaying commencement of construction at the SaMF site.

The GRCLR CEMP was staged as follows:

- First Issue includes: Construction at the SaMF site – approved by DPIE 21 October 2020; and
- Second Issue (this revision) includes: SaMF site and also construction of the remainder of the SOM works for the alignment, including Traction Power Stations (TPS), Back-up Operations and Control Centre (BOCC), and other sites (i.e. full SOM scope or construction works).

1 Introduction

1.1 Background

1.1.1 Parramatta Light Rail Description

Parramatta Light Rail (PLR) is one of the NSW Government's major infrastructure projects being delivered to serve a growing Sydney.

PLR will connect Westmead to Carlingford via Parramatta Central Business District (CBD) and Camellia. PLR is expected to be operational in 2023.

PLR will create new communities, connect great places and help both local residents and visitors move around and explore what the region has to offer. The route will link Parramatta's CBD and train station to a number of key locations, including the Westmead Precinct, the Parramatta North Growth Centre, the new Western Sydney Stadium, the Camellia Town Centre, the new Powerhouse Museum and Riverside Theatre arts and cultural precinct, the private and social housing redevelopment at Telopea, the Rosehill Gardens Racecourse and the three Western Sydney University campuses.

In summary, the key features of PLR include:

- A new dual track light rail network of approximately twelve kilometres in length, including approximately seven kilometres within the existing road corridor and approximately five kilometres within the existing Carlingford Line and Sandown Line, replacing current heavy rail services
- Sixteen stops that are fully accessible and integrated into the urban environment including a terminus stop at each end of Westmead and Carlingford
- High frequency 'turn-up-and-go' services operating seven days a week from 5am to 1am. Weekday services will operate approximately every 7.5 minutes in the peak period
- Modern and comfortable air-conditioned light rail vehicles, nominally 45 metres long and driver-operated, each carrying up to 300 passengers.
- Intermodal interchanges with existing public transport services at Westmead terminus, Parramatta CBD and the Carlingford terminus
- Creation of two light rail and pedestrian zones (no general vehicle access) within the Parramatta CBD along Church Street (generally between Market Street and Macquarie Street) and along Macquarie Street (generally between Horwood Place and Smith Street)
- A stabling and maintenance facility (SaMF) located in Camellia for light rail vehicles to be stabled, cleaned and maintained
- New and modified bridge structures along the alignment including over James Ruse Drive and Clay Cliff Creek, Parramatta River (near the Cumberland Hospital), Kissing Point Road and Vineyard Creek, Rydalmere
- Alterations to the existing road network including line marking, additional traffic lanes and turning lanes, new traffic signals, and changes to traffic flows
- Relocation and protection of existing utilities
- Public domain and urban design works along the corridor and at Stop precincts
- Closure of the heavy rail line between Carlingford and Clyde
- Active transport corridors and additional urban design features along sections of the alignment and within Stop precincts

- Integration with the Opal Electronic Ticketing System (ETS)
- Real time information in light rail vehicles and at Stops via visual displays and audio.

An overview of the PLR route is shown in Figure 1-1.

Figure 1-1: Parramatta Light Rail Route

1.1.2 PLR Delivery Strategy

The PLR comprises approximately 12km alignment from Westmead to Carlingford via Camellia and Parramatta CBD and consists of a mix of on-street and dedicated corridor.

PLR is being delivered under five delivery packages as detailed in the Staging Report Revision 7.02:

- Enabling Works (**Package 1**) – Local road network improvements including O'Connell Street and George Street (off-alignment)
- Westmead Precinct Works (**Package 2**) – Hawkesbury Road widening and demolition at Cumberland Hospital (east and west Campus)
- Early Works (**Package 3**) – Remediation of the Stabling and Maintenance Facility (SaMF)

- Infrastructure Works (**Package 4**) – Design and construction of civil works, public domain and light rail infrastructure up to road level/top of rail and to the top of the concrete slab at stops, including provision of utility services (excluding high-voltage power supply and cabling for rail systems), and decommissioning of the T6 Carlingford Line
- Supply Operate and Maintain Works (**Package 5**) – The Project (subject of this Plan) Design and construction of the light rail systems, high-voltage power supply and stops above slab level, the supply of light rail vehicles, and the design and construction of the SaMF, including all light rail operations, customer service and asset management.

Each package of work is to be delivered under separate contracts on behalf of the proponent Transport for NSW (TfNSW). While the packages will commence at different times under separate construction approvals, there will be periods during which the works packages will overlap. The interactions between the packages are shown in Figure 1-2.

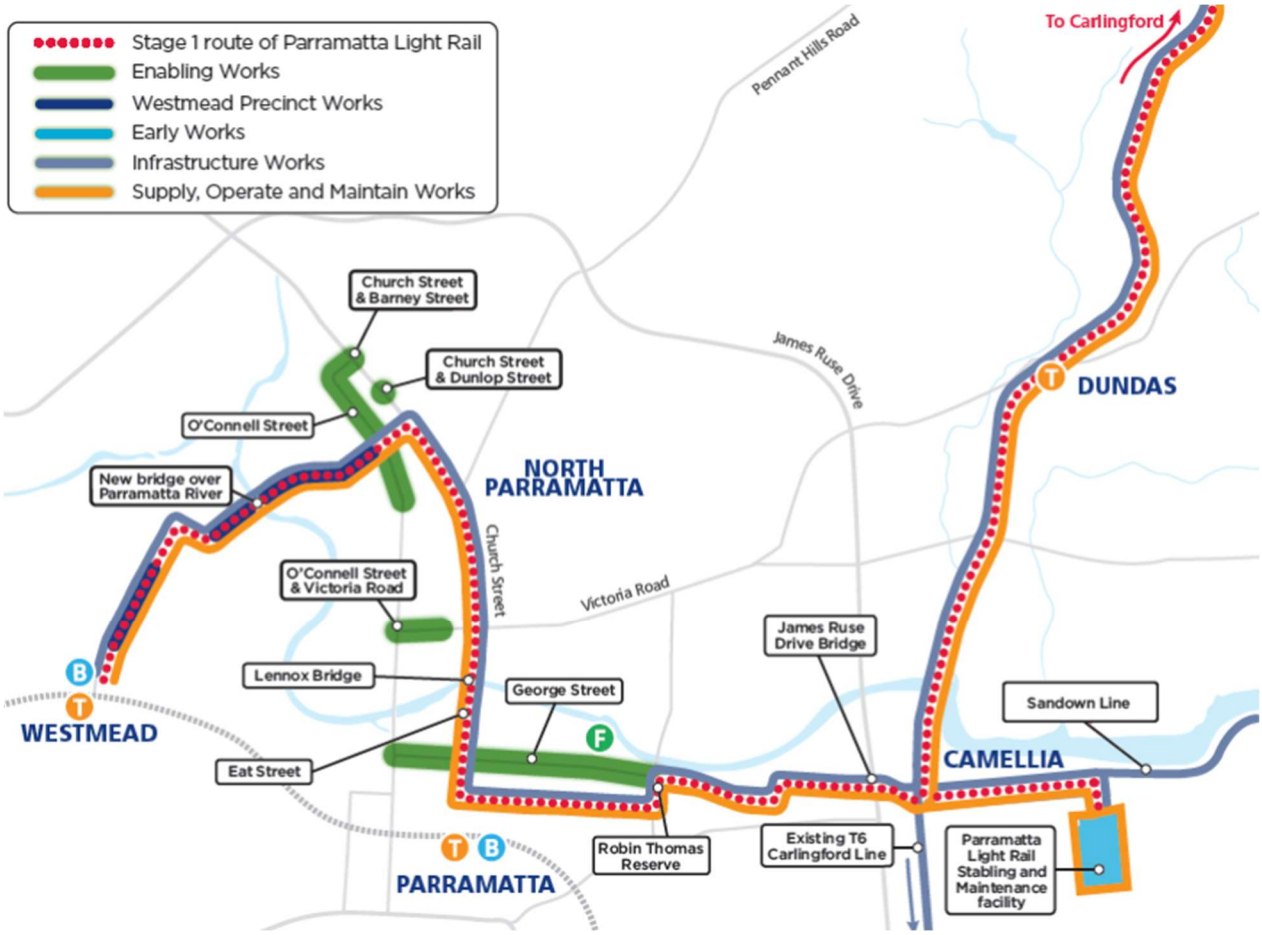


Figure 1-2: Parramatta Light Rail Delivery Strategy

1.1.3 Supply, Operate and Maintain Contract (Package 5) overview

As System Integrator for PLR, the SOM Contractor's activities include:

- Delivery activities
- Light rail vehicle procurement
- Operation and maintenance.

The delivery activities include all investigation, selection, specification, design, approvals, construction, manufacture, installation, testing and commissioning, operational readiness and activities to transition from the delivery phase to the operations phase.

In summary the SOM package includes the following. Figure 1-3 further details these activities.

- All works above and additional to the platform concrete foundation slab at all stops
- Stabling and maintenance facility
- Central control system
- Light rail signalling system
- Elements of the road intersection signalling system
- Communications and passenger information systems
- Power Supply system
- Procurement of light rail vehicles (LRV)
- Maintenance plant and machinery for the LRVs
- Earthing and bonding, electrolysis and electromagnetic compatibility

Note: This version of the CEMP has been prepared for the purpose of the construction of the Stabling and Maintenance Facility, which incorporates elements of all of the above listed activities except the construction of the stops.

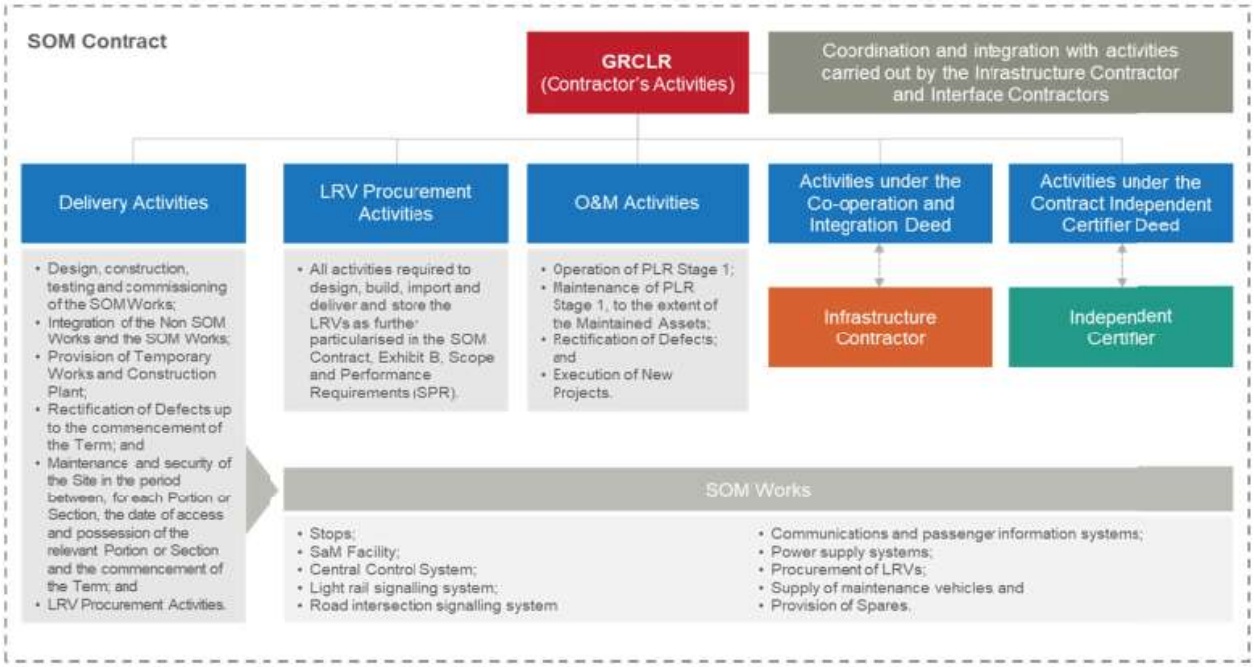


Figure 1-3: SOM Contract Activities for PLR

Great River City Light Rail (GRCLR) is responsible for the delivery of the SOM works for PLR. GRCLR has sub-contracted out the supply component of these works to Construcciones y Auxiliar de Ferrocarriles (CAF) who has engaged Thales, General Electric and Laing O'Rourke Australia (LORAC) to undertake the design and construction responsibilities associated with the supply component of the works, which includes the design and construction related activities including testing and commissioning, and excludes all operational and maintenance activities.

GRCLR is the owner of this Construction Environmental Management Plan (CEMP) and is responsible for ensuring implementation of and compliance with this CEMP by all subcontractors during construction works of Package 5, which include the construction of the light rail systems, high-voltage power supply and stops above slab level, as well as the stabling and maintenance facility (the Project). Further detail on the Project is provided in Section 2.

1.1.4 Relationship with other Packages

Infrastructure Works (Package 4)

The Infrastructure Works Package is closely aligned to the Package 5, SOM Works. A graphical representation of the split in scope between the two packages is depicted in Figure 1-4. The reason for dividing this work into two packages is to ensure that suitably qualified and experienced sub-contractors are in place for each specialised component; civil infrastructure, and operational systems. The Infrastructure Works will deliver the civil infrastructure components of PLR and will not trigger the operational conditions, except for those that relate to detailed design.

An interface between the two packages has been established to monitor cumulative impacts and the coordination of environmental complaints management, site management controls, and the delineation of incident reporting and non-compliance management.

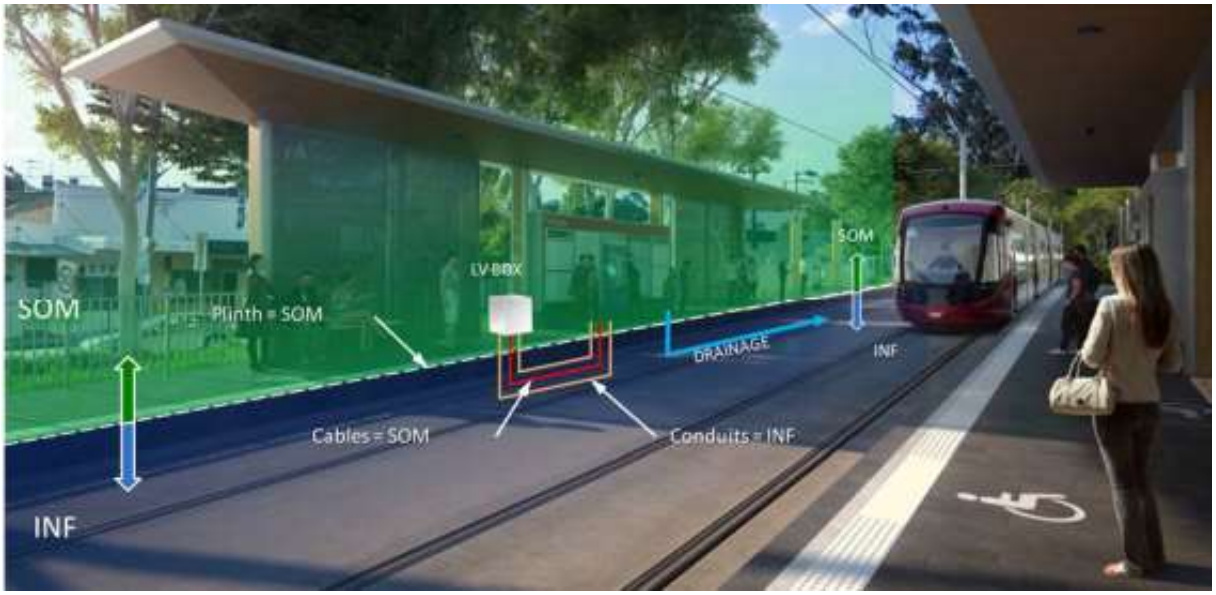


Figure 1-4: Relationship between Infrastructure Works and SOM Works

Early Works Remediation Contractor – Ventia (Package 3)

The SOM contract is dependent on the completion of the remediation works at the stabling and maintenance facility (SaMF) site, by the remediation contractor.

The SaMF site is subject to historical contamination and is a listed contaminated site by the Environment Protection Authority (EPA). The works have been split to ensure that appropriately qualified contractor, experienced in remediating heavily contaminated sites, is managing the remediation of the site. The remediation contractor will complete their works and provide GRCLR a remediated site, complete with a site audit statement, and supporting management documentation, fit for purpose for site establishment, construction and operational activities associated with PLR.

The remediation works will deliver the remediated site, including any details of any ongoing management requirements, and will not trigger the construction and operational conditions, except for those that relate to detailed design. The Remediation Contractor will provide GRCLR with a

Long Term Environmental Management Plan (LTEMP) for the SaMF, the LTEMP will include all operation, management, maintenance and monitoring requirements for the SaMF. GRCLR will implement the requirements relevant to the construction of the Stabling and Maintenance facility.

Ongoing management for the remedial works on the SaMF site will be implemented through a Long Term Environmental Management Plan (LTEMP) which will be approved by the Site Auditor, as part of the issuing of the Site Audit Statement (SAS) for the site. The LTEMP will be a stand-alone document, and all monitoring and reporting will be managed through the processes and procedures in the LTEMP, and not through the SOM CEMP.

An interface between the two packages has been established to ensure the remediated site meets the design requirements for the construction, operation and maintenance of the site.

1.1.5 Statutory Context

PLR has been subject to environmental impact assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act). It is classified as Critical State Significant Infrastructure (CSSI).

Detailed environmental impact assessments have been carried out and approved by the Minister for Planning and Public Spaces. The Planning Approval for PLR is described in Section 1.1.6.

1.1.6 Parramatta Light Rail Planning Approval

The Parramatta Light Rail was approved by the Minister for Planning on 29 May 2018, under Section 5.19 of the *Environmental Planning and Assessment Act (EP&A Act) 1979*. An environmental impact statement (EIS) was prepared as part of the infrastructure application (SSI-8285) as was a submissions and preferred infrastructure report (SPIR) following public exhibition of the EIS.

The Infrastructure Approval has subsequently been modified twice under Section 5.25 of the *EP&A Act*, with approvals issued on 21 December 2018 and 25 January 2019 respectively. The modifications related to changes to conditions of approval (CoA) not the physical description of PLR.

The Infrastructure Approval, modifications and related environmental assessment documents can be found at: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8285.

1.2 CEMP and Sub Plans

This CEMP and sub plans have been prepared to outline and describe how GRCLR will comply with the requirements of the following during the construction of the Project.

- Minister's Conditions of Approval (CoA) SSI-8285
- Revised Environmental Mitigation and Management Measures (REMMMs)
- Environmental Performance Outcomes (EPO's)
- AS/NZ ISO 14001
- All applicable legislation
- Project Deed.

It outlines how GRCLR will minimise the environmental risks and achieve environmental outcomes on the Project by providing a structured approach to ensure appropriate environmental mitigation measures are implemented.

This CEMP is the overarching document of the environmental management system for the Project. It is applicable to all staff and subcontractors associated with the construction of the Project.

In summary, the main purpose of this CEMP is to:

- Describe the Project including all relevant activities to be undertaken on the site during construction and associated timing of the various stages of the Project
- Comply with the relevant environmental requirements of the Project
- Identify the environmental hazards, risks and mitigation measures associated with GRCLR's construction activities
- Assist in the prevention of unauthorised environmental harm
- Minimise negative impacts on the community that relate to the environmental impacts of the construction activities
- Identify and outline implementation for feasible opportunities to reduce the environmental impact of GRCLR's construction activities that are beyond compliance requirements
- Meet the requirements of AS/NZ ISO 14001 including the need for continual improvement.

1.2.1 Internal Review

Draft documents are internally reviewed by the author and GRCLR representatives prior to issue to TfNSW, the ER and the Independent Certifier (IC) for review. Upon receipt of any comments, the GRCLR will either amend the document to reflect the comments or document the justification as to why no change is required; evidence of consultation will be retained.

1.2.2 Certification and Approval

The final CEMP would be endorsed by the GRCLR Environment and Sustainability Manager and approved by the Project Director. The final CEMP would be submitted for endorsement by the Project Environmental Representative (ER), and approval by the Secretary of Department of Planning, Industry and Environment (DPIE) no later than one month prior to the commencement of construction, as required by the infrastructure approval. Sub-plans to the CEMP would also be required to be submitted to the Secretary of DPIE prior to commencement of construction for either information or approval at least one month prior to commencement of construction, as shown in **Table 1-1**.

Table 1-1: Secretary approval requirements

Required CEMP Sub-plan	Secretary Approval/ Information
CEMP	Approval
Traffic, transport and access	Information
Noise and vibration	Approval
Flood management	Information
Heritage	Approval
Flora and fauna	Information

1.2.3 Consultation

This Project CEMP and sub plans have been developed in consultation with relevant stakeholders as identified in **Table 1-2**. The outcomes of the consultation are addressed and documented where relevant in a separate consultation report (PLR1SOM-GLR-ALL-EN-RPT-001002), submitted to DPIE together with the relevant plans.

Table 1-2: Consultation requirements

Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan
Traffic, transport and access	Relevant council(s), TfNSW, Emergency Services
Noise and vibration	Relevant council(s), EPA, NSW Health
Flood management	Relevant council(s), Environment, Energy and Science Group (DPIE), OEH (Department of Premier and Cabinet), Sydney Water
Heritage	Relevant council(s), OEH (Department of Premier and Cabinet)
Flora and fauna	Relevant council(s), OEH (Department of Premier and Cabinet)
Site establishment management plan	Relevant council(s) and relevant government authorities

Where the terms of the CoA require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken will be submitted to the Secretary with the document or monitoring program for review, in accordance with CoA A5. The evidence would include:

- Documentation of the engagement with the party(ies) identified in the relevant condition of approval before submitting the document for approval
- Log of the points of engagement or attempted engagement with the identified party(ies) and a summary of the issues raised by the identified party(ies)
- Documentation of any follow-up with the identified party(ies), where feedback has not been provided, to confirm that the identified party(ies) has none or has failed to provide feedback after repeated requests
- Outline of the issues raised by the identified party(ies) and how they have been addressed, including evidence that the party(ies) is satisfied the issues have been addressed
- where there are outstanding issues raised by the identified party(ies) that have not been adopted, the reasons why they have not been/could not be adopted must be provided, including evidence of consultation with the relevant party(ies).

In accordance with CoA C5 the evidence of consultation for each management sub plan will be provided in a stand-alone report submitted together with each of the relevant management sub plans and programs.

1.2.4 CEMP Availability and Distribution

This CEMP will be made available to the public on the project wide PLR website. Confidential information, which may include the location of threatened species and personnel contact details, would be removed from all documents prior to them being made publicly available.

This CEMP will be made available to all personnel and subcontractors via the Project Integrated Management System (IMS).

The document is uncontrolled when printed. One controlled hard copy of the CEMP and supporting documents would be maintained by the GRCLR Environment and Sustainability Manager at the Project office, with copies distributed to:

- Project Director
- Environmental Representative (ER)
- Acoustic Advisor (AA)
- Design and Construct (D&C) Environment Manager
- Stakeholder & Community Relations Manager
- TfNSW representative
- Independent Certifier.

1.3 CEMP Compliance

This CEMP and sub plans have been prepared to describe how GRCLR, will comply with the environmental requirements during the construction of the Project. Requirements that are applicable to the management sub plans are listed and addressed in the relevant plans.

The CoA relevant to this Plan are listed in **Table 1-3**. A cross reference is also included to indicate where the condition is addressed in this Plan.

Table 1-3 lists the CoA that are relevant to the CEMP only, together with where and how each is addressed. Similarly, **Table 1-4** lists the relevant REMMMs from the SPIR and Environmental Performance Outcomes

Relevant EPOs are listed in Table 1-5. This includes reference to required outcomes, relevant documents or sections references and how addressed.

Table 1-5 provides the relevant EPO from the EIS.

1.3.1 Minister's Conditions of Approval

The CoA relevant to this Plan are listed in Table 1-3. A cross reference is also included to indicate where the condition is addressed in this Plan.

Table 1-3: CoA relevant to the CEMP

CoA No.	Requirement	Reference	How Addressed
A1	The CSSI must be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement (dated August 2017) (the EIS) as amended by (a) the Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report) (February 2018) (the SPIR). (b) SSI 8285 Administrative modification (November 2018) (MOD 1); and (c) SSI 8285 Correction to Administrative modification (January 2019) (MOD 2).	Section 1.1.5 Section 1.1.6 Table 1-1 Table 1-2	This CEMP and Associated Sub-plans demonstrate how the construction of the Project will be carried out in accordance with the CoA, EIS (August 2017) and SPIR (February 2018). All relevant commitments are listed in each sub plan with a reference of where and how it is addressed.

CoA No.	Requirement	Reference	How Addressed
A2	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the EIS as amended by the Submissions Report (incorporating Preferred Infrastructure Report) unless otherwise specified in, or required under, this approval.	This Plan	This CEMP is the overarching document in the environmental management system for the Project and includes a number of management documents, including sub-plans and procedures. It is applicable to all staff and Subcontractors associated with the construction of the Project. The CEMP provides a framework for ensuring compliance with the requirements of the CoA (including approved Modifications 1 and 2), REMMMs, relevant legislative requirements and the Deed.
A3	In the event of an inconsistency between the EIS and the Submissions Report (incorporating Preferred Infrastructure Report) or any other document required under this approval, and a term of this approval, the term of this approval prevails to the extent of the inconsistency. Note: For the purpose of this condition, there will be an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.	This Plan Section 3.8 Section 8.4 Appendix A1	Condition noted. In the event that an inconsistency is identify, clarification will be sought from the ER or the DPIE, if required.
A4	The Proponent must comply with all written requirements or directions of the Secretary, including in relation to:	Section 6.1, 8.3, 8.4, 8.6 Appendix A1	Condition noted

CoA No.	Requirement	Reference	How Addressed
(a)	the environmental performance of the CSSI;	Section 6.1, 8.3, 8.4, 8.6 Appendix A1	Condition noted In the event that a written requirement or direction is received from the Planning Secretary, relevant information and/or records will be provided to TfNSW for submission.
(b)	any document or correspondence in relation to the CSSI;	Section 6.1, 8.3, 8.4, 8.6 Appendix A1	Condition noted In the event that a written requirement or direction is received from the Planning Secretary, relevant information and/or records will be provided to TfNSW for submission.
(c)	any notification given to the Secretary under the terms of this approval;	Section 6.1, 8.3, 8.4, 8.6 Appendix A1	Condition noted In the event that a written requirement or direction is received from the Planning Secretary, relevant information and/or records will be provided to TfNSW for submission.
(d)	any audit of the construction or operation of the CSSI;	Section 6.1, 8.3, 8.4, 8.6 Appendix A1	Condition noted In the event that a written requirement or direction is received from the Planning Secretary, relevant information and/or records will be provided to TfNSW for submission.

CoA No.	Requirement	Reference	How Addressed
(e)	the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval); and	Section 6.1, 8.3, 8.4, 8.6 Appendix A1	Condition noted In the event that a written requirement or direction is received from the Planning Secretary, relevant information and/or records will be provided to TfNSW for submission.
(f)	the carrying out of any additional monitoring or mitigation measures.	Chapter 8 Appendix A1	Condition noted In the event that a written requirement or direction is received from the Planning Secretary, relevant information and/or records will be provided to TfNSW for submission.
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Secretary with the document or monitoring program or review. The evidence must include:	Section 1.2.3, 6.1, 7.2, 8.3, 8.5	Each document or monitoring program that is to be prepared or a review to be undertaken in consultation with identified parties will be issued to the relevant party and the records included in the relevant sub plan appendices. Stand-alone Consultation Reports. For CEMP PLR1SOM-GLR-ALL-EN-RPT-001002 Rev C.

CoA No.	Requirement	Reference	How Addressed
(a)	documentation of the engagement with the party(ies) identified in the relevant condition of approval before submitting the document for approval;	Section 1.2.3, 6.1, 7.2, 8.3, 8.5	Each document or monitoring program that is to be prepared or a review to be undertaken in consultation with identified parties will be issued to the relevant party and the records included in the relevant sub plan appendices. Stand-alone Consultation Reports. For CEMP PLR1SOM-GLR-ALL-EN-RPT-001002 Rev C.
(b)	log of the points of engagement or attempted engagement with the identified party(ies) and a summary of the issues raised by the identified party(ies);	Section 1.2.3, 6.1, 7.2, 8.3, 8.5	Each document or monitoring program that is to be prepared or a review to be undertaken in consultation with identified parties will be issued to the relevant party and the records included in the relevant sub plan appendices. Stand-alone Consultation Reports. For CEMP PLR1SOM-GLR-ALL-EN-RPT-001002 Rev C.
(c)	documentation of any follow-up with the identified party(ies), where feedback has not been provided, to confirm that the identified party(ies) has none or has failed to provide feedback after repeated requests;	Section 1.2.3, 6.1, 7.2, 8.3, 8.5	Each document or monitoring program that is to be prepared or a review to be undertaken in consultation with identified parties will be issued to the relevant party and the records included in the relevant sub plan appendices. Stand-alone Consultation Reports. For CEMP PLR1SOM-GLR-ALL-EN-RPT-001002 Rev C.

CoA No.	Requirement	Reference	How Addressed
(d)	outline of the issues raised by the identified party(ies) and how they have been addressed, including evidence that the party(ies) is satisfied the issues have been addressed; and	Section 1.2.	Each document or monitoring program that is to be prepared or a review to be undertaken in consultation with identified parties will be issued to the relevant party and the records included in the relevant sub plan appendices. Stand-alone Consultation Reports. For CEMP PLR1SOM-GLR-ALL-EN-RPT-001002 Rev C.
(e)	where there are outstanding issues raised by the identified party(ies) that have not been adopted, the reasons why they have not been/could not be adopted must be provided, including evidence of consultation with the relevant party(ies).	Section 1.2.3	Each document or monitoring program that is to be prepared or a review to be undertaken in consultation with identified parties will be issued to the relevant party and the records included in the relevant sub plan appendices. Stand-alone Consultation Reports. For CEMP PLR1SOM-GLR-ALL-EN-RPT-001002 Rev C.
A29 (g) iii	consider relevant minor amendments made to the CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the terms of this approval and the management plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, endorse the amendment. This does not include any modifications to the terms of this approval;	Section 9.2	Minor amendments made to the CEMP, relevant sub-plans and noise and vibration monitoring programs may be approved by the Environmental Representative in consultation with the AA. More significant changes would require the approval of DPIE.

CoA No.	Requirement	Reference	How Addressed
A30	A Compliance Tracking Program to monitor compliance with the terms of this approval must be prepared, taking into consideration any staging of the CSSI that is proposed in a Staging Report submitted in accordance with Conditions A13 and A14 of this approval.	Section 8.4	A Project wide Compliance Tracking Program (CTP) will be maintained by TfNSW. The CTP will contain all the CoA and satisfy the requirements of CoA A30 to A34. The CTP will be maintained for the duration of the Project.
A31	The Compliance Tracking Program must be endorsed by the ER and then submitted to the Secretary for information at least one (1) month before the commencement of works.	Section 8.4	The CTP will be endorsed by the ER and submitted to the Secretary for information at least one month before the commencement of works
A32	The Compliance Tracking Program in the form required under Condition A30 of this approval must be implemented for the duration of works and for a minimum of one (1) year following commencement of operation, or for a longer period as determined by the Secretary based on the outcomes of independent environmental audits, Environmental Representative Monthly Reports and regular compliance reviews submitted through Compliance Reports. If staged operation is proposed, or operation is commenced of part of the CSSI, the Compliance Tracking Program must be implemented for the relevant period for each stage or part of the CSSI.	Section 8.4	The CTP will be maintained for the duration of the Project and reviewed quarterly. **Table 8-4** sets out the compliance reporting schedule.
A33	The Proponent must make each compliance report publicly available and notify the Department in writing when this has been done.	Section 8.4	Each compliance report will be available via the PLR project website: www.parramattalightrail.nsw.gov.au

CoA No.	Requirement	Reference	How Addressed
A34	A Pre-Construction Compliance Report must be prepared and submitted to the Secretary for information no later than one (1) month before the commencement of construction (or each stage of construction identified in the Staging Report).	Section 8.4	The pre-construction compliance report will be prepared by TfNSW and GRCLR and submitted to the Secretary prior to the commencement of construction of this package.
A37	Construction Compliance Reports must be prepared and submitted to the Secretary for information every six (6) months from the date of the commencement of construction for the duration of construction. The Construction Compliance Reports must include:	Chapter 8	The construction compliance reports will be prepared by TfNSW with input from the GRCLR and submitted to the Secretary for information every six months. The content of the reports is stated in chapter 8 of this CEMP.
(a)	a results summary and analysis of environmental monitoring;	Chapter 8	The construction compliance reports will be prepared by TfNSW with input from the GRCLR and submitted to the Secretary for information every six months. The content of the reports is stated in chapter 8 of this CEMP.
(b)	the number of complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints;	Chapter 8	The construction compliance reports will be prepared by TfNSW with input from the GRCLR and submitted to the Secretary for information every six months. The content of the reports is stated in chapter 8 of this CEMP.
(c)	details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;	Chapter 8	The construction compliance reports will be prepared by TfNSW with input from the GRCLR and submitted to the Secretary for information every six months. The content of the reports is stated in chapter 8 of this CEMP.

CoA No.	Requirement	Reference	How Addressed
(d)	a register of any reviews of consistency undertaken including outcome;	Chapter 8	The construction compliance reports will be prepared by TfNSW with input from the GRCLR and submitted to the Secretary for information every six months. The content of the reports is stated in chapter 8 of this CEMP.
(e)	results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit;	Chapter 8	The construction compliance reports will be prepared by TfNSW with input from the GRCLR and submitted to the Secretary for information every six months. The content of the reports is stated in chapter 8 of this CEMP.
(f)	a summary of all incidents notified in accordance with Conditions A44 and A46 of this approval; and	Chapter 8	The construction compliance reports will be prepared by TfNSW with input from the GRCLR and submitted to the Secretary for information every six months. The content of the reports is stated in chapter 8 of this CEMP.
(g)	any other matter relating to compliance with the terms of this approval or as requested by the Secretary.	Chapter 8	The construction compliance reports will be prepared by TfNSW with input from the GRCLR and submitted to the Secretary for information every six months. The content of the reports is stated in chapter 8 of this CEMP.

CoA No.	Requirement	Reference	How Addressed
A40	An Environmental Audit Program for annual independent environmental auditing against the terms of this approval must be prepared in accordance with *AS/NZS ISO 19011:2014 - Guidelines for Auditing Management Systems* and submitted to the Secretary for information no later than one month before the commencement of construction.	Section 8.3	Internal and external environmental audits would be undertaken in accordance with *AS/NZS ISO 19011:2014 Guidelines for Auditing Management Systems* and follow the environmental audit program submitted to the Secretary for information no later than one month before commencement of construction. An indicative audit schedule is provided in **Table 8-3**.
A41	The Environmental Audit Program, as submitted to the Secretary, must be implemented for the duration of construction and operation.	Section 8.3	Environmental audits would be conducted at regular intervals, on a risk-based approach, during construction of the Project to assess environmental performance and ensure compliance.
A42	All independent environmental audits of the CSSI must be conducted by a suitably qualified, experienced and independent auditor with, where required, a team of independent technical experts and be documented in an Environmental Audit Report which:	Section 8.3	The independent environmental audits will be undertaken by a suitably qualified, experienced and independent auditor with, where required, a team of independent technical experts. The independent environmental audit report will assess the performance and compliance of the Project, identifying measures and actions to improve performance.

CoA No.	Requirement	Reference	How Addressed
(a)	assesses the environmental performance of the CSSI, and its effects on the surrounding environment;	Section 8.3	The independent environmental audits will be undertaken by a suitably qualified, experienced and independent auditor with, where required, a team of independent technical experts. The independent environmental audit report will assess the performance and compliance of the Project, identifying measures and actions to improve performance.
(b)	assesses whether the project is complying with the terms of this approval; and	Section 8.3	The independent environmental audits will be undertaken by a suitably qualified, experienced and independent auditor with, where required, a team of independent technical experts. The independent environmental audit report will assess the performance and compliance of the Project, identifying measures and actions to improve performance.
(c)	recommends measures or actions to improve the environmental performance of the CSSI.	Section 8.3	The independent environmental audits will be undertaken by a suitably qualified, experienced and independent auditor with, where required, a team of independent technical experts. The independent environmental audit report will assess the performance and compliance of the Project, identifying measures and actions to improve performance.

CoA No.	Requirement	Reference	How Addressed
A43	The Proponent must submit a copy of the Environmental Audit Report to the Secretary for information, with a response to any recommendations contained in the audit report within six (6) weeks of completing the audit.	Section 8.3	Independent audit recommendations would be implemented within six weeks of receiving the independent audit report.
A44	The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and nature of the incident.	Section 7.2	TfNSW hold the primary responsibility for fulfilling the obligations detailed in CoA A44 to A47 with respect to incident notification and reporting to DPIE. GRCLR will assist and cooperate with TfNSW to fulfil these obligations.
A45	Within one week of notification of an incident under Condition A44 of this approval, the Proponent must submit a report to the Department providing the time and date of the incident, details of the incident and must identify any consequent non-compliance with this approval.	Section 7.2	TfNSW will submit a report to the Department providing the time and date of the incident, details of the incident and identification of any consequent non-compliance with this approval. The GRCLR will assist and cooperate with TfNSW to fulfil this obligation.
A46	All written requirements of the Secretary, which may be given at any point in time, to address the cause or impact of an incident must be complied with, within any timeframe specified by the Secretary or relevant public authority.	Section 7.2	TfNSW and GRCLR will implement all written requirements of the Secretary, which may be given at any point in time, to address the cause or impact of an incident within any timeframe specified by the Secretary or relevant public authority.

CoA No.	Requirement	Reference	How Addressed
A47	If an incident occurs or if statutory notification is given to the EPA as required under the *Protection of the Environment Operations Act 1997* in relation to the CSSI, such notification must also be provided to the Secretary within 24 hours after the notification was given to the EPA.	Section 7.2	If an incident requires EPA notification under the POEO Act, TfNSW will notify the Secretary within 24 hours after the notification was given to the EPA
C1	A Construction Environmental Management Plan (CEMP) must be prepared to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	This CEMP	This CEMP demonstrates how the performance outcomes, commitments and mitigation measures specified in the documents listed in CoA A1 will be implemented and achieved during construction. It has been prepared for Stage 3 Activity A under Staging Report Revision 7.02 (May 2020).
C2	The CEMP must provide:		
(a)	A description of activities to be undertaken during construction (including the scheduling of construction)	Chapter 2	The project includes the construction of the light rail systems, high-voltage power supply and stops above slab level, and the stabling and maintenance facility. Section 2 provides an overview of the features of the project, general construction activities and the indicative construction schedule.

CoA No.	Requirement	Reference	How Addressed
(b)	Details of environmental policies, guidelines and principles to be followed in the construction of the CSSI;	Section 3.1, 3.2, 3.3	This CEMP, including sub plans, incorporates applicable environmental legislation, codes of practice, Australian Standards and other guidelines for the Project. GRCLR workers (including sub-contractors) will comply with relevant environmental and WHS legislation, codes of practice, industry standards and regulatory approvals as applicable to their work activities.
(c)	A program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the CSSI;	Section 3.5	An Environmental Risk Assessment (ERA) was prepared for the project. The ERA will be reviewed every six months.
(d)	Details of how the activities described in subsection (a) of this condition will be carried out to: i) meet the performance outcomes stated in the documents identified in Condition A1; and ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition;	Chapter 8	Mitigation measures identified in the ERA to manage the risks and achieve compliance with the performance outcomes of the documents identified in A1 will be incorporated into the CEMP sub plans. Compliance with the performance outcomes will be checked by the implementation of a comprehensive monitoring/inspection/auditing programme (Section 8).

CoA No.	Requirement	Reference	How Addressed
(e)	An inspection program detailing the activities to be inspected and frequency of inspections;	Section 8.1	The D&C Environment Manager and/or delegate will undertake pre-work inspections, weekly and pre and post-rainfall inspections of the work sites to evaluate the effectiveness of environmental controls. An environmental inspection checklist will be used to ensure that all environmental aspects are reviewed during inspection. The ER, AA, IA, TfNSW and Independent Certifier will also undertake inspections
(f)	A protocol for managing and reporting any: i) incidents; and ii) non-compliances with this approval and with statutory requirements.	Chapter 7 Section 8.6	In the event of an environmental incident, the protocol in Section 7 will be implemented. Section 8.6 sets out the protocol for managing and reporting non-compliances.
(g)	Procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;	Section 8.6	Non-compliance shall be recorded in a corrective action report. The corrective action report will document the agreed actions and timeframes for addressing the environmental non-compliance.
(h)	a list of all the CEMP Sub-plans required in respect of construction, as set out in Condition C3. Where staged construction of the CSSI is proposed, the CEMP must also identify which CEMP Sub-plan applies to each of the proposed stages of construction;	Section 4.4.2	A list of construction sub-plans for this Project, and their approval requirements, are provided in Section 4.4.2.

CoA No.	Requirement	Reference	How Addressed
(i)	a description of the roles and environmental responsibilities for relevant employees and their relationship with the ER;	Section 4.2	The key environmental management roles and responsibilities for the construction phase of the Project are described in Section 4.2. The GRCLR Environment and Sustainability Manager is the primary contact with the ER for this Project
(j)	for training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval;	Chapter 5	To ensure that this CEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them are aware of the Project environmental and compliance obligations. This will be achieved through the Project induction or dedicated training.
(k)	for periodic review and update of the CEMP and all associated plans and programs.	Section 9.2	Continual improvement is achieved through constant measurement and evaluation, audit and review of the effectiveness of the CEMP, and its adjustment and improvement. Monthly reviews undertaken by the ER and quarterly management reviews offer specific opportunities to identify improvements in the CEMP.

<table>
<tr><th>CoA No.</th><th>Requirement</th><th>Reference</th><th>How Addressed</th></tr>
<tr><td>C3</td><td>The following CEMP sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan and be consistent with the CEMP referred to in Condition C1:
<table>
<tr><th></th><th>Required CEMP Sub-plan</th><th>Relevant government agencies to be consulted for each CEMP Sub-plan</th><th>Secretary Approval/ Information</th></tr>
<tr><td>(a)</td><td>Traffic, transport and access</td><td>Relevant Council(s), Roads and Maritime Services, Emergency Services</td><td>Information</td></tr>
<tr><td>(b)</td><td>Noise and vibration</td><td>Relevant Council(s), EPA, NSW Health</td><td>Approval</td></tr>
<tr><td>(c)</td><td>Flood Management</td><td>Relevant Council(s), OEH (Department of Premier and Cabinet), Sydney Water</td><td>Information</td></tr>
<tr><td>(d)</td><td>Heritage</td><td>Relevant Council(s), OEH (Department of Premier and Cabinet)</td><td>Approval</td></tr>
<tr><td>(e)</td><td>Flora and Fauna Biodiversity</td><td>Relevant Council(s), OEH (Department of Premier and Cabinet)</td><td>Information</td></tr>
</table></td><td>Section 1.2.2, 1.2.3

Section 4.4.2</td><td>The CEMP sub plans listed in CoA C3 will be prepared in consultation with the relevant government agencies. The records of consultation will be provided in the appendices of each sub plan.</td></tr>
</table>

CoA No.	Requirement	Reference	How Addressed
C4	The CEMP Sub-plans must state how:	Sub-Plans (see C3 for list)	Mitigation measures identified in the ERA and documents listed in A1 to manage the risks and achieve compliance with the performance outcomes of the documents identified in A1 will be incorporated into the CEMP sub plans.
(a)	the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;	Sub-Plans (see C3 for list)	The relevant environmental performance outcomes are outlined in the Sub-plans. These targets were derived from the EIS to be measurable during the Project's inspections and monitoring.
(b)	the mitigation measures identified in the documents listed in Condition A1 will be implemented;	Sub-Plans (see C3 for list)	Compliance with the performance outcomes will be checked by the implementation of a comprehensive monitoring/inspection/auditing programme (Section 8).
(c)	the relevant terms of this approval will be complied with; and	Sub-Plans (see C3 for list)	Compliance with the performance outcomes will be checked by the implementation of a comprehensive monitoring/inspection/auditing programme (Section 8).
(d)	issues requiring management during construction as identified through ongoing environmental risk analysis, will be managed.	Sub-Plans (see C3 for list)	Specific management issues during construction are outlined in the Environmental Aspects and Impacts Section of each Sub-plan.

CoA No.	Requirement	Reference	How Addressed
C5	The CEMP Sub-plans must be developed in consultation with relevant government agencies (including Relevant Council(s)). Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including all copies of correspondence from those agencies, must be provided to the Secretary with the relevant CEMP Sub-plan. (including Relevant Council(s)).	Sub-Plans (see C3 for list)	The CEMP sub plans will be developed in consultation with relevant government agencies, as required by CoA C3. Details of this consultation will be reported in the appendix of the corresponding sub plan, which will be provided to the Secretary in accordance with CoA C3.
C6	Any of the CEMP Sub-plans may be submitted along with, or subsequent to, the submission of the CEMP but in any event, no later than one month before construction.	Sub-Plans (see C3 for list)	The CEMP sub-plans will be submitted with or after the submission of the CEMP but in any event, no later than one month before construction.
C7	The CEMP must be endorsed by the ER and then submitted to the Secretary for approval no later than one month before the commencement of construction.	Section 4.3.1	This CEMP will be endorsed by the ER and provided to the Secretary for approval at least one month prior to the commencement of construction.
C8	Construction must not commence until the CEMP and any CEMP Sub-plan specified in Condition C3 have been submitted to or approved by the Secretary. The CEMP and CEMP Sub-plans submitted to or approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where construction of the CSSI is staged, construction of a stage must not commence until the CEMP and Sub-plans for that stage have been submitted to or approved by the Secretary.	Section 4.3.1	Construction will not commence until the CEMP and the sub plans specified in CoA C3 are approved by the Secretary.

CoA No.	Requirement	Reference	How Addressed
B11	A website providing information in relation to the CSSI must be established before commencement of works and maintained for the duration of construction, and for a minimum of 24 months following the completion of construction. Up-to-date information (excluding confidential commercial information) must be published before the relevant works commence, and maintained on the website or dedicated pages including:	Section 6.3	The Project website (http://www.parramattalightrail.nsw.gov.au) includes current information on the Project. This website will be maintained for the duration of construction and for a minimum of 24 months following the completion of construction. Additional details on the Project website are provided in the Community Communication Strategy.
(a)	information on the current implementation status of the CSSI;	Section 6.3	The Project website (http://www.parramattalightrail.nsw.gov.au) includes the current implementation status of the Project. Additional details on the Project website are provided in the Community Communication Strategy.
(b)	a copy of the documents listed in Condition A1 and Condition A2 of this approval, and any documentation relating to any modifications made to the CSSI or the terms of this approval;	Section 6.3	The Project website (http://www.parramattalightrail.nsw.gov.au) includes the current implementation status of the Project. Additional details on the Project website are provided in the Community Communication Strategy.
(c)	a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval;	Section 6.3	The Project website (http://www.parramattalightrail.nsw.gov.au) includes the current implementation status of the Project. Additional details on the Project website are provided in the Community Communication Strategy.

CoA No.	Requirement	Reference	How Addressed
(d)	a copy of each statutory approval, licence or permit required and obtained in relation to the CSSI;	Section 6.3	The Project website (http://www.parramattalightrail.nsw.gov.au) includes statutory approvals. In the event that licence(s) or permit(s) are obtained, documentation will be included on the Project Website. Additional details on the Project website are provided in the Community Communication Strategy.
(e)	a current copy of each approved document required under the terms of this approval and any endorsements, approvals or requirements from the ER, AA and Secretary, all of which must be published before the commencement of any works to which they relate or before their implementation as the case may be; and	Section 6.3	The Project website (http://www.parramattalightrail.nsw.gov.au) will include approved documents required under the CoA and any endorsements, approvals or requirements from the ER, AA and Planning Secretary includes statutory approvals. Additional details on the Project website are provided in the Community Communication Strategy.
(f)	a copy of the compliance reports required under Condition A30 of this approval. Information relating solely to construction may be removed from the website 12 months following the completion of construction.	Section 6.3	The Project website (http://www.parramattalightrail.nsw.gov.au) will include a copy of the compliance reports required under Condition A30. Additional details on the Project website are provided in the Community Communication Strategy.

1.3.2 Revised Environmental Mitigation and Management Measures

Relevant REMMMs are listed in Table 1-4. This includes reference to required outcomes, relevant documents or sections references and how addressed.

Table 1-4: REMMMs relevant to the CEMP

REMMM	Requirement	Reference	How addressed
GEN-1	A construction environmental management plan (CEMP) would be prepared for the construction phase of the Project. The CEMP would provide a centralised mechanism through which all potential environmental impacts would be managed. The CEMP would document mechanisms for demonstrating compliance with the commitments made in the Environmental Impact Statement), the submissions report, as well as any other relevant statutory approvals (e.g. conditions of approval, licences and permits). The CEMP would outline a framework for the management of environmental impacts during construction, including further details on the following: • Traffic, transport and access management. • Noise and vibration management. • Heritage management. • Air quality and dust management. • Soil and water management. • Flora and fauna management. • Waste and resource management. • Site compound and ancillary works management. • Landscape and temporary works management.	This CEMP Sub-Plans (see C3 for list)	This CEMP and management sub plans demonstrate how the construction of the Project will be carried out in accordance with the requirements of GEN-1. All relevant commitments are listed in each sub plan with a reference of where and how it is addressed.

REMMM	Requirement	Reference	How addressed
	• Emergency and incident response management. The CEMP would be prepared by the responsible contractor(s) and approved by the Secretary of the NSW Department of Planning and Environment.		
GEN-2	A construction compounds plan would be prepared for the Project as part of the overall CEMP. This sub-plan would set out details for each of the approved construction compounds, including stockpile areas, laydown areas and other ancillary activities required to construct the Project. The sub-plan would supplement, in greater detail, the information provided in the main body of the CEMP. The objectives and strategies of the construction compounds and ancillary facilities management sub-plan would include the following: • Minimise the impact of construction compounds on surrounding land uses and sensitive receivers. • Locate construction compounds away from sensitive land uses and receivers, wherever practical and feasible, or configure internal compound layouts in a manner that considers noise and light sensitive receivers (e.g. use of buildings to shield noisy activities, minimising the requirement for reversing vehicles, or locating noise intensive activities to maximise the distance to noise sensitive receivers). • Manage stockpile areas to minimise potential pollution of watercourses, groundwater and local air quality. • Minimise the clearing of vegetation (e.g. street trees and trees within public open spaces) to the minimum amount necessary to	Site Establishment Management Plan	A Site Establishment Management Plan has been prepared to set out details for each of the construction compounds, stockpile areas, laydown areas and other ancillary activities required to construct the Project. The SEMP identifies the environmental mitigation measures to minimise the impact of construction compounds on surrounding land uses and sensitive receivers.

REMMM	Requirement	Reference	How addressed
	construct the Project, particularly where construction compounds are proposed in public open spaces/parkland areas. • Locate construction compounds away from (or able to be managed in such a way so as to not impact on) heritage items and high retention value trees. • Locate construction compounds away from or implement management measures so as to not impact on waterways. • Flood response measures for compounds that are located on land affected by the 20-year ARI flood level (e.g. bridge support construction compounds). • Situate construction compounds and ancillary facilities on relatively level ground and avoid excavation in construction compounds where risk of heritage impacts or disturbance of contaminated material. • Minimise the visual impact of construction compounds and ancillary facilities through either siting such facilities away from sensitive receivers (where practical and feasible) and/or providing screening. • Reinstatement strategies for construction compounds. As a minimum, this would include: ◦ At the completion of construction, all plant, temporary buildings or vehicles would be removed. ◦ All land, including roadways, footpaths or other land having been occupied temporarily would be returned to their pre-existing condition or better.		

REMMM	Requirement	Reference	How addressed
	◦ Reinstatement of community spaces, infrastructure and services would occur as soon as possible after completion of construction. Environmental management measures for construction compounds would be developed as part of the overall CEMP, with the construction compounds sub-plan identifying where such measures are documented within the CEMP.		
GEN-3	Incident management procedures would be developed as part of the CEMP. The procedures would clearly outline the process to be followed in the event of an environmental incident or noncompliance, including (but not limited to) the following: • Classification of the incident (e.g. minor, moderate, serious) based on the severity of the likely impact on the surrounding environment and community. • Emergency response procedures. • Notification requirements (e.g. Transport for NSW and/or other regulatory authorities, or owners/occupiers in the vicinity of the incident). • Mechanisms for improving environmental controls to reduce the likelihood of a similar incident occurring. • Incident reporting and tracking.	Chapter 7	Section 7 sets out how environmental incidents will be managed.
BI-3	A flora and fauna management plan would be prepared as part of the CEMP. Specific measures would be identified in consultation with relevant government agencies. The flora and fauna management plan would include the following:	Flora and Fauna Management Plan	A Flora and Fauna Management Plan FFMP has been prepared together with the CEMP and will be submitted separately as a stand-along document.

REMMM	Requirement	Reference	How addressed
	• A requirement to prepare Environmental Control Maps in accordance with Transport for NSW's Guide to Environmental Control Map. The maps would delineate ecologically sensitive areas (such as habitat areas or locations of threatened species, populations or ecological communities), clearing extents, vegetation to be retained, and any other no-go areas. • Procedures for the clearing of vegetation and the relocation of flora and fauna. Where possible, the removal of native vegetation would be minimised as far as practicable. Measures to minimise the removal of native vegetation would include: ◦ Use of high visibility fencing (such as barrier mesh) to delineate vegetation to be retained or limits of clearing. ◦ A trained ecologist would accompany clearing crews in order to ensure disturbance is minimised and to assist any native animals to relocate to adjacent habitat. • Measures to reduce disturbance to sensitive fauna. • Rehabilitation requirements, including identification of flora species and sources, and measures for the management and maintenance of rehabilitated areas (including for example a program of weed removal and monitoring). • Weed management measures focusing on monitoring for early identification of invasive weeds and pathogens and detailed effective management controls for minimising the risk of introducing weeds and pathogens.		This FFMP provides mitigation measures to minimise impacts on flora and fauna from the construction of the Project.

REMMM	Requirement	Reference	How addressed
	• Procedure for dealing with unexpected identification of Endangered Ecological Communities or threatened species during construction. • Auditing and monitoring of the plan.		
AB-2	An Aboriginal and non-Aboriginal heritage management plan would be prepared as part of the CEMP. Specific measures would be identified in consultation with NSW Environment, Energy and Science Group (DPIE) (OEH) and other relevant government agencies. As relevant, the plan would be developed in consultation with Registered Aboriginal Parties. The objectives and strategies of the plan would include the following: • Minimise impacts on items or places of heritage value. • Procedures for carrying out salvage or excavation of heritage relics or sites (where relevant) and any recordings of heritage relics prior to works commencing that would impact the heritage relic or site. • Procedures for interpretation of heritage values uncovered during salvage or excavation during detailed design. • Details on management measures to be implemented to prevent and minimise impacts on heritage items (including further heritage investigations, archival recordings and/or measures to protect unaffected sites during construction works in the vicinity). • Procedures for unexpected heritage finds, including procedures for dealing with human remains (and burials). The Transport for	Heritage Management Plan Aboriginal Heritage Management Plan	Heritage and Aboriginal Heritage Management Sub Plans have been prepared together with the CEMP and will be submitted separately as a stand-along documents. The HMSP and AHSP provide mitigation measures to minimise impacts on heritage items from the construction of the Project and will be implemented for the duration of the Project.

REMMM	Requirement	Reference	How addressed
	NSW Unexpected Heritage Finds Guideline (2014) would be implemented. • Procedures for the reinstatement of areas of heritage value that would be temporarily impacted by construction following the completion of construction. • Heritage monitoring and auditing requirements.		
HY-5	The CEMP would include soil and water management measures to manage the risk of sedimentation, littering and chemical pollution of the Parramatta River, Clay Cliff Creek, Vineyard Creek and other nearby waterways within the study area during construction.	Soil and Water Management Plan	A Soil and Water Management Plan has been prepared together with the CEMP and will be submitted separately as a stand-along document. The plan includes management measures to manage the risk of sedimentation, littering and chemical pollution.
HY-6	A soil and water management plan would be prepared as part of the CEMP. Specific measures would be identified in consultation with relevant government agencies and would be consistent with the principles and practices detailed in Landcom's (2004) Managing Urban Stormwater: Soils and Construction. The objectives and strategies of the soil and water management sub-plan would include the following: • Minimise the extent and duration of exposed surfaces (particularly those works that have the greatest potential to disturb soils that are contaminated or have a high erosion and runoff hazard).	Soil and Water Management Plan	A Soil and Water Management Sub Plan has been prepared together with the CEMP and will be submitted separately as a stand-along document. The plan includes management measures to minimise impacts on soil and water from the construction of the Project which will be implemented for the duration of the Project and are consistent with the principles and practices detailed in Landcom's (2004) Managing Urban Stormwater: Soils and Construction.

REMMM	Requirement	Reference	How addressed
	• Develop and implement adequate water quality control measures prior to the carrying out of significant earthwork or bridge construction activities. • Minimise and manage impacts on water quality and downstream receiving environments during instream activities. • Flood response measures for activities located on land affected by the 20-year ARI flood level (e.g. bridge support construction compounds) or works within waterways (such as bridge works). • Where possible, reuse excavated materials as fill on other parts of the Project in preference to disposing off-site in accordance with OEH's *Waste Classification Guidelines (2016).* • Areas of potential contamination concern would be identified and works in these areas managed to minimise disturbance. • Excavate pre-classified contaminated materials and transfer such materials directly into haulage trucks for off-site disposal at a waste facility licensed to accept the contaminated material. • Transport for NSW would also undertake consultation with DPI Fisheries with respect to the development for the CEMP, and Erosion and Sediment Control Plan for the Project. • Develop procedures for the assessment, handling and stockpiling of potentially contaminated materials, in accordance with OEH's *Waste Classification Guidelines (2016).*		
WM-2	A waste and resource management plan would be prepared for the Project as part of the overall CEMP. This plan would set out details for managing waste generation and resource consumption. The plan would be informed by the Parramatta Light Rail Sustainability Plan	Waste and Resource	A Waste and Resource Management Plan has been prepared together with

REMMM	Requirement	Reference	How addressed
	and the requirements of the Waste Avoidance and Resource Recovery Act 2001. The objectives and strategies of the waste and resource management plan would include the following: ◦ Construction waste would be managed through the waste hierarchy established under the Waste Avoidance and Resource Recovery Act 2001 management hierarchy. ◦ Classification of waste during construction in accordance with the current guidelines ◦ Segregation of waste into stockpiles of spoil, concrete, steel, timber, paper and cardboard and vegetation to make it easier to recycle components and prevent cross contamination. ◦ Procurement of materials would be carried out on an 'as needed' basis to reduce over-ordering and wastage, and exploring opportunities to reuse materials, where applicable. • Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil. A Construction Waste, Reuse, Recycling and Energy Plan would be prepared as part of the CEMP. It would ensure resource and materials use, waste disposal and energy use are minimised by tracking and reporting performance, and applying corrective action as required. • Identification of carbon and energy strategies and initiatives to minimise carbon and energy use associated with construction (e.g. selection of equipment, inclusion of renewable energy sources to power temporary facilities and equipment, designing site offices for energy efficiency, and efficient operation of vehicles and equipment).	Management Plan	the CEMP and will be submitted separately as a stand-along document. This plan sets out details for managing waste generation and resource consumption on the Project. The plan was informed by the Parramatta Light Rail Sustainability Plan and the requirements of the *Waste Avoidance and Resource Recovery Act 2001*.

REMMM	Requirement	Reference	How addressed
	• Consideration of materials mitigation and management measures including use of recycled materials, recycling and reuse of materials on site, use of materials with lower embodied impact, and consideration of whole of life costs during procurement. • Prior to disposal/removal or reuse off-site, all wastes would be classified in accordance with the waste classification guidelines (*Waste Classification Guidelines (OEH, 2016) and Waste Avoidance and Resource Recovery Strategy 2014-2021 (EPA, 2014*) to ensure the most appropriate disposal or reuse option. • Monitoring and compliance requirements.		
HR-5	Environmental management measures relating to hazards and risk would be developed and implemented as part of the CEMP. These would include: • Potential environmental hazards and risks associated with construction activities would be identified prior to construction. • The storage of hazardous materials, and refuelling/maintenance of construction plant and equipment would be carried out in clearly marked and bunded areas within the construction site that are designed to contain spills and leaks in accordance with Australian Standards and DECCW guidelines. • Hazardous materials would not be stored below the ten per cent AEP flood level flood level. • Chemical spill kits would be readily available and accessible to construction workers. Kits would be kept at site compounds and on specific construction vehicles, and all hazardous materials	Section 3.5 Sub-Plans required under CoA C3.	An Environmental Risk Assessment (ERA) was prepared for the project to identify hazards and risks, and to develop appropriate management measures (Appendix A2). The environmental management measures identified in the ERA have been incorporated into the CEMP and relevant sub plans. The SWMP provides management measures for the storage of hazardous materials, refuelling/maintenance of construction plant and spill response. The ECM will provide the location of hazardous material storage and the location of spill kits. ECMs will be

REMMM	Requirement	Reference	How addressed
	spills and leaks would be reported to site managers and actions would be immediately taken to remedy spills and leaks. • Employees would be trained in the correct use of spill kits.		prepared and maintained through the project EMS.
HR-6	A process for regularly reviewing work practices/procedures would be implemented throughout construction to identify, report and respond to any new environmental hazards/risks.	Section 3.5, 7.5, 9.1, 9.2 Sub plans	An ERA was prepared for the project. The ERA will be revised every six months, or in response to an incident.
CC-2	Construction-related climate change risks (e.g. increased frequency and severity of extreme rainfall events placing increased pressure on construction water quality control measures) would be considered during the development of environmental management measures as part of the CEMP.	Section 3.5 Appendix A2 Sub plans	The ERA has addressed climate change risk and the corresponding mitigation measures have been incorporated into the management sub plans.
VL-13	A landscape and temporary works management plan would be developed as part of the CEMP. The plan would include the following: • Approaches to temporary construction works (hoardings etc.) that consider urban design and visual impacts, including: ◦ Artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations. ◦ Project information to raise awareness on benefits, explain the proposed works at each site and provide updates on construction progress.	Landscape and Temporary Works Plan	The Landscape and Temporary Works Plan has been prepared together with this CEMP and can be provided for information if requested by DPIE.

REMMM	Requirement	Reference	How addressed
	◦ Community information, including contact numbers for enquiries/complaints. ◦ Signage and information to mitigate impacts on local businesses which may be obscured by the construction site. • Apply the principles of crime prevention through environmental design (CPTED) to all works, including temporary works that have a public interface. • Apply the principles of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant safety design requirements and detail mitigation and management measures to minimise lighting impacts on sensitive receivers for all permanent, temporary and mobile light sources. • Wherever feasible and reasonable, vegetation around the perimeter of the construction sites will be maintained. • Measures to minimise direct and visual impacts on heritage items from works within the curtilage of or in the vicinity of heritage items. • Regular inspections of construction hoardings and scaffolding to keep it clean and free of dust build up, with graffiti on construction hoardings and scaffolding to be removed or painted over promptly.		
AQ-1	An air quality and dust management plan would be developed and implemented as part of the CEMP. This plan would identify triggers and procedures for dealing with significant dust generating activities, with the aim of minimising impacts on surrounding sensitive receivers. Air quality and dust management measures that would be identified in the CEMP would include:	Air Quality Management Plan	An Air Quality Management Plan has been prepared together with the CEMP and will be submitted separately as a stand-along document. The plan identifies triggers and procedures for dealing with significant

REMMM	Requirement	Reference	How addressed
	• Apply wheel-wash or rumble grid facilities as appropriate to remove loose material and prevent the tracking of spoil debris onto local roads. • Clean loose materials and debris from the tailgate of vehicles unloading materials to stockpiles prior to departure from site. • Conduct routine servicing and maintenance, and subsequent inspections to ensure that equipment continues to operate efficiently. • Ensure that all loads are covered when materials are being hauled to and from site. • Ensure that compound area surfaces are well compacted or sealed to limit the potential for dust generation. • Ensure that structures are inspected by a suitably qualified person to confirm that they do not contain any hazardous materials (e.g. asbestos) which could be broken and mobilised during demolition. Where such materials are identified, adhere to the requirements for removal and disposal listed in the Work Health and Safety Act 2011, and Work health and Safety Regulation 2011. • Impose low speeds limits around compound sites to limit the generation of dust from vehicle movements. • Install dust monitoring devices to quantify dust levels and determine whether control measures are adequate or whether further actions are required. • Installation of perimeter screening around areas where there is a potential to generate emissions to air and around long-term compound and stockpile locations.		dust and air pollution generating activities, with the aim of minimising impacts on surrounding sensitive receivers and the environment.

REMMM	Requirement	Reference	How addressed
	• Plan activities and avoid adversely windy conditions which may result in the generation of off-site dust impacts. • Position stockpiling areas as far as possible from surrounding receivers. • Regularly water exposed and disturbed areas and stockpiles especially during inclement weather conditions. • Water demolition areas as necessary to minimise the generation of dust. • Wherever possible and practical, limit the amount of materials stockpiled, extent of disturbed and exposed surfaces. Restoration of cleared areas is to occur as soon as possible. • Apply odour supressing agents to materials as necessary to minimise related impacts should any contaminated or hazardous materials be uncovered during the works. • Construction plant and equipment would be well maintained and regularly serviced so that vehicular emissions remain within relevant air quality guidelines and standards. • All vehicles used on site, for transporting materials to or from site, or for any other activities associated with the Project, shall be maintained to avoid the emission of excessive air impurities in accordance with Part 5.8 of the Protection of the Environment Operations Act 1997 and the Protection of the Environment Operations (Clean Air) Regulation 2010. • All on-road trucks would comply with the relevant Australian emission standards.		

REMMM	Requirement	Reference	How addressed
	• All chemicals and fuels would be stored in sealed containers as per appropriate regulations and guidelines. • The on-site storage of fuel would be kept to a minimum. • Unloading of fuels (diesel or liquefied nitrogen gas (LNG)) would be vented via return hoses that recirculate vapours from delivery to receiver. • On dry days, unsurfaced haul roads would be watered to aid dust suppression. • Stockpiles left for extended periods would be grassed or covered with appropriate material. • Chemical/fuel storage tanks would be fitted with a conservation vent (to prevent air inflow and vapour escape until a pre-set vacuum or pressure develops).		
GG-4	Management of emissions would be incorporated into site inductions, training and pre-start talks.	Section 5.1	Sustainability requirements, including reducing greenhouse gas emissions by implementing energy efficient practises will be included in the project induction

1.3.3 Environmental Performance Outcomes

Relevant EPOs are listed in Table 1-5. This includes reference to required outcomes, relevant documents or sections references and how addressed.

Table 1-5: EPOs relevant to the CEMP

EPO	Requirement	Reference	How addressed
EPO-TT-1 Construction	The project would implement measures to minimise impacts on the road network, including staging	Transport and Access Management Plan	This EPO requirement is addressed in the Traffic, Transport and Access Management Plan prepared together with the CEMP and submitted separately. The plan includes management measures to minimise impacts on the road network.
EPO-TT-2 Construction	Pedestrian and cyclist safety would be maintained.	Transport and Access Management Plan	This EPO requirement is addressed in the Traffic, Transport and Access Management Plan prepared together with the CEMP and submitted separately. The plan includes management measures to maintain pedestrian and cyclist safety.
EPO-TT-3 Construction	Effective coordination would be carried out to minimise cumulative network impacts.	Transport and Access Management Plan	This EPO requirement is addressed in the Traffic, Transport and Access Management Plan prepared together with the CEMP and submitted separately. The plan includes management measures to minimise cumulative network impacts.

EPO	Requirement	Reference	How addressed
EPO-TT-4 Construction	Access to property would be maintained	Transport and Access Management Plan	This EPO requirement is addressed in the Traffic, Transport and Access Management Plan prepared together with the CEMP and submitted separately. The plan includes management measures to maintain property access.
EPO-NV-1 Construction	Noise levels would be minimised with the aim of achieving the noise management levels where feasible and reasonable.	Noise and Vibration Management Plan	This EPO requirement is addressed in the Noise and Vibration Management Sub Plan prepared together with the CEMP and submitted separately. The plan includes management measures to ensure noise levels would be minimised with the aim of achieving the noise management levels where feasible and reasonable.
EPO-NV-2 Construction	The project would avoid any damage to buildings or heritage items from vibrations.	Noise and Vibration Management Sub Plan	This EPO requirement is addressed in the Noise and Vibration Management Plan (CNVMP) prepared together with the CEMP and submitted separately. The plan includes management measures to avoid any damage to buildings or heritage items from vibrations.
EPO-HE-2	The project would be sympathetic to heritage items and, where feasible and reasonable, avoid and minimise impacts to non-Aboriginal heritage items and archaeology.	Heritage Management Plan	This EPO requirement is addressed in the Heritage Management Plan prepared together with the CEMP and

EPO	Requirement	Reference	How addressed
			submitted separately. The plan includes management measures to minimise impacts to heritage items during construction. Not applicable to Stage 3 Activity A under Staging Report Revision 7.02 (May 2020).
EPO-AB-1	The project would be sympathetic to heritage items and, where feasible and reasonable, avoid and minimise impacts on Aboriginal heritage items and archaeology.	Aboriginal Heritage Management Plan	This EPO requirement is addressed in the Aboriginal Heritage Management Plan (AHMP) prepared together with the CEMP and submitted separately. The plan includes management measures to minimise impacts to Aboriginal heritage items and archaeology during construction.
EPO-HY-1	No aspect of the project would materially adversely affect existing flood behaviour in the vicinity of the project.	Flood Management Plan	This EPO requirement is addressed in the Flood Management Plan (FMP) prepared together with the CEMP and submitted separately. The plan includes management measures to ensure the project would not materially adversely affect existing flood behaviour in the vicinity of the project.
EPO-LU-2	Access to private property would be maintained.	Transport and Access Management Plan	This EPO requirement is addressed in the Traffic, Transport and Access Management Plan (TTAMP) prepared

EPO	Requirement	Reference	How addressed
			together with the CEMP and submitted separately. The plan includes management measures to maintain property access.
EPO-BI-1	The project would minimise impacts on biodiversity through the implementation of relevant mitigation measures and the implementation of the Biodiversity Offset Strategy (BOS) for the project.	Flora and Fauna Management Plan	Not triggered by SOM Contract under Staging Report Revision 7.02 (May 2020).
EPO-SG-1	Erosion and sediment controls during construction would be implemented in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008a).	Soil and Water Management Sub Plan	This EPO requirement is addressed in the Soil and Water Management Plan (SWMP) has been prepared together with the CEMP and submitted separately. This plan provides mitigation measures to minimise impacts on soil and water from the construction of the Project and is consistent with the principles and practices detailed in *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom, 2004) and *Managing Urban Stormwater: Soils and Construction Volume 2* (Department of Environment and Climate Change, 2008a).
EPO-SG-2	There would be no impacts on aquatic environments associated with the disturbance of ASS during construction.	Soil and Water Management Plan	This EPO requirement is addressed in the Soil and Water Management Plan

EPO	Requirement	Reference	How addressed
		Contaminated Land Management Plan	(SWMP) and Contaminated Land Management Plan (CLMP) prepared together with the CEMP and submitted separately. The plans provide mitigation measures to ensure there are no impacts on aquatic environments associated the disturbance of ASS during construction.
EPO-SG-3	Any contamination on project sites would be remediated to suit future land use.	Contaminated Land Management Plan	This EPO requirement is addressed in the Contaminated Land Management Plan (CLMP) prepared together with the CEMP and submitted separately. The plan details the required remediation associated with the construction of the Project.
EPO-SU-1	The project would be carried out in accordance with the Parramatta Light Rail Sustainability Strategy.	Section 4.4.3 Ref PLR1SOM-GLR-ALL-PM-PLN-000015	TfNSW will prepare the Sustainability Strategy (to comply with CoA E136) for the PLR including the Project. However, the management of sustainability requirements associated with the design and delivery of the Project have been addressed in the Sustainability Management Plan. This management plan will demonstrate how the relevant commitments in the Sustainability

EPO	Requirement	Reference	How addressed
			Strategy (CoA 136) and the TfNSW Standard Requirements 4.1 (a) will be implemented on this Project. Regular monitoring, auditing and reporting on energy, resource use and associated greenhouse gas emissions as required by the Infrastructure Sustainability Council of Australia (ISCA) rating of 70 are addressed in the PLR Sustainability Strategy and the Project's Sustainability Management Plan.
EPO-SU-2	The project would comply with the relevant requirements of the NSW Government Resource Efficiency Policy.	Waste and Resource Management Plan	This EPO requirement is addressed in the Waste and Resource Management Plan (WRMP) prepared together with the CEMP and submitted separately.

2 Project Description

2.1 General Features and Construction Activities

The Project (subject of this Plan) includes the construction of the following:

- Maintenance and Stabling Facility
- Traction Power Substations (TPS)
- Light rail stops above slab level
- Overhead wire, conductors and insulator installation
- Back Up Operating Centre (BOCC).

Table 2-1 provides an overview of the general features of the Project.

Table 2-1: Overview of the Project

Main works area	Site establishment	Earthworks and subsurface works	Surface works	Rail systems	Structures	Stops
Stabling and Maintenance Facility (The facility will provide for maintenance, repair, refurbishing, upgrading, stabling, cleaning of light rail vehicles and a base for	Site office and amenities	• Combined service route • Drainage • Hydraulics (sewer, water, fire)	• Fencing • Service roads • Footpaths • Carparks • Landscaping • Substation – TPS 8	• Track • Overhead wiring • DC feeders	• Maintenance building (construction of foundation and slab, structural frame, roofing and cladding, MEP fit out, finishes) • Outbuildings (fire pump	None.

Main works area	Site establishment	Earthworks and subsurface works	Surface works	Rail systems	Structures	Stops
infrastructure maintenance activities and will operate 24 hours a day and 7 days a week)					house, sanding plant building, cleaners store, train wash building)	
Corridor Zone 1 (Westmead to Riverside Theatre)	A construction site will be established at each stop and TPS location.	TPS: • Substructure construction • Connection to previously constructed or existing utilities including drainage and Combined Services Route (CSR)	Substation – TPS 1 & TPS 2: • Installation of architectural screening, security fencing and lighting • Landscaping (only at TPS 2)	Overhead wiring: • Cumberland Hospital stop to Prince Alfred Square stop. Note: From Westmead Terminus Stop to Cumberland Hospital Stop is a wire free zone. DC feeder reticulation: • TPS 2 to Prince Alfred Square stop • TPS 2 to Cumberland Hospital stop • TPS 2 to TPS 1	Stops: • Prefabricated column and canopy placement • Installation of wind break screens and lighting • Connection to previously constructed or existing utilities • Stop fit out	• Westmead Terminus • Westmead Hospital • Westmead Children's Hospital • Cumberland Hospital • Factory Street • Fennel Street • Prince Alfred Square

Main works area	Site establishment	Earthworks and subsurface works	Surface works	Rail systems	Structures	Stops
				• TPS 1 to Westmead Terminus stop		
Corridor Zone 2 (Riverside Theatre to Robin Thomas Reserve)	A construction site will be established at each stop and TPS location	TPS: • Substructure construction • Connection to previously constructed or existing utilities including drainage and CSR	Substation – TPS 3: • Installation of architectural screening security fencing and lighting • Landscaping and seating	DC feeder reticulation: • Tramway Avenue stop to TPS 3 • TPS 3 to Prince Alfred Square Note: No overhead wiring in this zone (wire free)	Stops: • Prefabricated column and canopy placement • Installation of wind break screens and lighting • Connection to previously constructed or existing utilities • Stop fit out	• Eat Street • Parramatta Square • Harris Street
Corridor Zone 3 (Robin Thomas Reserve to Parramatta River)	A worksite will be established at each stop and TPS location	TPS: • Surface clearing and grubbing (note: all trees and existing structures will be removed by the Infrastructure Contractor	Substation – TPS 4: • Installation of architectural screening security fencing and lighting • Landscaping	• Overhead wiring - Tramway Avenue to Camellia stop • DC feeder reticulation – TPS 4 to	Stops: • Prefabricated column and canopy placement • Installation of wind break screens and lighting	• Tramway Avenue • Camellia

Main works area	Site establishment	Earthworks and subsurface works	Surface works	Rail systems	Structures	Stops
		before SOM commence work, and are therefore not covered by the scope of this CEMP) • Substructure construction • Connection to previously constructed or existing utilities including drainage and CSR		Tramway Avenue stop	• Connection to previously constructed or existing utilities • Stop fit out	
Corridor Zone 4 (Sandown Rail Line)	N/A	N/A	N/A	• Overhead wiring - Sandown Rail Line • DC feeder reticulation - Sandown Rail Line	N/A	N/A
Corridor Zone 5 (North of	A worksite will be established at each stop	TPS: • Surface clearing and grubbing	Substation – TPS 6 & TPS 7:	• Overhead wiring	Stops: • Prefabricated column and	• Rydalmere • Dundas

Main works area	Site establishment	Earthworks and subsurface works	Surface works	Rail systems	Structures	Stops
Parramatta River to Carlingford)	and TPS location	(note: all trees and existing structures will be removed by the Infrastructure Contractor before SOM commence work, and are therefore not covered by the scope of this CEMP) • Substructure construction • Connection to previously constructed or existing utilities including drainage and CSR	• Installation of architectural screening security fencing and lighting • Landscaping	◦ Camellia stop to Rydalmere stop ◦ Rydalmere stop to Dundas stop ◦ Dundas stop to Telopea stop ◦ Telopea stop to Carlingford stop • DC feeder reticulation ◦ TPS 6 to field switches ◦ TPS 7 to TPS 6 ◦ TPS 7 to Carlingford stop	canopy placement • Installation of wind break screens and lighting • Connection to previously constructed or existing utilities • Stop fit out	• Telopea • Carlingford

Main works area	Site establishment	Earthworks and subsurface works	Surface works	Rail systems	Structures	Stops
Back Up Operations Centre	A temporary work site will be established at the BOCC site	• Surface clearing and grubbing (note: all trees and existing structures will be removed by the Infrastructure Contractor before SOM commence work, and are therefore not covered by the scope of this CEMP) • Substructure construction • Connection to previously constructed or existing utilities	N/A	Connection to the existing CSR	• Structural concrete works and brickwork • Structural steel installation • Roofing • Internal fit out • Utilities connection	N/A

2.2 Construction Sequencing

An indicative construction programme is provided in **Table 2-2**. This program is consistent with the Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Staging Report (Project Wide) Revision 7.02 – May 2020.

Table 2-2: Indicative construction programme

Main works area	Start date	Finish date
Package 5 – Activity A (SaM facility only)	Q1 2021	Q4 2023
Package 5 – Activity B (Full alignment)	Q3 2021	Q4 2022

2.3 Ancillary Facilities

Table 2-3 provides a list of the ancillary facilities that would be required by the Project during the construction of the SaM Facility site and the corridor works. Each facility would be established in accordance with the Site Establishment Management Plan (SEMP) which has been developed for this Project and planning approval will be sought for those sites not listed in the EIS.

Table 2-3: Ancillary facilities

Facility location	Start date	Finish date
6 Grand Avenue, Camellia	01 August 2020	August 2022
8 Colquhoun Street, Rosehill	01 August 2020	August 2022
Cumberland Hospital Base	04 April 2022	October 2022
O'Connell Street Base	02 May 2022	November 2022
Adderton Road Base	06 October 2021	March 2022

Note: The process for approval of minor ancillary facilities is detailed in the Site Establishment Management Plan (SEMP).

3 Planning

3.1 Project Environmental Obligations

All personnel involved in the Project must adhere to the Project's environmental requirements, including:

- No work will commence without relevant environmental approvals, permits or licences in place
- Everyone holds responsibility to understand the project obligations and to ensure the necessary controls are in place to meet these obligations
- Before commencing work ensure environmental risks have been assessed and corresponding controls are in place to mitigate the risk to an acceptable level
- Comply with all project procedures
- Report all environmental incidents immediately
- Comply with all relevant environmental legislation, at all times
- Undertake and provide training to all employees on environmental requirements
- Hold each other accountable for environmental management
- Understand usage of energy and water and plan to use it in the most efficient manner practical to meet our sustainability targets.

3.2 Legal and Other Requirements

A register of relevant legislation for the Project is contained in Appendix A1. This register will be reviewed at regular intervals, such as during management reviews and after audits, and updated with any applicable changes in legislation. Any changes made to the legal requirements register will be communicated to the wider project team, including subcontractors where necessary through toolbox talks, specific training and other methods detailed in Section 5 of this CEMP.

A number of environmental management sub-plans support the CEMP. These documents are prepared to identify requirements and processes applicable to specific impacts or aspects of the Project. These management sub-plans also contain details on relevant legislation.

A complete list of the Minister's CoA, REMMM and EPOs would be included in the Project's Compliance Tracking Program (CTP). The CTP is managed by TfNSW and has been provided to DPIE for information,. The timing, compliance status, responsibility and evidence or reference of compliance would be included in the compliance reports undertaken as described in the CTP (Section 8.4).

3.3 Guidelines and Specifications

The main guidelines and specifications relevant to this CEMP include:

- Environmental Management Plan Guideline – Guideline for Infrastructure Projects (DPIE – April 2020)
- AS/NZS ISO14001: 2004, 'Environmental Management Systems - requirements with guidance for use'
- Post-approval requirements for State significant projects: Management Plan Guidelines (Draft March 2017).

- TfNSW Environmental Incident Classification and Reporting 9TP-PR-105
- TfNSW Guide to Environmental Incident and Non-compliance Reporting using the INX System 9TP-SD-005
- TfNSW Guide to Environmental Control Map (3TP-SD-015/8.0)
- AS/NZS 4360:2004 Risk Management Standards
- AS/NZS 3100:2009, Risk Management Principles and Guidelines (ISO 31000 – Risk Management)
- AS/NZS ISO 19011:2014 - Guidelines for Auditing Management Systems.

The sub plans to this CEMP also contain details of legislation, guidelines, standards and specifications relevant to each sub-plan.

3.4 Approvals, Permits and Licensing

In addition to the Project Planning Approval, provided to TfNSW by DPIE on 29 May 2018, as modified 21/12/18 and 25/01/19, GRCLR is required to secure the following permits and licences listed in Table 3-1.

Table 3-1: Approvals, Licenses, Permits and Requirements

Regulatory authority	Approvals/licences required
DPIE	The Planning Approval was issued by the DPIE on 29/05/18 and modified on 21/12/18 and 25/01/19.
Environment Protection Authority (EPA)	Based on Clause 33(4)(d) of Schedule 1 of the *POEO Act* the Project is only required to have an Environment Protection Licence for the construction of the signalling and rail systems.
Roads and Maritime Services (RMS)	Section 138 of the *Roads Act 1993* requires that GRCLR obtain consent of the appropriate roads authority for the erection of a structure, or the carrying out of a work in, on or over a public road, or the digging up or disturbance of the surface of a public road. If the applicant is a public authority, the roads authority must consult with the applicant before deciding whether or not to grant consent or concurrence. Parramatta Light Rail Project Collaboration Agreement between TfNSW and RMS provides for authorisation for RMS to use its Road Authority power for works along the corridor and in the areas of Off Corridor Works.
Rural Fire Service	Exemption to allow hot works to be undertaken on total fire ban days as detailed under Section 99 of the *Rural Fires Act 1997* will be sought, if required.

The following authorisations are not required for CSSI projects and therefore are not applicable to this Project:

- The concurrence under Part 3 of the *Coastal Protection Act 1979* of the Minister administering that Part of that Act
- A permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*
- An approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*
- An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*
- An authorisation referred to in section 12 of the *Native Vegetation Act 2003* (or under any Act repealed by that Act) to clear native vegetation or state protected land
- A bush-fire safety authority under section 100B of the *Rural Fires Act 1997*
- A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act 2000*.

3.5 Environmental Aspect and Impacts

An environmental risk assessment workshop was held on 21 February 2020 focussing on Activity A, being the SaMF. The ERA is a live document and ongoing review will be undertaken every six months and prior to key construction milestones, to ensure any changes to the risks are identified as the Project progresses and is included in this CEMP. The ERA will also be reviewed in response to significant issues, incidents and non-compliances. This ongoing review will include TfNSW, the ER and key construction personnel. The ERA was reviewed in October 2020 with consideration to both Activity A and Activity B works and was updated accordingly to accommodate both SaMF and whole of alignment risks.

Key aspects identified include:

- Noise impacts from out of hours works;
- Uncontrolled discharge of water from site;
- Contaminated land and water management;
- Dust and air quality impacts;
- Impact on local roads from construction traffic (light and heavy vehicles).

The environmental risk assessment workshop was undertaken by GRCLR staff, and key D&C contractors, from the following disciplines:

- Planning, environment and sustainability;
- Construction management;
- Program and planning;
- Design;
- Safety; and
- Project Directors.

Each activity was assessed to identify the relevant steps in the activity and the associated environmental hazards, initial risk levels, mitigation measures and to avoid, manage and/or minimise the risks and residual risks. Each of these items is documented in the environmental risk register (Appendix A2). Where relevant, the requirements from the Deed, CoA and REMMM will be incorporated into the environmental risk assessment, particularly in developing the specific site controls.

3.6 Environmental and Sustainability Policy

The GRCLR Environmental and Sustainability Policy (provided in Appendix A3) was issued on 28 November 2019 and has been signed by the GRCLR Project Director. Details on the policy are provided in 3.6.1 and 3.6.2.

3.6.1 **Intent**

GRCLR will design, construct, operate and maintain a world-class light rail network that empowers prosperity for the Greater Parramatta Area and supports the realisation of the Future Transport 2056 Strategy.

GRCLR is committed to ensuring an environmentally sustainable future for Parramatta Light Rail, our customers and the Greater Parramatta Area.

3.6.2 **Policy**

To achieve the intent, GRCLR will:

- Lead effectively and live our accountabilities and responsibilities at all levels of the organisation, starting with the directors through to employees and subcontractors. This includes all upholding the principles of social sustainability and social accountability across our workforce, our activities and our supply chain
- Comply with all environmental requirements included in relevant legislation, the Conditions of Approval, and the Environmental Impact Statement
- Integrate sustainability across all GRCLR activities, including design, construction, procurement, commissioning, operations and maintenance
- Collaborate with and proactively engage with all stakeholders at all levels
- Create a culture of continuous improvement for environment and sustainability management
- Understand, comply with and embrace our environment and sustainability responsibilities
- Establish annual objectives for environmental management and regularly verify the compliance and effectiveness of the measures to ensure that objectives are met
- Promote an environmentally aware, sustainability-focused culture within GRCLR, stakeholders, customers and the Greater Parramatta community
- Commit to the prevention of pollution, protection of biodiversity, implementation of restorative actions, minimisation of resource use, and enhancement of climate change resilience through adaptation and mitigation across the delivery of works
- Plan effectively and provide and use the necessary resources to meet environmental objectives.

This policy will be communicated to and applies to all GRCLR employees and subcontractors and will be made publicly available on the GRCLR website.

3.7 Environmental Performance Criteria

As a means of assessing environmental performance during construction of the Project, environmental performance criteria have been established. The performance of the Project will be monitored against the performance criteria. Project performance monitoring will be documented in the Project construction compliance reports and at least on an annual basis as part of a management review.

The Project performance criteria are provided in **Table 3-2**. Performance criteria for specific aspects of the Project are incorporated into relevant environmental management sub-plans.

Table 3-2: Environmental Criteria and Targets

Criteria	Target
Environmental inspection and audit action close-out rate	>85% of actions closed out within agreed timeframes
Environmental incidents and non-compliances action close-out rate	>85% of actions closed out within agreed timeframes
Attendance and pro-active participation rate at TfNSW/ER/environmental management coordination/Environmental Reference Group meetings	>85% attendance and pro-active participation
ISCA rating	Achieve an ISCA score of 70 (as built)
Construction of the Project in accordance with Planning Approval.	Full compliance with Planning Approval
Compliance with all legal requirements	No regulatory infringements (PINs or prosecutions).
Engage with the affected and broader community, minimise complaints and community impacts	Disseminate regular Project updates and other information through the Project website and other tools identified in the Communications and Engagement Plan. Record and respond to complaints within the timeframe specified in the Community Communication Strategy.

3.8 Project Refinements

Refinements to the Project may result from a change in circumstances during construction, value engineering or outcomes from preceding work packages. Changes would be communicated to the D&C Environment Manager or environment team either through formal change processes or via informal communications.

Any proposed changes would be assessed for consistency against the approved Project. The GRCLR Environment and Sustainability Manager will undertake or direct the assessment of the proposed changes for potential impacts and compare them to the proposed impacts for the

approved Project. Where required a Consistency Assessment will be prepared and, in the first instance, provided to TfNSW for review and approval and the ER for information.

Changes that are not consistent with the Project Approval will require modification under Section 5.25 of the *EP&A Act* and determination by the Minister for Planning and Public Spaces. The ER will be informed, and a modification application prepared and be lodged by TfNSW to the Secretary for determination.

If required, the CEMP and sub-plans would be updated as required to incorporate any additional potential environmental impacts, mitigation and management measures that result from the proposed changes.

4 Implementation and Operation

4.1 Environmental Management System Overview

The Project will be managed in accordance with the GRCLR Integrated Management System (IMS) implemented for the SOM package and includes an Environmental Management System (EMS). The EMS will be adopted as the guiding environmental management framework for the Project. The EMS is compliant with AS/NZS ISO 9001 and AS/NZS ISO 14001:2015 and is integrated into the overall SOM IMS which includes assurance, quality and health and safety management systems.

The EMS will guide the development of the Project's governance documentation, including this CEMP and associated sub plans, procedures and management tools, to achieve the commitments established by the GRCLR Environment and Sustainability Policy, to ensure environmental performance and sustainability objectives and targets are achieved.

All works carried out on the site will be in accordance with:

- The CoAs, REMMMs and EPOs
- Client requirements as detailed in the contract
- GRCLR IMS.

4.2 Resources, Roles, Responsibilities and Authority

4.2.1 Roles and Responsibilities

The key environmental management roles and responsibilities for the construction phase of the Project are described in**Table 4-1**.

Organisational charts are located at Appendix A5.

Table 4-1: GRCLR Roles and Responsibilities

Title	Roles, responsibilities and authorities relevant to this plan
GRCLR Project Director	• Provide environmental leadership across the entire SOM package of works and ensure all SOM obligations under the CoA, legislation and contract to appropriately implement this CEMP are fulfilled.
GRCLR Communications Manager	• Ensure environmental complaints and enquiries regarding the establishment of ancillary facilities are recorded and responded to appropriately • Identify residential and/or commercial stakeholders who are adjacent to or adjoin the ancillary facilities and consult them prior to ancillary facilities establishment and on an ongoing basis • Lead the development of strategies and plans relating to community relations • Provide leadership in strategic planning and management of community relations considerations

Title	Roles, responsibilities and authorities relevant to this plan
	• Prepare community updates, social media posts, website updates, stakeholder emails, letterbox drops, advertisements • Produce community relations training material for project toolboxes and inductions • Provide community information to be communicated in regular toolbox meetings • Induct all personnel in community relations protocols and procedures • Maintain liaison with TfNSW Senior Communications Liaison Officer • Communicate with the construction team about receiving complaints and identify potential resolution options • Liaise with the D&C Environment Manager to ensure that adequate mitigation measures are in place • Consult with the ER to close out complaints and comply with the reporting, review and inspection requirements
GRCLR Environment and Sustainability Manager	• Provide environmental oversight, direction and leadership regarding the environmental management of the Project. • Ensure this CEMP satisfies legal and Project requirements and is implemented accordingly • Notify TfNSW, the Environmental Representative and agencies as required in response to environmental incidents • Act as the primary contact for TfNSW, Environmental Representative, Acoustic Advisor, Independent Arborist and Interface Contractors • Effectively oversee the development and implementation of the EMS • Review and oversee design and construction works, including testing and commissioning, to ensure compliance is adopted into operational phase for key aspects • Authority to take immediate action to shut down any activity and direct installation of pollution control measures • Provide specialist environment, planning and sustainability advice to the Project Director and other functional managers to facilitate the SOM works • Oversee the development, implementation, assessment and verification of sustainability measures for all works • Oversee the establishment of performance expectations, goals and standards for managing all potential adverse impacts • Oversee the environmental management and sustainability induction and training program

Title	Roles, responsibilities and authorities relevant to this plan
	• Oversee the preparation of environmental assessments on design changes and obtain any necessary planning approvals • Oversee environmental monitoring, inspections and audits • Oversee investigation and close out of any environmental complaints • Manage compliance tracking and reporting • Oversee the keeping of all environmental records • In consultation with the Project Director and Senior Construction Manager, oversee the investigation and reporting of environmental incidents • Attend all EPS meetings, inspections undertaken by the ER and monthly Environment Reference Group meetings • Interface and co-ordinate with INFRA and other PLR contractors to achieve environmental alignment and management of cumulative impacts (including, but not limited to: OOHW, heritage, tree impacts) • Meet all requirements and data collection required to achieve an ISCA score of 70 (as built) • Be the primary contact for the ER, IA and AA on behalf of GRCLR.
Design and Construct Environment Manager	• Is responsible for the on site environmental management and reports to the GRCLR Environment and Sustainability Manager • Ensure this CEMP is implemented, and that appropriate training is provided regarding the requirements of this Plan • Obtain all necessary environmental approvals prior to commencing ancillary facilities establishment • Ensure inspections, observations, monitoring and audits are performed so that compliance is maintained • Report, manage and close out all non-compliances • Review and update environmental risks and controls at regular intervals and key milestones • Act as the main point of site contact for the GRCLR Environment and Sustainability Manager • Ensure corrective and preventative actions are taken after incidents and lessons are shared with other projects or parent companies. • Assist in the development and delivery of environmental training and awareness • Conduct the environmental component of the site inductions.

Title	Roles, responsibilities and authorities relevant to this plan
	• Provide specialist environment, planning and sustainability advice to the construction and design managers to facilitate the delivery of the design and construction works • Manage the development, implementation, assessment and verification of sustainability measures for design and construction works • Ensure the performance expectations, goals and standards for managing all potential adverse impacts are effective and implemented • Undertake inspections, observations, monitoring and audits as required • meet with the construction team regularly to discuss upcoming construction activities, on-site environmental management, and any recent complaints or issues. Meeting minutes will be recorded and retained • Manage the development, implementation and updating of the ECMs.
Design and Construct Project Director	• Provide environmental leadership and ensure the SOM Design and construction works fulfils the obligations under the CoA, legislation and contract to appropriately implement this CEMP • Ensure adequate resources are provided to effectively implement this CEMP • Ensure the requirements of this CEMP is communicated to the supply chain • Authority to take immediate action to shut down any activity and direct installation of pollution control measures.
Senior Construction and Staging Manager	• Manage the delivery of the construction process including establishment of ancillary facilities • Ensure work is planned and executed to maintain compliance with environmental requirements. • Plan construction works in a manner that avoids or minimises impact to environment • Accountable for environmental controls • Responsible for environmental compliance and performance • Understand their environmental responsibilities as detailed in the management plans • Stop work immediately if an unacceptable impact on the environment is likely to occur • Actively ensure that subcontractors and suppliers are complying with environmental requirements

Title	Roles, responsibilities and authorities relevant to this plan
	• Liaise and co-operate with TfNSW and other government authorities as required • Be contactable 24hrs to shut down construction work in the event of an emergency • Work with the ER and comply with the reporting, review and inspection requirements
Civil Construction Team	• Ensure appropriate mitigation and management measures are implemented and maintained on site • Implement corrective or preventative actions as required to fulfil the requirements of this Plan. • Ensure appropriate mitigation and management measures are implemented and maintained on site • Ensure regular inspections and monitoring requirements are undertaken to check effectiveness of environmental controls • Report environmental incidents and complaints immediately. • Attend Project inductions and environmental awareness training relevant to the ancillary facility • Understand and comply with environmental responsibilities • Be aware of surrounding sensitive environmental and social constraints and act in a manner that minimises impacts to those sensitive areas • Notify their supervisor immediately of any environmental incidents, near misses and hazards.
TfNSW Representative	• Receive a copy of this CEMP • Review documentation provided by GRCLR, where required • Act as point of contact between TfNSW and GRCLR • Site inspections on behalf of TfNSW • Attendance at GRCLR project-management reviews • Represent the Project when engaging with DPIE and EPA • Review project-environmental performance • Manage all DPIE reporting requirements.

4.3 Responsibility and authority

A number of additional roles are required by the Project CoA and the GRCLR commitment to continuous improvement. The GRCLR will work closely with these people to identify and minimise environmental risk and associated impacts. These roles are detailed below.

TfNSW is the “Proponent” under the CoA with ultimate responsibility to DPIE for compliance with the Planning Approval.

4.3.1 **Environmental Representative**

CoA A19 to 22 requires a suitably qualified and experienced Environmental Representative (ER) to be engaged for the Project. The nominated and approved ER is independent of the design and construction personnel.

CoA A23 requires that for the duration of the works until after the commencement of operation, or as agreed with the Secretary, the approved ER must:

a) receive and respond to communication from the Secretary in relation to the environmental performance of the CSSI;
b) consider and inform the Secretary on matters specified in the terms of this approval;
c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and the community;
d) review documents identified in Table 2 and any other documents that are identified by the Secretary, for consistency, in the opinion of the ER, with requirements in or under this approval and if so:
e) make a written statement to this effect before submission of such documents to the Secretary (if those documents are required to be approved by the Secretary); or NSW Government 15 Department of Planning and Environment Conditions of Approval for Parramatta Light Rail (Stage 1) – CSSI 8285 CSSI 8285 MOD 1 –determined 21 December 2018 CSSI 8285 MOD 2 – determined 25 January 2019
f) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Secretary for information or are not required to be submitted to the Secretary);
g) regularly monitor the implementation of the documents listed in Table 2 to ensure implementation is being carried out in accordance with the document and the terms of this approval;
h) as may be requested by the Secretary, help plan, attend or undertake audits of the CSSI commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A41 of this approval;
i) as may be requested by the Secretary, assist the Department in the resolution of community complaints;
j) assess and, if acceptable, approve the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities or other ancillary facilities determined by the ER to have a minor environmental impact; and
k) prepare and submit to the Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing the information set out in the Environmental Representative Protocol under the heading “Environmental Representative Monthly Reports.” The Environmental Representative Monthly Report must be submitted within seven days following the end of each month for the duration of the ER’s engagement for the CSSI.

CoA A24 requires that the Proponent must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition A23 (including preparation of the ER monthly report), as well as:

a) the complaints register (to be provided on a daily basis); and
b) a copy of any assessment carried out by the Proponent of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work).

In addition to the conditions set out in the Planning Approval, GRCLR personnel will work with the ER and comply with the reporting, review and inspection requirements. The Environment Manager will be the primary contact for the ER on behalf of the project.

The CEMP will be endorsed by the ER and then submitted to the Secretary for approval no later than one month before the commencement of construction.

The CEMP will be consulted and involved in the preparation and implementation of the Out of Hours Works Protocol in accordance with CoA E28.

4.3.2 Acoustic Advisor

CoA A26 requires a suitably qualified and experienced Acoustics Advisor (AA) to be engaged for the duration of construction and for no less than six months following completion of construction in accordance with the Planning Approval. The nominated AA is independent of the design and construction personnel.

The CoA A29 requires the AA to fulfil the following requirements:

a) Receive and respond to communication from the Secretary about the performance of the CSSI in relation to noise and vibration;

b) Consider and inform the Secretary on matters specified in the terms of this approval relating to noise and vibration;

c) Consider and recommend, to the Proponent, improvements that may be made to work practices to avoid or minimise adverse noise and vibration impacts;

d) Consider consultation outcomes with affected receivers to determine the adequacy of noise mitigation and management measures including work hours and respite periods;

e) Review all noise and vibration documents required to be prepared under the terms of this approval and, should they be consistent with the terms of this approval, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary);

f) Regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of this approval to ensure implementation is in accordance with what is stated in the document and the terms of this approval;

g) In conjunction with the ER, the AA must:

    i. as may be requested by the Secretary, help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits;

    ii. if conflict arises between the Proponent and the community in relation to the noise and vibration performance during construction of the CSSI, follow the procedure in the Community Communication Strategy approved under Condition B3 of this approval to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary;

    iii. consider relevant minor amendments made to the CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the terms of this approval and the management plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, endorse the amendment. This does not include any modifications to the terms of this approval;

    iv. assess the noise impacts of minor construction ancillary facilities; and

h) prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Noise and Vibration Report detailing the AAs actions and decisions on matters for

which the AA was responsible in the preceding month (or another timeframe agreed with the Secretary). The Noise and Vibration Report must be submitted within seven days following the end of each month for the duration of construction of the CSSI, or as otherwise agreed with the Secretary.

Additionally, the AA is to:

Be consulted and involved in the preparation and implementation of the Out of Hours Works Protocol in accordance with CoA E28, and Report to the Secretary on outcomes of the community consultation, the identified works and respite periods and the scheduling of the likely out-of-hour works in accordance with CoA E37.

4.3.3 Independent Arborist

CoA E102 requires an Independent Arborist (IA). The nominated IA is independent of the design and construction personnel.

The CoA E103 requires the IA to fulfil the following requirements:

a) be the principal point of advice in relation to the assessment and management of CSSI impacts on trees;

b) prepare a Tree Register of all trees within the CSSI footprint (either for the entire CSSI or separate areas where tree removal and/or pruning is proposed) before the removal of any trees;

c) identify those trees within the footprint that must be removed for construction to proceed or for CSSI operations; and

d) identify those trees where their fate is uncertain and may be retained or may be pruned (either for construction or for ongoing maintenance during operation).

The Tree Register must satisfy the requirements of CoA E104 and include recommendations made by the IA. The Tree Register and evidence of Considerations by the Project must be submitted to the Secretary prior to removal /damage or pruning of a tree.

4.4 Environmental Documentation

4.4.1 Construction Environmental Management Plan

This CEMP provides the system to manage and control the environmental aspects of the Project during construction. It identifies all requirements applicable to activities described in Section 2. 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 strategies defined in this CEMP have been developed with consideration of the CoAs, REMMMs and EPOs. This CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the Project on the environment.

This CEMP will be endorsed by the ER and provided to the Secretary for approval at least one month prior to the commencement of construction. In accordance with CoA C8 construction will not commence until the CEMP and the sub plans specified in CoA C3 are approved by the Secretary or provided to the Secretary for information (as required by CoA C3).

4.4.2 Environmental Management Sub Plans

Subject-specific environmental management sub-plans support the CEMP. These documents are prepared to identify requirements and processes applicable to specific impacts or aspects of the Project. They address the relevant requirements of the CoAs, REMMMs and EPOs.

A list of construction sub-plans for this Project, their approval and consultation requirements are provided in Table 4-2.

The establishment of construction ancillary facilities will be done in accordance with CoA C18 and the Site Establishment Management Sub Plan.

Table 4-2: Environmental Management Plans

Document name	Approval pathway/ requirement
Traffic, Transport and Access Management Plan	CoA C3 (a)
Flora and Fauna Management Plan	CoA C3 (e)
Noise and Vibration Management Plan	CoA C3 (b)
Soil and Water Management Plan	REMMM GEN-1 and Hy-6
Heritage Management Plan	CoA C3 (d)
Aboriginal Heritage Management Plan	CoA C3 (d)
Air Quality Management Plan	REMMM GEN-1 and AQ-1
Construction Waste and Resource Management Plan	REMMM GEN-1 and WM-2
Contaminated Land Management Plan	REMMM CM-3
Site Establishment Management	CoA C18
Flood Management Plan	CoA C3 (c)

4.4.3 Sustainability Management Plan

TfNSW has prepared a Sustainability Strategy to comply with CoA E136 and EPO-SU-1 for the PLR including the Project. The management of the Sustainability Strategy's requirements associated with the construction of the Project will be addressed in the Delivery Sustainability Management Plan (Ref PLR1SOM-GLR-ALL-PM-PLN-000015). Implementation of the Sustainability Management Plan will be managed by the GRCLR Environment and Sustainability Manager. The plan will demonstrate how the relevant commitments in the Sustainability Strategy (CoA 136 and EPO-SU-1) will be implemented on this Project.

4.4.4 Environmental Control Maps

Environmental Control Maps (ECMs) are live documents prepared to assist in the planning and delivery of the Project. The Project traverses a range of environmental and socially sensitive areas/sites. To assist construction planning and management, these site constraints are consolidated on series of map-based sheets that extend the length of the Project.

In accordance with the requirements of the *TfNSW Guide to Environmental Control Map (3TP-SD-015/8.0),* the ECMs will be prepared prior to the commencement of relevant construction activities and will incorporate relevant sensitive areas, mitigation measures and controls, including those from relevant management sub plans. ECMs are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.

The ECMs are live documents encompassing the whole Project. They will be further developed as construction progresses and input is provided from the Project management team, the ER and TfNSW.

All construction personnel and subcontractors undertaking a task governed by an ECM must participate in training on relevant ECMs and acknowledge that they have read and understood their obligations by signing an attendance record prior to commencing work. This process is the responsibility of the D&C Environment Manager or delegate.

The implementation of the ECMs, including regular monitoring, inspections and auditing of compliance with the ECMs will be undertaken by project management and environmental personnel to ensure that all controls are being followed and that any non-compliances are recorded, and corrective actions implemented.

The ECMs will be prepared and maintained by the D&C Environment Manager or delegate with input from specialists as required. ECMs are live documents and will be document controlled separately to the CEMP. The current version will be available to all construction personnel and subcontractors undertaking a task governed by an ECM.

ECMs will be provided to the ER for review at least one week prior to the commencement of any activities in the area covered by the document. All comments received from the ER will be addressed and endorsement obtained prior to commencement of works.

4.5 Sub-contractor Management

All sub-contractors will work on the Project in accordance with the CEMP and appendices. All sub-contractors will be inducted and provided with additional environmental training where required based on the environmental risk of their activities.

GRCLR will conduct appropriate monitoring of each sub-contractor's environmental protection measures ensuring these measures are effectively implemented and maintained.

Based on environmental risk, sub-contractors will also be required to develop an activity specific environmental work method statement (EWMS), which will include a risk assessment and mitigation measures associated with their activities before commencing works to confirm that their process and procedures are appropriate.

All Sub-contractors engaged by GRCLR for works shall undertake works in accordance with:

- Relevant Environmental Legislation, Codes of Practice and Australian Standards

- GRCLR's quality, safety and environmental management system policies and procedures
- Submitted EWMS.

4.5.1 Sub-contractor Assessment

All subcontractors are to be assessed in line with their ability to perform the task. Consideration will be given to:

- Past performance, demonstrated capability and quality of work
- The nature and scope and scale of the subcontractor's activities
- Safe work practices and use of EWMS
- The sub-contractor's capacity to manage its own environmental performance effectively
- The environmental sensitivity of the area(s) in which the sub-contractors will be working
- The potential environmental impacts of the sub-contractor's activities
- The qualifications and experience of staff
- The sub-contractor's previous environmental performance
- Only sub-contractors with adequate qualifications and environmental systems will be engaged to provide services.

4.5.2 Managing sub-contractor service delivery

Sub-contractors are to submit environmental management documentation e.g. EWMS before commencing work. These documents will be reviewed by the Environmental Manager and, where required, TfNSW and ER to confirm they are appropriate and meet the requirements of this CEMP and associated sub plans, the Project deed and CoAs.

Where Sub-contractor provided documents are deemed not suitable following review by GRCLR, the sub-contractor will be requested to review and re-submit documentation. Works will not commence for the specific work activity until documents have undergone review and acceptance.

The D&C Environment Manager or delegate will review/discuss the relevant ECM with Sub-contractors at their commencement at a new work area.

4.5.3 Monitoring sub-contractor

Sub-contractors are expected to provide an appropriate level of supervision of their workers on site and implement appropriate monitoring practices such as: work area inspections, task observations and EWMS implementation.

GRCLR will monitor Sub-contractor's environmental compliance through mechanisms such as work area inspections, observations, audits and reviews.

Sub-contractors environmental compliance will also be monitored by other parties in accordance with the CoA.

4.5.4 Review of sub-contractor performance

A meeting will be held with the Site Supervisor and Senior Construction and Staging Manager at the completion of works to review the Subcontractor's performance and assess their ability to efficiently perform on the contract. Additional reviews may be maybe required following incidents, non-compliances or continuous poor performance.

Records of review are to be documented and the information is then to be sent to the Senior Construction and Staging Manager for collation and further reference.

5 Competence, Training and Awareness

To ensure that this CEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them are aware of the requirements of this CEMP. The D&C Environment and Sustainability Manager will coordinate the environmental training in conjunction with other training and development activities (e.g. safety).

5.1 Environmental Induction

All personnel (including subcontractors) are required to attend a compulsory site induction that includes an environmental component prior to commencement on-site. This is done to ensure all personnel involved in the Project are aware of the requirements of the CEMP and to ensure the implementation of the relevant mitigation measures.

Short-term visitors to site undertaking inspections / entering the site (such as regulators) will be required to undertake a visitors' induction prior to accessing the site and must be accompanied by inducted personnel at all times, in line with OH&S law.

Temporary visitors to site for purposes such as deliveries, will be required to stay in designated delivery areas, or otherwise be accompanied by inducted personnel at all times.

The D&C Environment Manager (or delegate) will conduct the environmental component of the site inductions.

The environmental component of the induction must cover all elements of the CEMP and would include as a minimum:

- GRCLR's environmental policy
- Relevant details of the CEMP and sub management plans including purpose and objectives
- Requirements of due diligence and duty of care
- Conditions of environmental licences, permits and approvals
- Environmental and compliance obligations associated with the Project approval, including the CoAs, REMMMs and EPOs
- Potential environmental emergencies/incidents on site and the required response
- Reporting and notification requirements for pollution and other environmental incidents
- Mitigation measures for the control of environmental issues
- Interface protocols with other PLR contractors (e.g. Infrastructure and Remediation contractors)
- High risk activities and associated environmental safeguards
- Working in or near environmentally sensitive areas
- The environmental control map(s), their purpose, scope and use
- Role specific environmental management requirements and responsibilities
- Sustainability requirements, including reducing greenhouse gas emissions by implementing energy efficient practises
- Waste management and segregation.

A record of all project inductions will be maintained and kept on-site, and in the GRCLR IMS. The D&C Environment Manager may authorise amendments to the induction at any time. Possible reasons for changes to the induction will relate to such things as:

- Project modifications;
- Construction progression (i.e. as risk profile of works change);
- Legislative changes;
- Amendments to this CEMP or related documentation.

An induction register will be kept at the project site office, maintained by the D&C Environment Manager.

5.2 Toolbox Talks, Training and Awareness

Toolbox talks will be one method of raising awareness and educating personnel on issues related to all aspects of construction including environmental issues. The toolbox talks are used to ensure environmental awareness continues throughout construction.

Toolbox talks will include details of ECMs and be tailored to specific environmental issues relevant to upcoming works.

Key environmental issues relevant to construction of the SaMF include (but are not limited to):

- Hours of work, including management strategies to be implemented for out of hours works
- The scope and requirements of the specific site environment plans and ECMs
- Erosion and sediment control
- Wet weather shut down procedures and responsibilities
- Emergency and spill response
- Noise and vibration goals and specific mitigation measures
- Traffic/access, location of entry/exit points, traffic routes, parking, haulage routes
- Soil and water issues and controls and dewatering and discharge requirements
- Air quality and dust issues and management
- Contamination issues and management
- Sensitive receivers such as the local community and appropriate mitigation measures
- Sustainability measures
- Waste management and recycling
- Recent environmental incidents and lessons learnt.

Toolbox talks will also be used as a forum for sharing any lessons learned. These lessons may be recorded and distributed to relevant stakeholders.

Toolbox talk attendance will be mandatory and attendees of toolbox talks will be required to sign an attendance form. Attendance records will be retained within the GRCLR IMS.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Topics covered may include those detailed above, or others deemed necessary in the lead up to or during construction.

A training schedule identifying relevant toolbox talks and environmental awareness training would be developed and updated throughout construction of the Project as training needs are identified.

5.3 Daily Pre-Start Meetings

The pre-start meeting is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

The site supervisors will conduct a daily pre-start meeting with the site workforce before the commencement of work each day, at the start of each new shift, or when there are changes to work activities or the risks present onsite during a shift. Daily pre-start meetings are generally succinct in nature and take approximately 10-15 minutes.

The environmental component of pre-starts will be developed by the D&C Environment and Sustainability Manager and will include any environmental issues that could potentially be impacted by, or impact on, the day's construction activities. All attendees at each works site will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

Pre-start topics, dates delivered, and a register of attendees will be recorded and kept at the Project site office and uploaded into the GRCLR IMS.

6 Communication

6.1 External and Government Authority Liaison

The GRCLR Environment and Sustainability Manager or delegate has the responsibility to report on the ongoing environmental performance of the Project to TfNSW and the ER.

The GRCLR Environment and Sustainability Manager will report regularly to TfNSW on progress and any key environmental matters through a concise monthly Environmental Management Report detailing items within the preceding month. This monthly Environmental Management Report will include but not be limited to:

- Record of any out of hours works undertaken
- Details and investigation outcomes of any environmental incidents or non-compliances
- Details of any complaints and the associated response
- Visits to site by EPA, council or other regulatory authorities
- Any specific issues raised by the ER.

If the Project is visited by EPA or any other regulator or government agency, TfNSW will be notified as soon as practicable, and a report will be prepared on each occasion. The report will be provided to TfNSW within one working day of the visit.

To ensure the EPA can liaise with the Project team directly in the case of an emergency, the following contacts will be made available to be contacted by the EPA on a 24-hour basis; they will both have the authority to take immediate action to shut down any activity or to effect any pollution control measure, as directed by an authorised officer of the EPA:

- Project Director
- GRCLR Environment and Sustainability Manager (or delegate).

Relevant government agencies would be consulted throughout construction, as required. This will generally be undertaken by TfNSW with the support of the GRCLR Environment and Sustainability Manager.

TfNSW will manage all communications with DPIE and keep them up to date with project progress and respond to any queries.

If GRCLR is required to consult, notify or submit documentation to a government agency (such as EPA, DPI or COP) or a stakeholder (such as a landowner or Aboriginal group representative), then GRCLR must provide the required documentation, notification or conduct consultation directly with the agency or stakeholder and provide a copy or summary of the consultation to TfNSW. If a meeting is proposed with a government agency or stakeholder, GRCLR must give reasonable notice, preferably five days, to TfNSW to allow their attendance.

6.2 Internal Communication

Clear lines of communication throughout all levels and functions (e.g. management, staff and sub-contracted service providers), are key to minimising environmental impacts and achieving continual improvements in environmental performance.

The D&C Environment Manager or delegate will meet with the construction team regularly to discuss upcoming construction activities, on-site environmental management, and any recent complaints or issues. Meeting minutes will be recorded and retained.

The D&C Environment Manager and GRCLR Environment and Sustainability Managers will meet on a regular basis to discuss the upcoming construction works and the associated environmental, planning and sustainability, risks and potential issues. Any potential interface contractor or stakeholder communications would also be discussed.

Meetings may also be scheduled with the ER and relevant TfNSW environmental staff. The purpose of these meetings would be to communicate ongoing environmental performance and to identify any issues to be addressed.

In addition, D&C Environment Manager and GRCLR Environment and Sustainability Managers will regularly participate in toolbox talks. This forum will provide an opportunity for the environment team members to communicate on environmental performance, to advise on any upcoming sensitive environmental matters for future work areas and to receive feedback from on-site personnel.

Further internal communications regarding environmental issues and aspects will be through awareness training as described in Section 5.

6.3 Stakeholder and Community Consultation

The Community and Engagement Plan (PLR1SOM-GLR-ALL-PM-PLN-000007) sets out how GRCLR will comply with the communications and engagement requirements of the CoAs, the SOM contract and the TfNSW Project Community Communication Strategy (CCS). It outlines processes for providing accurate information to the TfNSW representative regarding current and upcoming contractor activities, and all associated community impacts and potential announcements. It addresses the following:

- Communication and engagement approach, objectives and framework
- Key milestones
- Roles and responsibilities of project team members
- Key messages
- Identification of communications tools, timelines and actions to be implemented
- Proposed community liaison and marketing activities
- Identification of stakeholders that will be affected by the works and targeted consultation
- Issues analysis and impacts to stakeholders, and proposed mitigation measures
- Management of complaints and enquiries
- Crisis and incident management
- Monitoring and evaluation.

6.4 Complaints Management

In accordance with *AS/NZS 10002-2014 Guidelines for Complaint Management in Organisations,* a complaint management system ensures guidelines are in place for the effective and consistent handling of complaints.

Resolving complaints at the earliest opportunity in a way that respects and values the person's feedback can be one of the most important factors in recovering the person's confidence in the Project and it can help prevent further escalation of the complaint. GRCLR's approach to receiving a complaint will be:

- Promptly acknowledge receipt of complaint

- Address each complaint with integrity and in an equitable, objective and unbiased manner
- Implement best practices in complaint handling
- Adopt flexible approaches to problem solving to enhance accessibility for people making complaints and/or their representatives
- Protect the identity of people making complaints where this is practical and appropriate.
- Personal information that identifies individuals will only be disclosed or used as permitted under the relevant privacy laws, secrecy provisions and any relevant confidentiality obligations.

GRCLR will adhere to the complaints management system which has been established for the Project as outlined in the CCS and in accordance with TfNSW's Customer Complaints and Feedback Policy. TfNSW has established a dedicated 24-hour telephone number (1800 139 389), postal address (Level 10, 130 George Street, Parramatta NSW 2150), email address (parramattalightrail@transport.nsw.gov.au) which is staffed by a call centre provider appointed by TfNSW. The Project telephone number, and email address will be visible on hoarding at each GRCLR construction site. Project contact details will be included on all communications collateral.

GRCLR will answer all phone calls transferred by the call centre from the community information line in person and/or investigate the complaint immediately, with a phone call to be made to the complainant within two hours. An initial response will be provided during this phone call, unless the complainant agrees otherwise.

For email complaints received during construction hours, an initial written response will be provided within four hours of email receipt, and a written or verbal response within two hours if a contact telephone number is provided. For email complaints received outside construction hours an automated response will be provided immediately confirming receipt explaining that a full response will follow, and then within the first four hours of the next business day from receipt provide a written response.

For complaints received by mail within construction hours, a written response will be provided within 24 hours of receipt, or a verbal response within two hours if a contact telephone number is provided.

Written responses to complainants will be forwarded to TfNSW for their approval prior to sending to the complainant and a copy provided to the TfNSW representative.

Received complaints pertaining to the SOM contract for action, response and resolution will be forwarded to the GRCLR Communications Manager. If a complaint has been received in person by another contractor, community member or stakeholder TfNSW will advise GRCLR. If a complaint has been referred to GRCLR and is not related to GRCLR activities TfNSW will be advised immediately.

Other processes that will be followed include:

- GRCLR will advise the TfNSW PLR Senior Community Liaison Officer of a complaint on the day of the complaint or the following working day if the complaint has been received after 5pm
- GRCLR will forward information on any complaints received, including response times and details of any actions undertaken or proposed or investigations occurring, to the relevant TfNSW representative in writing within one business day
- GRCLR will provide feedback to requests for information from a TfNSW representative, TfNSW communications team or the Community Complaints Commissioner in relation to responses to complaints within two hours of the request;
- GRCLR will escalate complaints in accordance with the Escalation and Dispute Resolution Process as outlined in the CCS;

- GRCLR will resolve all complaints within seven business days, and if the complaint cannot be resolved the complainant will be kept informed and updated of the progress until the complaint is resolved;
- GRCLR will record all complaints within 24 hours of receipt of the complaint which will include:
    - Date and time of complaint
    - Method of complaint (e.g. phone, email, meeting)
    - Name and contact details of complainant
    - Summary of complaint
    - Nature of complaint
    - Number of people affected by a complaint
    - Details of actions undertaken or proposed and investigations
    - Response to complain
    - Details of whether mediation was required or used;
    - Response times
    - Number of complaints.

- GRCLR will provide the complaint closeout actions and date of implementation in writing to the relevant TfNSW representative
- GRCLR will add the complainant to the list of stakeholders to be called within seven days ahead of proposed work if the complainant requests follow up information and wishes to receive calls
- GRCLR will provide a monthly report to TfNSW outlining the complaints received for that month, including lessons learnt from the complaint that can be or have been applied
- GRCLR will take all actions and implement all practicable measures to prevent the reoccurrence of stakeholder and community complaints
- GRCLR will comply with all directions from the TfNSW in relation to the resolution of any escalated complaints.

In accordance with CoA B9, the GRCLR will maintain a Complaints Register, owned by TfNSW, throughout construction and for 12 months following the completion of construction, that records information on all complaints received about the Project.

The Complaints Register will record the:

(a) number of complaints received;

(b) number of people affected in relation to a complaint;

(c) means by which the complaint was addressed and whether resolution was reached, with or without mediation.

In accordance with CoA A24 (a) the complaints register will be provided to TfNSW by GRCLR. TfNSW will provide the complaints register to the ER on each working day. If a compliant is received outside working hours, the register will be provided to the ER on the next working day.

The complaints management process is provided in**Figure 6-1**.

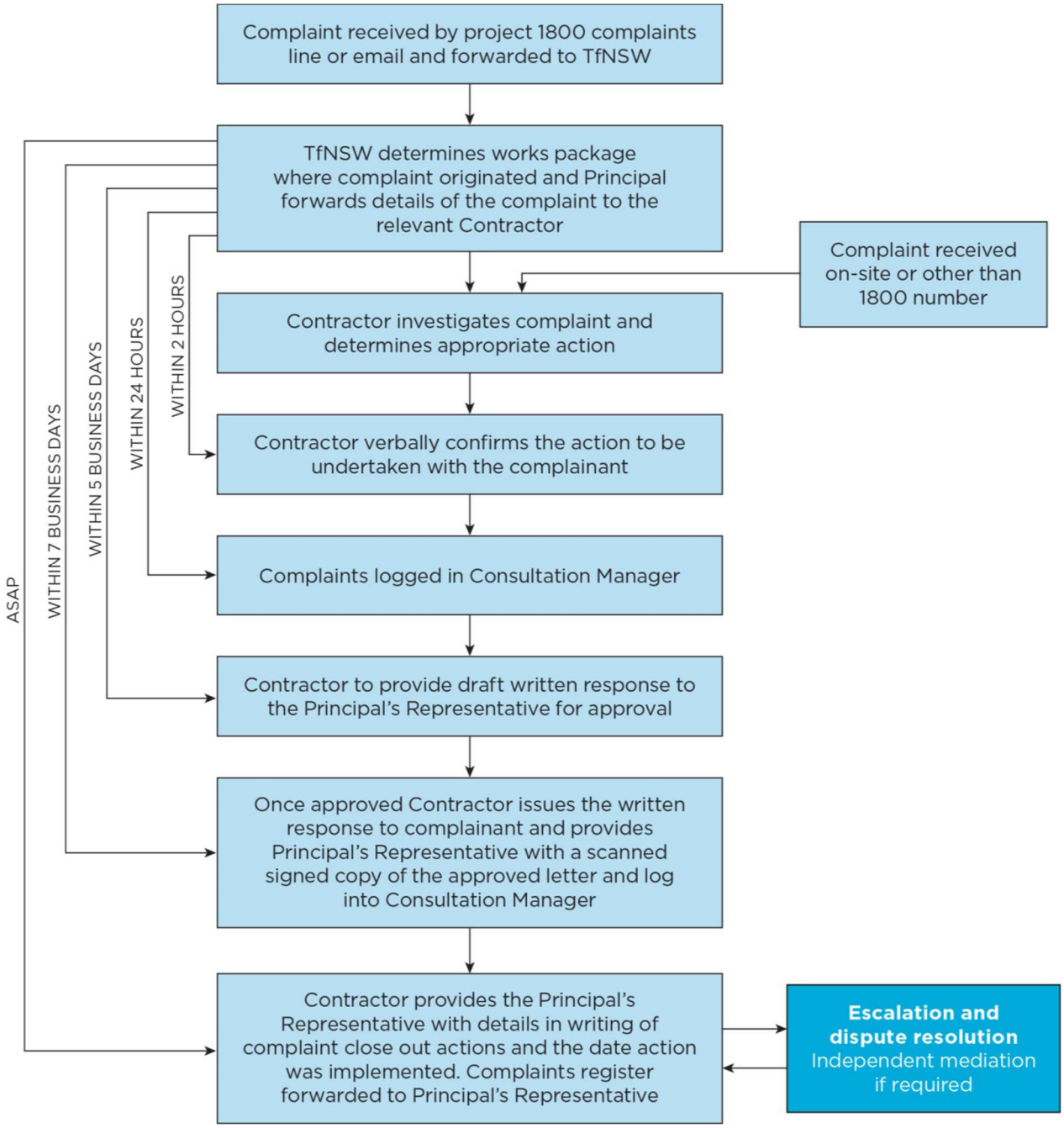


Figure 6-1: Complaints management process

6.5 Working hours

6.5.1 Approved working hours

As per CoA E21, approved working hours are:

- 7:00am to 6:00pm Mondays to Fridays, inclusive
- 8:00am to 12:00pm Saturdays
- At no time on Sundays or public holidays.

Extended working hours are permitted under CoA E22, with the exception of 'Eat Street' during the

following hours:

- 6:00pm to 7:00pm Mondays to Fridays, inclusive
- 12:00pm to 6:00pm Saturdays

Notwithstanding Condition E21, works may be undertaken in the Camellia and Rosehill precincts (east of James Ruse Drive) and the Carlingford precinct (from Parramatta River to Victoria Road) 24 hours a day, seven days a week provided that sensitive receivers are not affected by noise levels of greater than 5 dBA above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), between 10.00pm and 7.00am.

6.5.2 **Working outside approved construction hours**

The Noise and Vibration Management Plan (NVMSP) details the protocols and assessment requirements for working outside the approved construction hours specified in CoA E21 and E22.

The Project will implement the DPIE approved Parramatta Light Rail – Stage 1 Out-of-Hours Work Protocol (Rev 8.3 4 November 2019).

7 Environmental Incident and Emergency Response

The purpose of this procedure is to clearly outline the process to be followed in the event of an environmental incident or emergency, including the following (as required by GEN-3):

- Classification of the incident
- Notification and reporting requirements
- Incident investigation
- Preparedness and response
- Continuous improvement.

7.1 Incident Classification

TfNSW Environmental Incident Classification and Reporting 9TP-PR-105 defines an incident as 'an occurrence or set of circumstances, as a consequence of which pollution (air, water, noise and land) or an adverse environmental impact has occurred, is occurring, or is likely to occur. Table 7.1 provides incident definitions and Table 7.2 displays the five levels of environmental incident, as defined by the GRCLR Incident Management Plan.

Table 7-1 – Environmental Incident Definitions

Type	Definition	Source
Environmental Incident	An occurrence or set of circumstances that causes, or threatens to cause, material harm.	Planning Approval
Material harm	Is harm that: a) Involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or b) Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)	Planning Approval
Notifiable event	Any environmental incident or non-compliance that triggers a specific statutory requirement to notify a regulatory authority.	*TfNSW Environmental Incident Classification and Reporting 9TP-PR-105*
Non-compliance	An occurrence, set of circumstances or development that is a breach of the planning approval but is not an environmental incident.	*TfNSW Environmental Incident Classification and Reporting 9TP-PR-105*

Table 7-2: Incident Classification

GRCLR Incident Level	Incident Level Description	Example Events
Level 1	• Managed at the site level but may need external resourcing over and above that which is usually used by local work teams to manage incidents.	• Minor spills.
Level 2	• Requires off-site co-ordination with moderate levels of external resourcing and support; and/or • Causes or has the potential to cause a moderate impact on the environment.	• Minor fire .
Level 3	• Major incident/event that impacts the community beyond the scope of a Level 2 incident.	• Emergency evacuation of all or part of the work site; or • LRV serious collision, fire or derailment.
Level 4	• Major incident which requires the activation of the IMT for operational and strategic direction.	• Any emergency that significantly impacts on Delivery Activities; • Any incident that requires the deployment of EMLOs to external agencies; and • Incident involves multiple emergency agencies i.e. Police Forward Command Post.
Level 5	• Requires or has incurred Combat Agency support/ input. State-wide emergency protocols have been triggered for this level of incident.	• Major disaster.

7.2 Notification and Reporting of Incidents

TfNSW and the ER will be notified verbally immediately in the event of an environmental incident, and in writing within 4 hours, in accordance with the *TfNSW Environmental Incident Classification and Reporting Procedure (9TP-PR-105).* Additional details of the incident would be provided within 48hrs.

Initial notifications will include the following information as a minimum:

- Time, date, nature, duration and location of the incident
- Location of the place where incident has occurred
- Nature, the estimated quantity or volume and the concentration of any pollutants involved
- Circumstances in which the incident occurred and cause of the incident, if known
- Action taken or proposed to be taken to deal with the incident.

A report of the incident, including the results of the incident investigation will be provided to TfNSW within a week of the incident in accordance with the *TfNSW Guide to Environmental Incident and Non-compliance Reporting using the INX System 9TP-SD-005 and CoA A45* , unless otherwise agreed. The report would include the time and date of the incident, details of the incident and would identify any consequent non-compliance with the environmental requirements of the Project.

TfNSW hold the primary responsibility for notifying and reporting incidents to DPIE (CoA A44) in writing (compliance@planning.nsw.gov.au). The notification must identify the Project (including the CSSI application number) and set out the location and nature of the environmental incident. If an incident requires EPA notification under the POEO Act, TfNSW will also notify DPIE within 24 hours after the notification was given to the EPA. GRCLR will assist and cooperate with TfNSW to fulfil these obligations. TfNSW and GRCLR will implement all written requirements of the Secretary, which may be given at any point in time, to address the cause or impact of an incident within any timeframe specified by the Secretary or relevant public authority in accordance with CoA A46.

Notification and reporting of an incident as defined in Table 7.1, to the relevant authorities, ER and other stakeholders will also be undertaken as required. This will generally be undertaken by TfNSW with the support of the GRCLR Environment and Sustainability Manager.

Subcontractors on the Project will be required to notify GRCLR of all environmental incidents, with verbal notification to be provided immediately. Failure to complete the required notifications will be considered a system non-compliance.

7.3 Incident Investigation

Incident investigation will consider the following:

- Sequence of events that led to the incident.
- The key findings of the investigation (i.e. what are the main causes of the incident).
- The management methods to be changed and/or implemented to avoid the incident reoccurring
- What can we learn from this investigation into the incident?

Section 2.8 of the *TfNSW Standard Requirements* specifies the following incident investigation protocols:

- GRCLR will undertake a preliminary investigation of all Class 3 incidents within five business days of the incident, unless otherwise agreed by TfNSW. Major investigations must be completed within 20 business days of the incident. Terms of reference for major investigations will be issued by TfNSW. If TfNSW requires the appointment of an external independent investigator, GRCLR will bear the cost of that appointment
- TfNSW may participate in any investigation being undertaken by GRCLR or initiate its own investigations. If TfNSW instigates its own investigation GRCLR will provide TfNSW with all assistance reasonably required for the purposes of the investigation, this includes the waiver of legal professional privilege over any investigation report prepared by, or on behalf of, GRCLR. The parties may agree that any investigation report that is subject to legal professional privilege may, between GRCLR and TfNSW, be subject to a common interest privilege
- In the event of an incident or issue, GRCLR will not contact or provide information to any person (other than that which is required to directly manage the Incident or to comply with law), including any stakeholder, the media or the public, without the prior approval of the

TfNSW. GRCLR will make available senior personnel to respond to the community, the media and other stakeholders when required by TFNSW.

7.4 Preparedness and Response

In accordance with CoA E26, on becoming aware of the need for emergency construction works, the GRCLR will notify the ER of the need for those activities or works. The GRCLR will also use best endeavours to notify all affected sensitive receivers of the likely impact and duration of those works.

The immediate response to all incidents is to make the area safe and then undertake any reasonable actions to prevent further environmental harm without posing additional risk to staff, workforce or the public. In the event of an environmental incident or emergency, responses described in Table 7-3 will be implemented. The D&C Environmental Manager will ensure the construction site is suitably prepared to respond to an emergency/incident, as set out in**Table 7-3**.

The key to effective prevention of environmental incidents is monitoring, inspection and training. The approach set out in sections 8.1 (monitoring), 8.2 (inspection), 8.3 (auditing) and 5 (training) would minimise the potential of environmental incident and ensure the site team act appropriately to minimise the impact if an incident occurs.

Table 7-3: Preparedness and response

Emergency / incident	Preparation	Response	Responsibility
Significant adverse dust event due to weather conditions	• Monitor meteorological conditions for the area • Visually monitor works in high wind conditions • High wind 'stop works' protocols in place • Establish contingency strategy for additional dust control measures, additional water carts, dust suppressants, stockpile covers etc.	• Stop dust generating activities until adverse conditions subside. • Deploy mitigation measures to dust producing areas.	Site Supervisor D&C Environment Manager
Discovery of contamination or acid sulphate soils.	• Review previous land uses • Include contamination awareness in the site induction where the potential exists • Include contingency in relevant work procedures and safe work method statements (SWMSs) • Identify potential service providers for	• Quarantine suspected area • Cover or provide dust mitigation • Record incident in the INX as a safety incident • Engage licensed/approved removal and disposal organisation	Site Supervisor D&C Environment Manager

Emergency / incident	Preparation	Response	Responsibility
	contamination control and removal.	• Complete post removal verification	
Flooding	• Monitor meteorological conditions • All chemicals, fuels and other hazardous substances to be in secured containers and stored within a sealable shipping container • Remove plant and equipment from low lying areas • Review site drainage flow paths • Redirect site drainage to prevent flooding of residential/business premises • Ensure site drainage does not concentrate surface flow • Review and address the potential for excess water entering the site • Review and maintain erosion and sedimentation controls	• Recover materials washed from site including sediment and other waste. • Check effectiveness of erosion and sedimentation devices and other flood controls maintain where required and safe to do so.	Site Supervisor D&C Environment Manager
Temporary erosion and sediment controls are damaged.	• Plan controls to be suitable for expected conditions • Ensure sufficient materials, labour and plant are available for additional controls.	• A review of the site to be undertaken by the D&C Environmental Manager and Site Supervisor. • Controls to be repaired or replaced within appropriate timeframes.	Site Supervisor D&C Environment Manager

Emergency / incident	Preparation	Response	Responsibility
Spill of hazardous or toxic substance	• Awareness training of appropriate response and procedures to be incorporated into site induction • Material safety data sheets on site for all materials and kept up to date • Adequate supply of absorbent materials available in the site compound and on vehicles at work location • Emergency telephone numbers for emergency response organisations prominently displayed around office and issued to supervisors	• Ensure the area is made safe first. Contain or limit the spill using sandbags to construct a bund wall, use of absorbent material, temporary sealing of cracks or leaks in containers, use of geotextile or silt fencing to contain the spill. • Report spills immediately to D&C Environmental Manager • Material to be disposed of in accordance with the manufacturers' recommendations and applicable legislation. • If required, implement procedures to notify the relevant authorities.	Site Supervisor D&C Environment Manager
Vibration causing structural damage	• Choose correct plant when working near structures • Apply safe working distances during planning phase • Implement vibration monitoring at commencement of vibration generating works to ensure compliance with standards	• Activities causing vibration would cease under direction of the D&C Environment Manager or Site Supervisor. Any occupants of buildings may be evacuated with due consideration to safety, and the area secured to prevent unauthorised access. • A structural assessment to be undertaken and if any damage is	D&C Environment Manager

Emergency / incident	Preparation	Response	Responsibility
		associated with construction, rectification work would be agreed.	
Unapproved clearing / damage to protected vegetation – threatened/endangered species.	• Clearly demarcate site boundaries • Clearly demarcate clearing areas and brief site personnel • Identify/mark vegetation to be retained or that is protected. • Identify species that may be impacted, include material within the project induction • Included requirements within construction planning documentation.	• Immediately cease activities • Engage consultant to assess damage to vegetation and presence of any endangered or threatened communities.	Site Supervisor D&C Environment Manager
Injury/death to protected/endangered/threatened fauna.	• Identify potentially impacted species prior to commencement on site. • Identify species that may be impacted, include material within the project induction • Review/inspect vegetation to be cleared prior to clearing – utilise ecologist/spotter where there is the potential for endangered/threatened species • Engage with local vet/WIRES representative on the appropriate contact/procedure • Develop site procedure for the short-term management of injured fauna	• Immediately cease activities upon discovery of injured fauna • Implement procedure for short-term management and transportation to a designated vet or WIRES • Undertake additional vegetation inspection to identify any remaining fauna prior to recommencement.	Site Supervisor D&C Environment Manager

Emergency / incident	Preparation	Response	Responsibility
Damage / destruction of indigenous/European heritage item.	• Ensure site investigations detail any heritage items on or in proximity to the site. • Include awareness material within the project induction • Develop a 'stop works' protocol for any heritage find on site.	• Cease works and stabilise the area, under the direction of the D&C Environmental Manager or Site Supervisor. • Request an archaeologist to assess the significance and archaeological potential of the uncovered feature.	Site Supervisor D&C Environment Manager

7.4.1 Environmental Incident Simulation Drills

Environmental incident simulation drills will be undertaken at least once every 12 months. Additional drills may be required at the discretion of the GRCLR Environment and Sustainability Manager in response to notifiable pollution incidents.

Environmental incident simulation drills may be integrated into other emergency and incident testing and training programs and delivered as a desktop simulation or practical exercise. The Environment and Sustainability will coordinate the drill and prepare a brief report on the outcomes and lessons learned.

7.5 Continuous Improvement

Continuous improvement of the Incident and Emergency Response Procedure will be achieved through ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-compliances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-compliances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets
- Adopt mitigation measures from the ERA in the relevant management sub plans.

8 Inspections, Monitoring and Auditing

This section outlines the processes and procedures that will be implemented to monitor and review environmental performance and compliance with environmental requirements.

8.1 Environmental Inspections

The D&C Environment and Sustainability Manager and/or delegate will undertake pre-work inspections, weekly, and pre and post-rainfall inspections of the work sites to evaluate the effectiveness of environmental controls, and to ensure controls are in place in accordance with the ECMs and CEMP sub plans.

The environmental inspection checklist in Appendix A5 will be used to ensure that all environmental aspects are reviewed during inspection. Positive compliance and actions arising from the inspections will be recorded on the actions register and each action will be allocated to the supervisor for the work area for close-out. The environmental inspection checklist is a live document and will focus on high risk activities and processes, works in environmentally sensitive areas and site preparedness for adverse weather conditions. It will be updated regularly based on the progress of the Project and the outcomes of the quarterly risk assessment review.

Table 8-1 details the various inspections which will occur, their frequency and who will attend or arrange. All actions that arise from the site inspections listed in Table 8.1 will be closed out or responded to within the agreed time frames.

Records of monitoring and inspection will be documented and will be used to:

- Evaluate performance against legal, regulatory, contract, permit, licence and other commitments
- Identify required corrective actions
- Provide input into the process of review and improvement of environmental
- Track and trend progress against objective and targets
- Inform compliance requirements for environmental reporting.

Table 8-1: Environmental inspections

Activity	Type of Inspection	Frequency	Responsibility
Site inspection (quality, safety & environment)	Visual	Daily.	Site Supervisor.
Environmental inspection	Visual	Weekly or prior to and following significant rainfall events.	D&C Environment and Sustainability Manager or delegate.

Activity	Type of Inspection	Frequency	Responsibility
Environmental Representative / TfNSW representative inspection	Visual	Weekly or as determined by the nature of activities being undertaken and their associated environmental risks	GRCLR Environment and Sustainability Manager to accompany third party.
EPA or stakeholder inspection	Visual	On request.	GRCLR Environment and Sustainability Manager (or delegate) to accompany third party.
Noise and vibration inspection	Visual	Minimum frequency of AA inspections will be determined based on the potential risk of noise impacts. Inspections will occur as a minimum, quarterly during site establishment works and fortnightly (every two-weeks) during construction. Additional site inspection can be undertaken by AA in the following events: 1. Noise or vibration related complaint 2. Where a work site has not fully implemented the noise management protocols 3. Where requested by the IC/TfNSW to assess compliance with the Planning Approval	Acoustic Advisor GRCLR Environment and Sustainability Manager to accompany third party.
Tree inspection	Visual	Prior to any works that may impact a tree as defined in the IoA.	Independent Arborist D&C Environment and Sustainability Manager to accompany third party.

Activity	Type of Inspection	Frequency	Responsibility
Site Shut-Down Inspection	Visual	Where site needs to be shut down for an extended period of time (i.e. greater than three (3) consecutive days) for reasons including, but not limited to: • predicted significant weather events; • public holidays; • handover of site to other contractors. Inspections will occur: • Maximum one (1) week prior to shut-down and immediately prior to site shut down; • Where shut-down extends beyond seven (7) consecutive days, weekly and immediately following any significant weather event; and In response to a complaint.	Site Supervisor and / or D&C Environment and Sustainability Manager.

8.2 Environmental Monitoring Programs

Table 8-2 provides the environmental monitoring programmes that will be implemented in consultation with government agencies during the construction of the Project. The programmes would be endorsed by the ER and submitted to the Secretary for information at least one month before commencement of construction.

Details of additional monitoring programmes, as required according to the environmental receptors of construction, are detailed in the individual sub plans which have been prepared together with this CEMP in accordance with CoA C3.

Table 8-2: Summary of monitoring programmes required by CoA C9

CoA / REMMM	Description	Relevant sub plan	Consultation requirements
CoA C9 (a) HY-1	Water quality (turbidity) monitoring	Soil and Water Management Sub Plan (PLR1SOM-GLR-ALL-PM-PLN-000035)	DPIE, EPA, relevant council(s)

CoA C9 (b)	Noise and vibration monitoring	Noise and Vibration Management Sub Plan (PLR1SOM-GLR-ALL-PM-PLN-000034)	Relevant council(s), EPA, NSW Health (as relevant)
CoA C9 (c)	Grey-headed flying fox monitoring	Flora and Fauna Management Sub Plan (PLR1SOM-GLR-ALL-PM-PLN-000033)	Environment, Energy and Science Group (DPIE)

In accordance with CoA C10, construction monitoring programmes listed in **Table 8-2** must provide the following:

- Details of baseline data available
- Details of baseline data to be obtained and when
- Details of all monitoring of the Project to be undertaken
- The parameters of the Project to be monitored
- The frequency of monitoring to be undertaken
- The location of monitoring
- The reporting of monitoring results against relevant criteria
- Procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory
- Any consultation to be undertaken in relation to the monitoring programs.

8.3 Auditing and Reporting

Environmental audits would be conducted at regular intervals during construction of the Project to assess environmental performance and ensure compliance with all environmental obligations. Audits will include works undertaken by subcontractors. Internal and external environmental audits would be undertaken in accordance with *AS/NZS ISO 19011:2014 Guidelines for Auditing Management Systems* and follow an environmental audit programme submitted to the Secretary for information no later than one month before commencement of construction.

The environmental audit programme, as submitted to the Secretary, will implemented for the duration of construction. An indicative audit programme is provided in Table 8-3,. TfNSW has submitted the audit program to DPIE as part of the Compliance Tracking Program.

Table 8-3: Indicative Environmental Audit Programme

Audit	Scope	Timing	Responsibility	Recipient of audit report
Internal audit	Compliance with CoAs/REMMMs/EPOs, legal requirements, TfNSW	Annually (alternate six months	GRCLR Environment and Sustainability Manager	CAF GRCLR

Audit	Scope	Timing	Responsibility	Recipient of audit report
	requirements, CEMP and sub plans [Each audit will follow an audit checklist which will focus on areas for improvement and high-risk activities.] [The findings of the internal audits will be used to update the compliance tracking program (Section 8.4)]	to external audit)		
Independent audit	Compliance with CoAs/REMMMs/EPOs, legal requirements, TfNSW requirements, CEMP and sub plans, Environmental performance of the Project and its effects on the surrounding environment. Recommendation of measures and actions to improve environmental performance. [Each audit will follow an audit checklist which will focus on areas for improvement and high-risk activities.] [The scope will be prepared in consultation with the ER and TfNSW]	GRCLR will comply with the audit program scheduled by TfNSW. Annually (alternate six months to internal audit)	TfNSW Independent auditor	CAF GRCLR TfNSW Secretary
TfNSW audit	Compliance with CEMP and sub plans, Deed, and environmental protection licence.	Annually (at same time as external audit above).	TfNSW representative Independent auditor	CAF GRCLR TfNSW Independent auditor

All independent environmental audits of the CSSI would be conducted by a suitably qualified, experienced and independent auditor with, where required, a team of independent technical experts, as required by CoA A42.

In accordance with CoA A43 TfNSW are required to submit a copy of the independent environmental audit report to the Secretary for information, with a response to any recommendation contained within the report within six weeks of completing the audit. GCRLR will

support this requirement by implementing all recommendations of the independent environmental audit report within six weeks of completion of the audit.

8.4 Compliance Tracking Program

A Compliance Tracking Program (CTP) has been prepared by TfNSW and endorsed by the ER. It is managed and maintained centrally by TfNSW for the entire PLR Program in accordance with CoA 30-32. A Compliance Tracking Register (CTR) will be maintained and updated in the INX System and will be reviewed quarterly by TfNSW. The CTR will be reviewed and endorsed by the ER every six months, and will be maintained by TfNSW for the duration of the Project, and for a minimum of one (1) year following the commencement of operations.

A Pre-construction Compliance Report will be prepared and submitted to the Secretary for information no later than one (1) month before the commencement of construction The Pre-construction Compliance Report:

- Details how the CoAs pertinent to the pre-construction phase and commencement of construction have been complied with; and
- Proposed commencement dates of construction activities.

Six monthly Construction Compliance Reports will be prepared and submitted to DPIE for information from the date of the commencement of construction and for the duration of construction. The construction compliance reports will be endorsed by the ER and will include:

- A results summary and analysis of environmental monitoring
- The number of complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints
- Details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period
- A register of any reviews of consistency undertaken including outcome
- Results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit
- A summary of all incidents notified in accordance with Conditions A44 and A46
- Any other matter relating to compliance with the terms of this approval or as requested by the Secretary.

Table 8-4 summarises the programme and frequency for compliance reporting. In accordance with CoA A33 each compliance report will be made publicly available on the project website and DPIE will be notified in writing when this has been done.

Table 8-4: Compliance Reporting

CoA	Item	Details	Timing	Responsibility	Recipient(s)
A31	Compliance Tracking Register	The Compliance Tracking Register in accordance with the Compliance Tracking Program	Compliance Tracking Register is reviewed quarterly by TfNSW.	GRCLR TfNSW	TfNSW
A34	Pre-construction Compliance Report	The Pre-construction Compliance Report must be submitted to DPIE for information and endorsed by the ER	At least one month before the commencement of construction	GRCLR	TfNSW ER DPIE
A37	Construction Compliance Reports	Construction Compliance Reports must be prepared and submitted to DPIE for information	Every six months from the date of the commencement of construction, endorsed by the ER.	GRCLR	TfNSW ER DPIE Project website
A43	Environmental Audit Report	Environmental Audit Report	Within six weeks of completing the audit.	GRCLR	DPIE
A44	Notification of Incidents	TfNSW will immediately notify the DPIE and ER of all environmental incidents. The notification will identify the Project (including the CSSI application number) and set out the location and nature of the incident.	Immediately after the Proponent becomes aware of an incident	TfNSW	DPIE

CoA	Item	Details	Timing	Responsibility	Recipient(s)
A45	Incident Report	A report to the DPIE within one week of the notification of an incident. The report will outline time and date of the incident, details of the incident and any consequent non-compliance with the CoA.	Within one week of notification of an incident	GRCLR TfNSW	DPIE
A47	Notification of Incident notified under POEO		Within 24 hours after notification give to EPA	GRCLR TfNSW	EPA DPIE
C16	Construction Monitoring Program		At least one month before the commencement of construction	GRCLR TfNSW	DPIE

8.5 Other Reporting

Additional reporting requirements identified in the Project documents are included in Table 8-5. Further reporting may be necessary as works progress. In such circumstances, Table 8-5 would be updated.

Table 8-5: Additional reporting requirements

Report	Details	Frequency	Responsibility	Recipient
Environment report	To be incorporated into the Project monthly report – to address environmental statistics (e.g. incidents, regulatory action, complaints on environmental issues), monitoring program performance, and key environmental issues	Monthly	GRCLR Environment and Sustainability Manager	TfNSW

ER monthly report	CoA A23 (i) Report on the ER's actions and decisions on matters specified in the ER Protocol for the preceding month of site environmental performance following routine inspections any non-compliances with the CEMP and corrective/ management actions required.	Monthly	ER GRCLR to provide input	DPIE and other relevant regulatory agencies
Noise and Vibration Report	CoA A29 (h) Noise and Vibration Report detailing the AAs actions and decisions on matters for which the AA was responsible in the preceding month (or another timeframe agreed with the Secretary).	Monthly	AA GRCLR to provide input	Secretary and other relevant regulatory agencies

8.6 Non-Compliance, Corrective and Preventative Actions

An environmental non-compliance is defined in the *TfNSW Guide to Environmental Incident and Non-compliance Reporting using the INX System 9TP-SD-005* as a non-compliance with any condition of approval, license condition or any other statutory approval or requirement relevant to the activity and/or area where the activity occurs. Environmental non-compliance may be identified through improvement opportunities, regular environmental inspections or monitoring, internal or external audits, complaints, community consultation, observations or through incident management. The ER, AA, TfNSW and/or a public authority may also raise a non-compliance or improvement notice.

The D&C Environment Manager or delegate is responsible for the investigation, tracking and appropriate close-out of non-compliance. Where an environmental non-compliance is identified and is substantiated, a corrective action request will be issued following consultation with the concerned parties.

Non-compliance will be managed in accordance with the GRCLR Integrated Management System (IMS) and recorded in a corrective action report in accordance with:

- TfNSW Guide to Environmental Incident and Non-compliance Reporting using the INX System 9TP-SD-005
- TfNSW Environmental Incident Classification and Reporting 9TP-PR-105.

The corrective action report will document the agreed actions and timeframes for addressing the environmental non-compliance. Timeframes would be set to ensure any chance of recurrence is

eliminated as soon as practicable. Environmental non-compliance of a serious nature will be closed out immediately.

The status of corrective actions would be reported at least monthly for review at the monthly management meeting. Non-compliance would be reviewed and reported on in the monthly environmental reports.

9 Review and Improvement

9.1 Management Reviews

Quarterly management reviews would be undertaken as part of the GRCLR continual improvement process. The management review process would consider the suitability and effectiveness of the environmental management system and effectiveness and proper implementation of this CEMP. This will involve a formal meeting, attended by the TfNSW representative and may include the wider management team and a review of systems from other functional areas.

The review will consider:

- Opportunities to improve environmental management processes and practices
- Client and agency feedback
- Consideration of non-compliances and deficiencies
- Consideration of effectiveness of corrective and preventative actions
- Changes or developments in the contractors' EMS.

The outcomes of the reviews may result in the amendment of this CEMP or related documents, revision to the environmental management system, risk assessment review, re-evaluation of the Project's objectives and targets as well as feeding into other Project documents. Necessary system improvements would be identified and raised as corrective actions. Any changes to this CEMP would be managed in accordance with Section 9.2.

9.2 Revision of this Plan

Periodic assessments and reviews of this CEMP and sub-plans will be conducted by project management personnel as required or at least every six months from the commencement of construction. This review will generate actions for the continual improvement of the CEMP and supporting management plans. The periodic or six monthly reviews of the CEMP will be offer specific opportunities to identify improvements in the documents. They would be updated as required:

- To take into account changes to the environment or generally accepted environmental management practices, new risks to the environment, any hazardous substances, contamination or changes in law
- Where requested or required by DPIE or any other authority
- In response to internal or external audits or quarterly management reviews, modification of approval, as results of complaints, incidents, non-compliance.

The updated plans must be endorsed by the GRCLR Environment and Sustainability Manager and approved internally by the Project Director.

Modifications to the CEMP or management sub plans must be submitted to the ER for endorsement. Minor amendments and administrative changes to CEMP may be approved by the ER, with consultation with the AA if relevant. These amendments will be included in the six monthly Construction Compliance Report in accordance with CoA A37.

Minor changes would typically include those that:

- Are editorial in nature (e.g. staff and agency/Authority name changes)

- Do not increase the magnitude of impacts on the environment when considered individually or cumulatively
- Are in response to audit findings or periodic reviews
- Do not comprise the ability of the Project to meet approval or legislative requirements.

Where the Environmental Representative deems it necessary, the revised plans would be provided to relevant stakeholders for review and comment if required and forwarded to the Secretary of DPIE for approval. The revised CEMP would be provided to ER and TfNSW for review prior to submission to any stakeholders or the Secretary.

10 Documentation

10.1 Environmental Records

The GRCLR Environment and Sustainability Manager is responsible for maintaining all environmental management documents and records as current at the point of use. Types of documents and records include:

- CEMP and sub plans
- Procedures and protocols
- Monitoring programmes
- Checklists, forms and templates
- internal and external audit reports,
- records of the Contractor's Subcontractors monitoring their own activities,
- records of the Contractor's monitoring of Subcontractors activities, and
- risk management records.

Environmental records may include, but are not limited to:

- All monitoring, inspection and compliance reports/records
- Surveillance and audits of subcontractors' environmental performance and controls
- Register of equipment used for environmental monitoring, equipment calibration frequency and certificates
- Correspondence with public authorities
- Environmental training including:
    - Who was trained
    - When the person was trained
    - The name of the trainer
    - A general description of the training content.
- Reports on environmental incidents, other environmental non-compliances, complaints
- and follow-up action
- Minutes of the CEMP and construction EMS review meetings and any resulting actions
- Results of internal and external audits.

All environmental management documents are subject to ongoing review and continual improvement. This includes times of change to scheduled activities or to legislative or licensing requirements.

Only the GRCLR Environment and Sustainability Manager, or their delegate, has the authority to change any of the environmental management documentation.

10.2 Document Control

GRCLR will coordinate the preparation, review and distribution of the environmental documents. The latest version of all documents would be retained on the Project

document management system. GRCLR will implement appropriate document control processes using Teambinder and Aconex to control the flow of documents within and between GRCLR and TfNSW, stakeholders and subcontractors. All environmental records will be retained for a period of no less than five years from the last Date of Portion Completion.

The process will also ensure that documentation is:

- Developed, reviewed and approved prior to issue
- Formally issued for use
- Controlled and stored for the legally required timeframe
- Removed from use and archived when superseded or obsolete.

A register will identify current document revisions, records or data. The Document Register will be maintained in the GRCLR IMS.

Appendices

Appendix A1: Relevant Legislation

Act	Summary of Obligations
Environmental Planning and Assessment Act 1979 *Environmental Planning and Assessment Regulation 2000*	This Act and Regulation establishes a system of environmental planning and assessment of development proposals for the State.
Local Government Act 1993 *Local Government (General) Regulation 2005*	The Local Government Act and Local Government (General) Regulation provide a legal framework for an environmentally responsible system of Local Government including the responsibility to administer various regulatory systems (e.g. Environmental Planning, Development Consents).
Roads Act 1993 *Roads (General) Regulation 2000*	This Act and Regulation primarily provide for such things as the opening and closing of public roads, identification of road boundaries and road widening, road levels, classification of public roads, road work, protection of public road and regulation of traffic, regulation of work, structures and activities.
Soil Conservation Act 1938	This Act makes provision for the conservation of soil resources, farm water resources and the mitigation of erosion. The Act is binding on the Crown; however, the Crown is not liable for prosecution. The Act provides for notification in the government gazette catchments where erosion is liable to cause degradation of rivers, lakes etc. (i.e. protected land).
Environment Protection and Biodiversity Conservation Act 1999	The main purpose of this Act is to provide for the protection of the environment especially those aspects that are of national environmental importance and to promote ecological sustainable development. The Act binds the Crown. Do not take, use, keep or interfere with “nationally significant” cultural and natural resources, protected wildlife and protected plants without Approval.
Biodiversity Conservation Act 2016, *Local Land Services Act 2013*	This Act and Regulation provide for the conservation and management of Native Vegetation by requiring Development Consent to be obtained for the clearing of Native vegetation.
Land and Environment Court Act 1979	The Land and Environment Court is constituted under this Act. The jurisdiction of the Court is divided into numerous classes. The relevant classes for the project cover matter such as the prosecution for offences

Act	Summary of Obligations
	under various environmental legislation and to appeal against permits or orders.
Greenhouse Gas (GHG) Emissions *National Greenhouse and Energy Reporting Act 2007*	Corporations emitting more than 50kT of carbon dioxide equivalent units are required to register and report their Scope 1 and Scope 2 emissions for all Facilities in which they have Operational Control. Facilities emitting more than 25kT of carbon dioxide equivalent units must register and report Scope 1 and Scope 2 emissions.
Contaminated Land Management Act 1997	This Act provides for a process to investigate and remediate land that has been contaminated and presents a significant risk of harm to human health. Section 60 of the Act is a "Duty to Report Contamination". This duty applies to owners of land and persons who become aware their activities have contaminated the land.
Rural Fires Act 1997	This Act is intended to prevent, mitigate and suppress bush and other fires. It places a duty on Laing O'Rourke as the occupier of the site to extinguish fires during bush fire danger periods or if unable to do so notify appropriate firefighting authorities of the existence of the fire and its location.
Environmentally Hazardous Chemicals Act 1985	This Act prohibits the manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of an environmental hazardous chemical or waste (prescribed activity) except under the provisions of a chemical control or a licence. The EPA is required to prepare inventories of environmentally hazardous chemicals and declared chemical wastes.
Dangerous Goods (Road and Rail Transport) Act 2008	The purpose of this Act is to regulate the transport of Dangerous Goods by road and rail in order to promote public safety and protect property and the environment. The transport of Dangerous Goods is required to be appropriately licensed (both vehicle and driver).
Water Management Act 2000 *Water Management (General) Regulation 2004*	This Act repeals the Rivers and Foreshores Improvement Act, 1948 and the Water Act, 1912. The provisions of both the aforesaid Acts are progressively rescinded as Water Management Plans are prepared and gazetted for catchment areas within the state. This Act and Regulation provide for the protection, conservation and ecologically sustainable development of water sources of the State and in particular to protect, enhance and restore water sources and their associated ecosystems.
National Parks and Wildlife Act 1974	The relevance of this Act is firstly in respect to the protection and preservation of aboriginal artefacts. Discovery of material on site suspected

Act	Summary of Obligations
	as being of aboriginal origin must be reported and protected pending assessment and direction by TfNSW's Representative. Secondly, it is an offence under Part 8A of this Act to pick or harm threatened species. (Refer to the notes under the Threatened Species Conservation Act for more information)
Biodiversity Conservation Act 2016	This Act and Regulations provide for obtaining licenses to harm or pick threatened species populations or ecological communities whether plant or animal or to damage any critical habitat. The offence of picking or harming any threatened species is covered under the National Parks & Wildlife Act Part 8A. It is a defence under Part 8A of that Act if the offence was essential to carrying out development that is in accordance with a Development Consent within the meaning of the EP&A Act or an approval within the meaning of Part 5 of the EP&A Act.
Biosecurity Act 2015 *Biosecurity Regulation 2017*	This Act relates to diseases and pests that may cause harm to human, animal or plant health or the environment, and for related purposes. Declared weeds are listed in Schedule 8 of the Biosecurity Regulation 2017.
Water Act 1912	This Act provides for licences to extract water for construction purposes either from surface or artesian sources. Should construction water be extracted from surface (other than sedimentation ponds) or artesian sources a licence will be required.
Heritage Act 1977	This Act provides for the preservation and conservation of heritage items such as building, works, relic, and places of historic interest, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance. Under this Act a relic means any deposit, object or material evidence which is 50 or more years old and relates to the settlement of the area (not being an aboriginal settlement). It is an offence under this Act to wilfully and knowingly damage or destroy items of heritage value. Do not demolish damage, move or develop around any place, building, work, relic, moveable object, precinct, or land that is the subject of an interim heritage order or listing on the State Heritage Register or heritage listing in a Local Environmental Plan without an approval from the Heritage Council (NSW) or local council.
Aboriginal and Torres Strait Islander Heritage	This Act provides for the preservation and protection from injury or desecration to areas and objects of significance to Aboriginals. Areas and objects can be protected by Ministerial Declaration and it is then and offence to contravene such a declaration.

Act	Summary of Obligations
Protection Act 1984	

Appendix A2: Environmental Risk Assessment

Environmental Risk Identification								Risk analysis and evaluation using existing standard controls and assumptions			Risk Management	Responsibility and Monitoring
Risk Ref #	Environmental Aspect*	Impact **	Environmental Impact Category	Site Specific Risk Description ***	Risk category	Project-specific Location(s)	Existing Standard Controls and Assumptions	Consequence	Likelihood	Rating	Additional Project or Site Specific Management Actions	Responsibility (Risk Owner)
1.1	Project vehicle movements in the public domain - all activities	Traffic congestion due to high volume of construction vehicles around the TPS and Stop construction zones amd SaMF	Traffic, Transport and Access	Complaints received on community hotline	Reputation - Community	Haulage routes to SAMF and construction sites Construction zones at the TPS and Stop construction areas Back Up Control Centre	Traffic, Transport and Access Management Sub Plan - Road deliveries would be scheduled to avoid peak road congestion periods. Road closures and traffic changes will be undertaken during off peak times where possible	Minor	Likely	Low	The structural elements of the TPS and Stops will be prefabricated off site and lifted into place.	D&C Environmental Manager
1.2	Project vehicle movements in the public domain - all activities	Noise emissions from construction vehicles impacting sensitive receivers	Noise and Vibration	Complaints received on community hotline	Reputation - Community	Haulage routes to SAMF site Construction zones at the TPS and Stop construction areas Back Up Control Centre	Traffic, Transport and Access Management Sub Plan - Road deliveries would be scheduled to avoid key sensitive periods as much as is practicable. The Noise and Vibration Management Plan (NVMSP) details the protocols and assessment requirements for working outside the approved construction hours specified in CoA E21 and E22.	Minor	Likely	Low	The Project will implement the DPIE approved Parramatta Light Rail – Stage 1 Out-of-Hours Work Protocol (Rev 8.3 4 November 2019).	D&C Environmental Manager
2.1	Light emissions during night-time activities - all activities	Disturbance of nearby receivers	Community	Complaints received on community hotline	Reputation - Community	Residents adjacent to night works during construction for TPS and Stop construction areas and Back Up Control Centre	Traffic, Transport and Access Management Sub Plan - Road deliveries would be scheduled to avoid key sensitive periods as much as is practicable. The Noise and Vibration Management Plan (NVMSP) details the protocols and assessment requirements for working outside the approved construction hours specified in CoA E21 and E22.	Minor	Likely	Low	The Project will implement the DPIE approved Parramatta Light Rail – Stage 1 Out-of-Hours Work Protocol (Rev 8.3 4 November 2019).	D&C Environmental Manager
3.1	Greenhouse gas emissions - all activities	Contribution to climate change	Community	Not applicable - due to its relatively small scale and temporary nature, the construction works would have a minor influence on climate change through greenhouse gas emissions.								
4.1	Waste production - all activities	Excessive waste production and landfill reliance	Waste and Hazardous Material	Cost to project for disposal of waste.	Financial - Project / Program / TPD Budgets	SAMF site TPS and Stop construction zones	Waste and Resources Management Sub Plan - The following strategies would be employed to minimise impacts: Apply waste management hierarchy, classification and segregation of waste to minimise landfill quantities, use licenced waste facilities and track waste movements, training of staff to minimise landfill waste volumes and manage waste appropriately.	Minor	Likely	Low	None	D&C Environmental Manager
5.1	Resource use - all activities	Excessive resource use	Systems and Documentation	Project cost, resource use and waste volumes	Financial - Project / Program / TPD Budgets	SAMF site TPS and Stop construction zones Back Up Control Centre	Waste and Resources Management Sub Plan - The following strategies would be employed to minimise impacts: Where practicable, surplus existing materials will be identified and utilised where fit for purpose, products and materials containing recycled content or packaging used as a preference to non-recycled materials, consideration of embodied carbon of construction materials, preference for locally sourced goods and services, efficient use of energy and water, training of staff in best practice, monitoring of resource use.	Minor	Likely	Low	None	GRCLR Environment and Sustainability Manager
6.1	Civil construction: -Earthworks -Drainage installation -CSR installation -Fencing and gates installation -Roadworks -Utilities installation	Dust emissions reducing air quality for offsite receivers (Note: there are no sensitive receivers within 500m of the site)	Air and Dust	Complaints received on community hotline Complaints received and investigation from regulators resulting in potential stop work	Reputation - Community	SAMF site TPS and Stop construction zones Back Up Control Centre	Air Quality Management Sub Plan - The following strategies would be employed to minimise impacts: perimeter screening, stabilisation of unsealed ground, modification of activities according to wind speed, dust suppression techniques to work areas and stockpiles, covering of haul loads, visual dust monitoring, training, regular review of mitigation effectiveness.	Minor	Unlikely	#N/A	None	D&C Environmental Manager
6.2	Civil construction: -Earthworks -Drainage installation -CSR installation -Fencing and gates installation -Roadworks -Utilities installation	High noise and vibration levels impacting offsite receivers	Noise and Vibration	Complaints received on community hotline Complaints received and investigation from regulators resulting in potential stop work	Reputation - Community	SAMF site TPS and Stop construction zones Back Up Control Centre	Construction Noise and Vibration Management Sub Plan - The following strategies would be employed to minimise impacts: Pre-works sampling to develop baseline values, noise emission monitoring at nearby receivers, application of noise abatement strategies if required, high noise tasks to be scheduled to minimise disruptions to receivers, respite periods to be applied as required, notification of nearby receivers of high noise activities, training, regular review of mitigation effectiveness.	Minor	Unlikely	#N/A	The Project will implement the DPIE approved Parramatta Light Rail – Stage 1 Out-of-Hours Work Protocol (Rev 8.3 4 November 2019).	D&C Environmental Manager

Risk Ref #	Environmental Aspect*	Impact **	Environmental Impact Category	Site Specific Risk Description ***	Risk category	Project-specific Location(s)	Existing Standard Controls and Assumptions	Consequence	Likelihood	Rating	Additional Project or Site Specific Management Actions	Responsibility (Risk Owner)
6.3	Civil construction: -Earthworks -Drainage installation -CSR installation -Fencing and gates installation -Roadworks -Utilities installation	Sediments, wastes and contaminants impacting land	Land Contamination	Breach of PoEO Act Complaints by regulator (EPA) or council resulting in stop work notice	Environment - Environment Effects / Cultural Heritage	SAMF site TPS and Stop construction zones Back Up Control Centre Back Up Control Centre	Soil and Water Management Sub Plan & Waste and Resources Management Sub Plan - The following strategies would be employed to minimise impacts: Maintenance to ensure effective functioning of the site boundary erosion sediment control fence and water treatment plant, progressive erosion and sediment controls around work areas, monitoring of water treatment plant discharge, good site housekeeping, testing and treatment of any groundwater abstracted or rainwater collected prior to discharge, location of stockpiles, wastes and contaminants outside of drainage lines and flood-prone areas, unexpected contamination finds procedure, environmental incident and emergency response procedure to be followed in case of contaminant spills, availability of spill kits, appropriate storage of contaminants and wastes to prevent escape, training, regular review of mitigation effectiveness.	Minor	Unlikely	#N/A	Environmental Control Maps will be prepared for each construction zone and will incorporate relevant sensitive areas, mitigation measures and controls, including those from relevant management sub plans. ECMs are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.	D&C Environmental Manager
6.4	Civil construction: -Earthworks -Drainage installation -CSR installation -Fencing and gates installation -Roadworks -Utilities installation	Sediments, wastes and contaminants impacting water quality	Water Pollution	Breach of PoEO Act Complaints by regulator (EPA) or council resulting in stop work notice	Environment - Environment Effects / Cultural Heritage	SAMF site TPS and Stop construction zones Back Up Control Centre	Soil and Water Management Sub Plan & Waste and Resources Management Sub Plan - The following strategies would be employed to minimise impacts: Maintenance to ensure effective functioning of the site boundary erosion sediment control fence and water treatment plant, progressive erosion and sediment controls around work areas, monitoring of water treatment plant discharge, good site housekeeping, testing and treatment of any groundwater abstracted or rainwater collected prior to discharge, location of stockpiles, wastes and contaminants outside of drainage lines and flood-prone areas, unexpected contamination finds procedure, environmental incident and emergency response procedure to be followed in case of contaminant spills, availability of spill kits, appropriate storage of contaminants and wastes to prevent escape, training, regular review of mitigation effectiveness.	Minor	Unlikely	#N/A	Environmental Control Maps will be prepared for each construction zone and will incorporate relevant sensitive areas, mitigation measures and controls, including those from relevant management sub plans. ECMs are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.	D&C Environmental Manager
6.5	Civil construction: -Earthworks -Drainage installation -CSR installation -Fencing and gates installation -Roadworks -Utilities installation	Impact to heritage	Heritage	There is no known heritage within the SAMF site. Remediation of the site would preclude the potential for undiscovered heritage. All works at the Stop construction zones is above ground Minor surface excavation works will take place at the TPS construction zones for sub-structure and utilities connections.	Environment - Environment Effects / Cultural Heritage	TPS construction zones Back Up Control Centre	Heritage Management Sub Plan - Unexpected Finds Procedure	Moderate	Very Unlikely	Low	Environmental Control Maps will be prepared for each construction zone and will incorporate relevant sensitive areas, mitigation measures and controls, including those from relevant management sub plans. ECMs are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.	D&C Environmental Manager
6.6	Civil construction: -Earthworks -Drainage installation -CSR installation -Fencing and gates installation -Roadworks -Utilities installation	Impact to flora and fauna	Flora and Fauna	Non Applicable - All vegetation removal has been completed prior to supply Operate and Maintain Works (Package 5) Construction would not impact vegetation outside of the construction zones.	Reputation - Government / Media / Stakeholders	SAMF site TPS and Stop construction zones Back Up Control Centre	If any flora or fauna are identified with a construction zone the Flora and Fauna Management Sub Plan requirements willl be implemented	Minor	Very Unlikely	#N/A	Environmental Control Maps will be prepared for each construction zone and will incorporate relevant sensitive areas, mitigation measures and controls, including those from relevant management sub plans. ECMs are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.	D&C Environmental Manager
6.7	Civil construction: -Earthworks -Drainage installation -CSR installation -Fencing and gates installation -Roadworks -Utilities installation	Disturbance of contaminated land	Waste and Hazardous Material	Stop work delays affecting project programme, and increased costs Potential for community and site staff exposure to contamination	Safety - Injury and Disease (including employees, contractors, passengers, and the public)	SAMF site TPS and Stop construction zones Back Up Control Centre	Contaminated Land Management Plan - The following strategies would be employed to minimise impacts: Visual inspections and monitoring will be performed during excavation. Unexpected contaminated material will be dealt with in accordance with the Unexpected Finds Procedure. Contaminated materials will be stored in an impervious bunded area and covered to avoid the risk of leachate, odours or contaminated dust, as directed by a suitably qualified person. Staff will be trained on the identification and management of potential contamination issues.	Minor	Unlikely	#N/A	None	D&C Environmental Manager
6.8	Civil construction: -Earthworks -Drainage installation -CSR installation -Fencing and gates installation -Roadworks -Utilities installation	Flood impacts to neighbouring properties	Community	Not applicable for SaMF- The site is located outside the 1% AEP flood extent, but within the probable maximum flood zone. Ground levels mean the site sits above the 0.5% AEP flood level. The site would not obstruct overland flow, increasing flood risk elsewhere. All water falling on the site would pass through the water treatment plant, which discharges to the stormwater system. No water will run off from the site.	Environment - Environment Effects / Cultural Heritage	TPS and Stop construction zones Back Up Control Centre	The Flodd Management Pla requirements will be implemented to avoid flooding impacts to neighbouring properties	Moderate	Very Unlikely	Low	Ensure work site can be evacuiated and people and plant if flood is expected.	D&C Environmental Manager
7.1	Construction of buildings and services: -Maintenance building -Ancillary buildings -Track -Track slab -Overhead wiring	High noise and vibration levels impacting offsite receivers (Note: there are no sensitive receivers within 500m of the SaFM)	Noise and Vibration	Complaints received on community hotline Complaints received and investigation from regulators resulting in potential stop work	Reputation - Community	SAMF site TPS and Stop construction zones Back Up Control Centre	Construction Noise and Vibration Management Sub Plan - The following strategies would be employed to minimise impacts: Pre-works sampling to develop baseline values, noise emission monitoring at nearby receivers, application of noise abatement strategies if required, high noise tasks to be scheduled to minimise disruptions to receivers, respite periods to be applied as required, notification of nearby receivers of high noise activities, training, regular review of mitigation effectiveness.	Minor	Likely	Low	The Project will implement the DPIE approved Parramatta Light Rail – Stage 1 Out-of-Hours Work Protocol (Rev 8.3 4 November 2019).	D&C Environmental Manager

Risk Ref #	Environmental Aspect*	Impact **	Environmental Impact Category	Site Specific Risk Description ***	Risk category	Project-specific Location(s)	Existing Standard Controls and Assumptions	Consequence	Likelihood	Rating	Additional Project or Site Specific Management Actions	Responsibility (Risk Owner)
7.2	Construction of buildings and services: -Maintenance building -Ancillary buildings -Track -Track slab -Overhead wiring	Wastes and contaminants impacting land	Land Contamination	Breach of PoEO Act Complaints by regulator (EPA) or council resulting in stop work notice	Environment - Environment Effects / Cultural Heritage	SAMF site TPS and Stop construction zones Back Up Control Centre	Soil and Water Management Sub Plan Waste and Resources Management Sub Plan - The following strategies would be employed to minimise impacts: Maintenance to ensure effective functioning of the site boundary erosion sediment control fence and water treatment plant, monitoring of water treatment plant discharge, good site housekeeping, location of stockpiles, wastes and contaminants outside of drainage lines and flood-prone areas, environmental incident and emergency response procedure to be followed in case of contaminant spills, availability of spill kits, appropriate storage of contaminants and wastes to prevent escape, training, regular review of mitigation effectiveness.	Minor	Likely	Low	Environmental Control Maps will be prepared for each construction zone and will incorporate relevant sensitive areas, mitigation measures and controls, including those from relevant management sub plans. ECMs are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.	D&C Environmental Manager
7.3	Construction of buildings and services: -Maintenance building -Ancillary buildings -Track -Track slab -Overhead wiring	Wastes and contaminants impacting water quality	Water Pollution	Breach of PoEO Act Complaints by regulator (EPA) or council resulting in stop work notice	Environment - Environment Effects / Cultural Heritage	SAMF site TPS and Stop construction zones Back Up Control Centre	Soil and Water Management Sub Plan Waste and Resources Management Sub Plan - The following strategies would be employed to minimise impacts: Maintenance to ensure effective functioning of the site boundary erosion sediment control fence and water treatment plant, monitoring of water treatment plant discharge, good site housekeeping, location of stockpiles, wastes and contaminants outside of drainage lines and flood-prone areas, environmental incident and emergency response procedure to be followed in case of contaminant spills, availability of spill kits, appropriate storage of contaminants and wastes to prevent escape, training, regular review of mitigation effectiveness.	Minor	Likely	Low	Environmental Control Maps will be prepared for each construction zone and will incorporate relevant sensitive areas, mitigation measures and controls, including those from relevant management sub plans. ECMs are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.	D&C Environmental Manager

* An Environmental Aspect is an element of the organisations activities or products or services that can interact with the environment. (AS/NZS ISO14001:2004)

** An Environmental Impact is defined as any change to the environment or a component of the environment, whether adverse or beneficial, wholly or partially resulting from an organisations environmental aspects.(AS/NZS ISO14001:2004)

*** Risk description . This is the articulation of the resultant risk given the aspect and impact at the site.

Appendix A3: Environmental Policy

Appendix A4: Environmental Inspection Checklist

GRCLR Environmental Inspection Checklist

Project / Work Area:	
Inspection Date:	
Weather Conditions:	Dry ☐ Slight Wind ☐ Calm ☐ Rain ☐ Strong Wind ☐

Inspection Item	Acceptable (Y/N or n/a)	Supporting evidence	Action required and location	By	Closed (date)
1. Environmental Documents					
Have ECMs been developed for the area of works					
2. Water Quality					
Erosion controls required (i.e. sediment fences, geofabric) installed and in good working condition					
Catch drains/controls installed in proximity to waterways/drainage lines					
Works within waterway buffer zone (50m)					
Temporary flow diversions installed in flowing waterways					
3. Soil Conservation					
Stockpiles are away from waterways and drainage lines					
Do long term stockpiles require seeding					
Are areas of disturbed soil exposed to erosion					
4. Air quality					
Is dust from construction visible during inspection					
Is a water cart available to wet down areas					
Have daily inspections been conducted for dust					
5. Flora					
Is there protected/threatened flora present at area of works					
Are sensitive areas & protected vegetation protected with no-go zone fencing					
Are stockpiles kept away from					

Inspection Item	Acceptable (Y/N or n/a)	Supporting evidence	Action required and location	By	Closed (date)
no-go zones					
6. Fauna					
Is there protected/threatened flora present at area of works – Are controls in place					
Are sensitive areas & protected vegetation protected with no-go zone fencing					
7. Weed management					
Are weed-wash/brush-down areas being used/available					
Plant utilising access/haul roads					
8. Landscape Rehabilitation					
Is topsoil being stockpiled separately					
Are works being conducted with minimal footprint					
9. Archaeology and Heritage					
Is there any potential for Indigenous Heritage items to be impacted within works zone					
Are Heritage no-go and exclusion zones established and signed					
10. Groundwater					
Has groundwater been intercepted during works					
Is there a plan/procedure for dewatering					
11. Noise & Vibration					
Are works being conducted during normal working hours					
Is there potential for vibration impacts from works					
12. Hazardous Substances & Dangerous Goods					
Are spill kits available/accessible to plant operators					
Is there evidence of hydraulic/vehicle oil spills on site					
13. Waste Management					
Is the site clean and waste bins available					
Are appropriate and segregated waste bins available					

Additional Items / Opportunities for Improvement / Innovations			
Inspection by			
Signature:		**Date:**	

Appendix A5: SOM Organisational Charts

Figure A5 – 1 GRCLR Organisational Chart

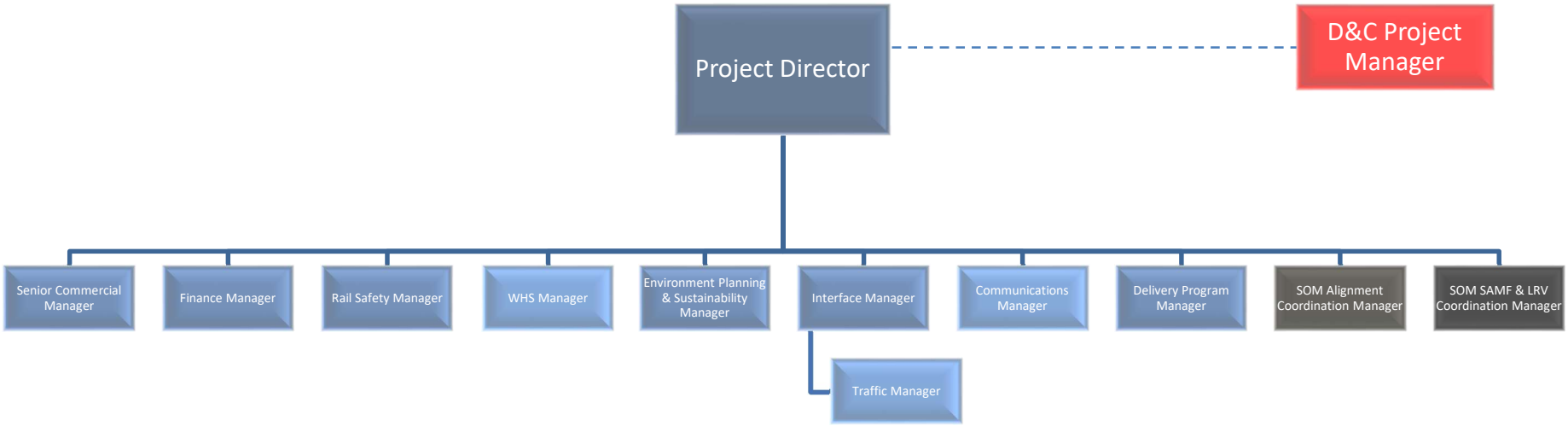


Figure A5 – 2 D&C Organisational Chart (Part A)

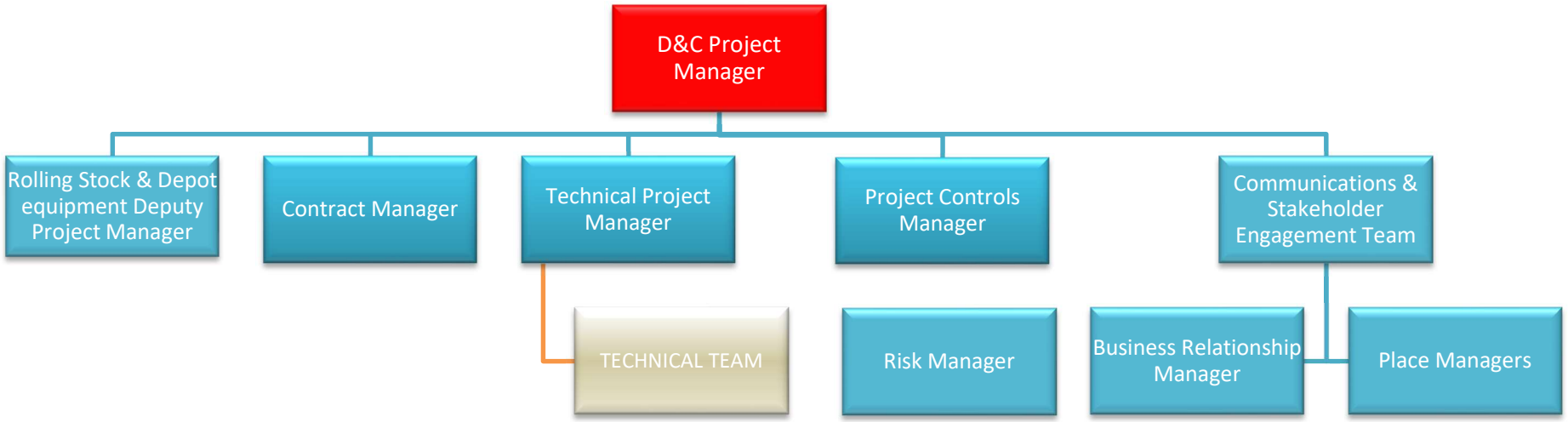
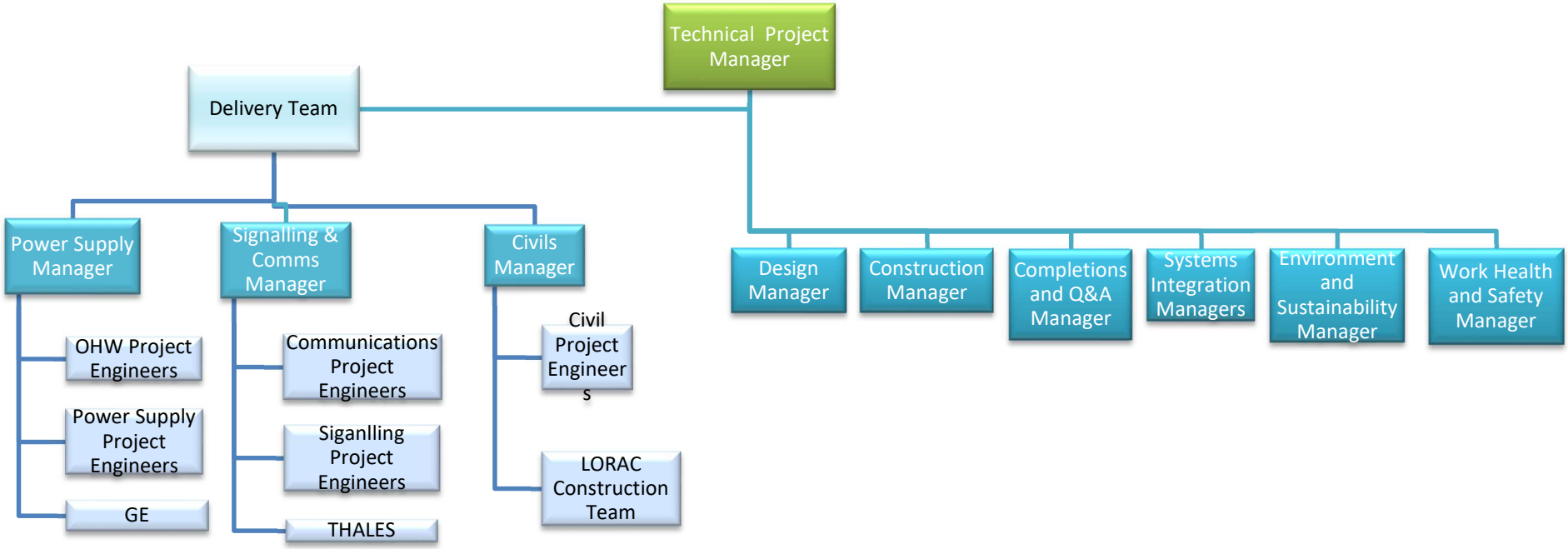


Figure A5 – 2 D&C Organisational Chart (Part B)



Appendix A6: CEMP Consultation Report

CoA A5 Consultation Report – Construction Environmental Management Plan

Transport for NSW
Stage/ Package

Parramatta Light Rail
February 2021
[PLR1SOM-GLR-ALL-EN-RPT-001002 and Revision D]

NSW GOVERNMENT

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Construction Environmental Management Plan

Parramatta Light Rail – Stage 1

February 2021

PLR1SOM-GLR-ALL-EN-RPT-001002 / Revision D

Version control

Revision	Date	Description	Approval
A	20 July 2020	CoA A5 Compliance	
B	31 July 2020	Updated based on ER comments	
C	19 August 2020	Updated with additional CoPC consultation	
D	19 February 2021	Updated for consultation on CEMP Package 5 Activity B as per Staging Report Rev 7.02.	

Contents

Glossary/Abbreviations

Abbreviation	Expanded text
CEMP	Construction Environmental Management Plan
CFFMP	Construction Flora and Fauna Management Plan
CFMP	Construction Flood Management Plan
CHMP	Construction Heritage Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CNVMonP	Construction Noise and Vibration Monitoring Program
CTTAMP	Construction Traffic, Transport and Access Management Plan
CWQ(T)MonP	Water Quality (Turbidity) Monitoring Program
CoA	NSW Minister for Planning Conditions of Approval
CoPC	City of Parramatta Council
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
FMDR	Flood Management Design Report
Minister, the	Minister for Planning, Industry and Environment
OEH	Office of Environment and Heritage
ONVR	Operational Noise and Vibration Review
PIRMP	Pollution Incident Response Management Plan
Planning Approval	The Planning Approval includes the Conditions of Approval, the EIS and the Submissions and Preferred Infrastructure Report
Proponent, the	Transport for NSW
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Project, the	Parramatta Light Rail – Westmead to Carlingford
REMMM	Revised Environmental Mitigation and Management Measure as outlined in the Project SPIR documentation.
ROL	Road occupancy licence
SEMP	Site Establishment Management Plan
SPIR	Submission and Preferred Infrastructure Report

Abbreviation	Expanded text
TfNSW RM	TfNSW Roads and Maritime
UDRR	Urban Design Requirements Report

1 Introduction

1.1 Background

Parramatta Light Rail is one of the NSW Government's major infrastructure projects being delivered to serve a growing Sydney.

Parramatta Light Rail will connect Westmead to Carlingford via Parramatta Central Business District (CBD) and Camellia. PLR 1 is expected to be operational in 2023.

The project will create new communities, connect great places and help both local residents and visitors move around and explore what the region has to offer. The route will link Parramatta's CBD and train station to a number of key locations, including the Westmead Precinct, the Parramatta North Growth Centre, the new Western Sydney Stadium, the Camellia Town Centre, the new Powerhouse Museum and Riverside Theatre arts and cultural precinct, the private and social housing redevelopment at Telopea, the Rosehill Gardens Racecourse and the three Western Sydney University campuses.

In summary, the key features of the project include:

- A new dual track light rail network of approximately twelve (12) kilometres in length, including approximately seven (7) kilometres within the existing road corridor and approximately five (5) kilometres within the existing Carlingford Line and Sandown Line, replacing current heavy rail services
- Sixteen (16) stops that are fully accessible and integrated into the urban environment including a terminus stop at each end of Westmead and Carlingford
- High frequency 'turn-up-and-go' services operating seven days a week from 5am to 1am. Weekday services will operate approximately every 7.5 minutes in the peak period between 7am and 7pm
- Modern and comfortable air-conditioned light rail vehicles, nominally 45 metres long and driver-operated, each carrying up to 300 passengers.
- Intermodal interchanges with existing public transport services at Westmead terminus, Parramatta CBD and the Carlingford terminus
- Creation of two light rail and pedestrian zones (no general vehicle access) within the Parramatta CBD along Church Street (generally between Market Street and Macquarie Street) and along Macquarie Street (generally between Horwood Place and Smith Street)
- A Stabling and Maintenance (SaM) Facility located in Camellia for light rail vehicles to be stabled, cleaned and maintained
- New bridge structures along the alignment including over James Ruse Drive and Clay Cliff Creek, Parramatta River (near the Cumberland Hospital), Kissing Point Road and Vineyard Creek, Rydalmere
- Alterations to the existing road network including line marking, additional traffic lanes and turning lanes, new traffic signals, and changes to traffic flows
- Relocation and protection of existing utilities
- Public domain and urban design works along the corridor and at Stop precincts
- Closure of the heavy rail line between Carlingford and Clyde
- Active transport corridors and additional urban design features along sections of the alignment and within Stop precincts

- Integration with the Opal Electronic Ticketing System (ETS)
- Real time information in light rail vehicles and at Stops via visual displays and audio.

An overview of Parramatta Light Rail Route is shown in Figure 1-1.

Figure 1-1: Parramatta Light Rail Route

1.1.1 Statutory Context

The Parramatta Light Rail is subject to environmental impact assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act). It is classified as Critical State Significant Infrastructure (CSSI).

Detailed environmental impact assessments have been carried out and approved by the Minister for Planning. The Planning Approval for the project is described in Section 1.1.2.

1.1.2 Parramatta Light Rail Planning Approval

The Environmental Impact Statement (EIS) assessed impacts for Parramatta Light Rail (Westmead to Carlingford). This covered the light rail and associated works including road enabling work. It was approved by the Minister for Planning on 29 May 2018.

The planning approval (Infrastructure approval SSI 8285) and related environmental assessment documents are located on Department of Planning and Environment's Major Project website:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8285

1.2 Purpose of this Consultation Report

This Consultation Report has been prepared to meet the requirements of the CSSI approval, in particular Condition of Approval (CoA) A5. A5 outlines the requirements for undertaking and documenting consultation undertaken during the preparation of certain plans, programs and reports required under the CoA. Deliverables that GRCLR is responsible (in full or part) for as part of the SOM package, which required to comply with CoA A5 include the following:

- Construction Environmental Management Plan (CoA C1, C2);
- Traffic, Transport and Access Management Plan (CoA C3(a));
- Noise and Vibration Management Plan (CoA C3(b));
- Flood Management Plan (CoA C3(c));
- Heritage Management Plan (CoA C3(d));
- Flora and Fauna Management Plan (CoA C3(e));
- Water Quality (Turbidity) Monitoring Program (CoA C9(a));
- Noise and Vibration Monitoring Program (CoA C9(b));
- Site Establishment Management Plan (CoA C18);
- Pedestrian and Cyclist Network and Facilities Strategy (parts (f) – signage and wayfinding and (g) only – cycle facilities on LRVs) (CoA E14);
- Operational Noise and Vibration Review (CoA E48);
- Heritage Interpretation Strategy (CoA E64) – Implementation Component only;
- Electromagnetic Management Plan (CoA E117);
- Final Hazard Analysis and Construction Safety Study (CoA E132).

This particular Consultation Report has been prepared in support of the Construction Environmental Management Plan (CEMP) which is required to be prepared under CoA C1 and C2 and for which consultation is required to be undertaken with the following agencies and stakeholders under CoA C5:

- Relevant government agencies (including relevant Council(s)), which for this CEMP includes:
    - Environment Protection Authority (EPA);
    - Roads and Maritime Services (RMS);
    - Sydney Water; and
    - City of Parramatta Council (CoPC).

This report includes consultation evidence for both:

- CEMP – Package 5 Activity A (Staging Report Revision 7.02); and
- CEMP – Package 5 Activity B (Staging Report Revision 7.02).

1.3 Compliance with CoA

This section discusses the compliance of this Consultation Report with the relevant CoA as applicable to consultation required to be undertaken during the development of the Construction Environmental Management Plan (CEMP).

Table 1 lists the applicable CoA, where and how they have been addressed in this Consultation Report.

Table 1: Compliance with Applicable CoA

CoA ID	CoA Detail	Where Addressed	How Addressed
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Secretary with the document or monitoring program or review. The evidence must include:	This Consultation Report.	This consultation report provides identifies of each of the stakeholders and agencies consulted in the preparation of this plan (Section 1.2). Full correspondence and documentation exchanged during consultation is found the Appendix A1 through A4 inclusive.
A5	(a) documentation of the engagement with the party(ies) identified in the relevant condition of approval before submitting the document for approval;	This Consultation Report.	Full correspondence and documentation exchanged during consultation is found the Appendix A1 through A4 inclusive. Each appendix relates to a different stakeholder/ agency, thereby ensuring all evidence for each is consolidated in a single appendix. All correspondence is provided in a chronological order.
A5	(b) log of the points of engagement or attempted engagement with the identified party(ies) and a summary of the issues raised by the identified party(ies);	Section 2 of this Report.	Section 2 includes, by Stakeholder / agency, a log of all points of engagement completed or attempted. It also summarises the issues raised by each stakeholder.
A5	(c) documentation of any follow-up with the identified party(ies), where feedback has not been provided, to confirm that the identified party(ies) has none or has failed to provide feedback after repeated requests;	Section 2 of this Report.	Section 2 includes, by Stakeholder / agency, a log of all points of engagement completed or attempted.

CoA ID	CoA Detail	Where Addressed	How Addressed
A5	(d) outline of the issues raised by the identified party(ies) and how they have been addressed, including evidence that the party(ies) is satisfied the issues have been addressed; and	Section 2 of this Report and Appendix A1 through A5.	Section 2 identifies all the issues raised during consultation. It provides in tabular format: • Issue raised; • Date raised; • How it was addressed or justification as to why it wasn't addressed; • Details of whether the Stakeholder was satisfied with the outcome. Section 2 then provides cross-referencing to the relevant Appendix identifying where evidence of the above is documented in full within this Report. *Note: Section 2 is broken down into each Stakeholder consulted with, and each has their own table addressing the above.*
A5	(e) where there are outstanding issues raised by the identified party(ies) that have not been adopted, the reasons why they have not been/could not be adopted must be provided, including evidence of consultation with the relevant party(ies).	Section 2 of this Report.	Section 2 identifies all the issues raised during consultation. It provides in tabular format: • Issue raised; • Date raised; • How it was addressed or justification as to why it wasn't addressed; • Details of whether the Stakeholder was satisfied with the outcome. *Note: Section 2 is broken down into each Stakeholder consulted with, and each has their own table addressing the above.*
C5	The CEMP Sub-plans must be developed in consultation with relevant government agencies (including Relevant Council(s)).	This Report.	This Consultation Report has been prepared to address the consultation undertaken on the CEMP for the SOM Works. A summary of the content of this Report is contained in Section 1.2.3 of the CEMP, however all the consultation requirements of

CoA ID	CoA Detail	Where Addressed	How Addressed
			CoA A5 and C5 are addressed in detail in this Report.
C5	Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including all copies of correspondence from those agencies, must be provided to the Secretary with the relevant CEMP Sub-plan.	Other Consultation Reports.	Each CEMP Sub-plan will include a summary of consultation undertaken for that plan. Additionally, each will also have a separate Consultation Report which addresses in detail CoA A5 and C5.

1.4 Consultation Process

Below Figure 2 presents the consultation process that was undertaken for the SOM Construction Environmental Management Plan. It should be noted that consultation was undertaken during COVID-19 lockdown, and as such, was undertaken using non-face to face means, including:

- Formal correspondence; (Team Binder);
- Formal correspondence (standard email);
- Phone Calls; and
- Teams Meetings (only when requested by the stakeholder).

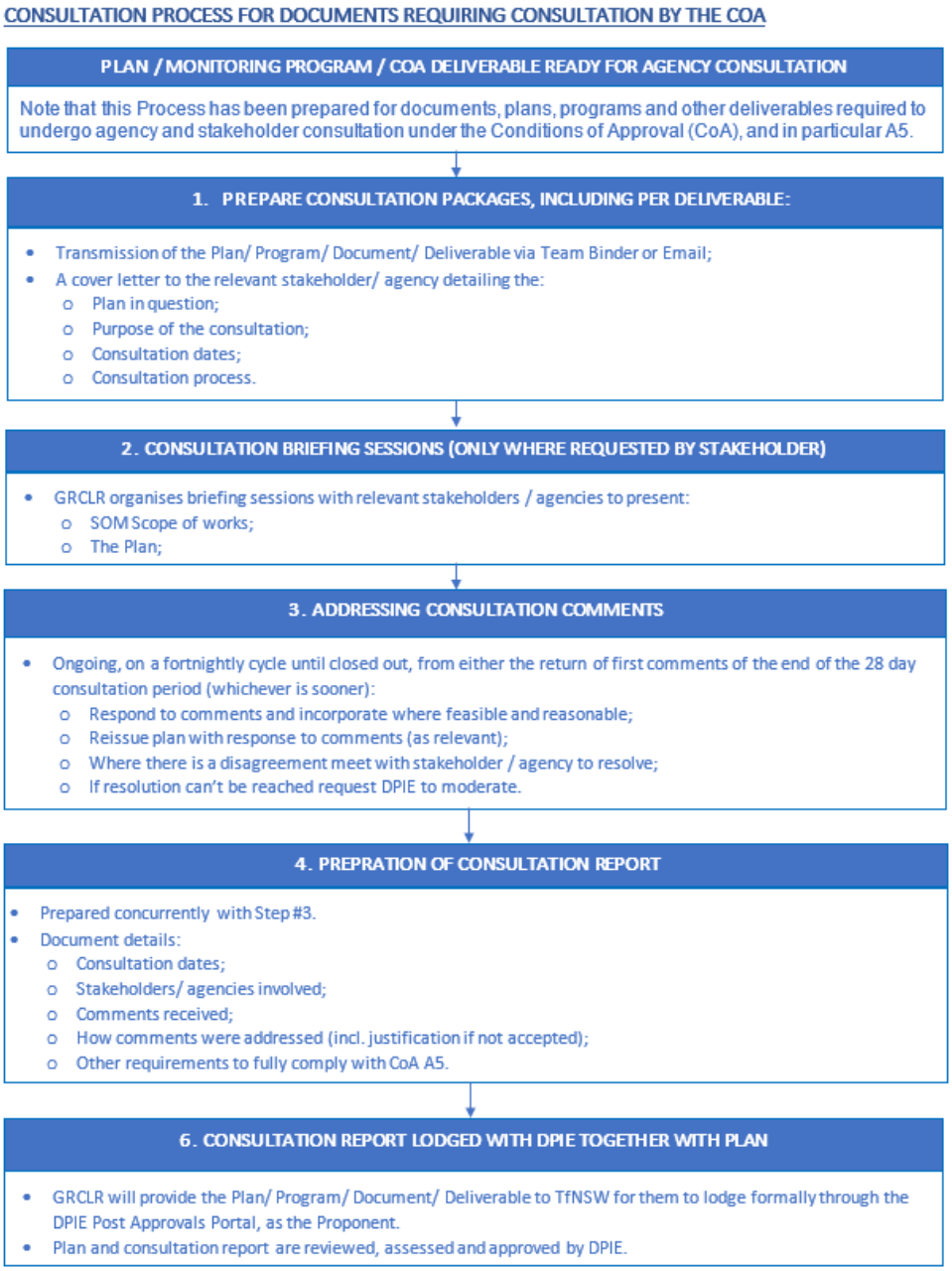

Figure 2: Consultation Process

2 Stakeholder / Agency Consultation – Package 5 Activity A CEMP

This Section of the Consultation Report provides detail of consultation undertaken with each stakeholder and agency in the preparation of the initial CEMP for Package 5 Activity A (Staging Report Rev 7.02), being for the SaMF site only. In particular it contains:

A consultation log that identifies:

- Consultation dates (actual and attempted);
- Form of consultation;
- Whether responses and / or comments were received;
- Summary of the issues raised, including how they have been addressed;
- Justification for not addressing an issue raised.

Documentary evidence of all the correspondence received and sent through the consultation phase is contained in the Appendices at the end of this Report. The Appendices and this Section are broken down by Stakeholder / Agency not by issue.

2.1 Environment Protection Authority

Consultation with the EPA commenced on 28 May 2020 and concluded 25 June 2020.

Table 2 below includes the details of engagement between GRCLR and the EPA regarding the CEMP. Table 3, following, includes a summary of the issues raised, how those were addressed and closed out. Full evident of correspondence is in Appendices A1 through A4 to this report.

Table 2: Engagement Log

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
1	28 May 2020	Team Binder	Initial request for stakeholder review and comment.	GRCLR	EPA	Open.
2	16 June 2020	Email	Response to request for comments – no comments.	EPA	GRCLR	Closed.

Table 3: Summary of Issues

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Not applicable to EPA as no comments were provided.				

2.2 TfNSW Roads and Maritime

Consultation with the TfNSW RM commenced on 28 May 2020 and concluded 25 June 2020.

Table 4 below includes the details of engagement between GRCLR and the TfNSW RM regarding the CEMP. Table 5 following includes a summary of the issues raised, how those were addressed and closed out. Full evident of correspondence is in Appendix A2 to this report.

Table 4: RMS Engagement Log

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
1	28 May 2020	Team Binder	Initial request for stakeholder review and comment.	GRCLR	TfNSW RM	Open.
2	16 June 2020	Email	Response to request for comments – no comments.	TfNSW RM	GRCLR	Closed.

Table 5: TfNSW RM Summary of Issues

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Not applicable to TfNSW RM as no comments were provided.				

2.3 Sydney Water

Consultation with the Sydney Water commenced on 28 May 2020 and concluded 25 June 2020.

Table 6 below includes the details of engagement between GRCLR and the Sydney Water regarding the CEMP. Table 7 following includes a summary of the issues raised, how those were addressed and closed out. Full evident of correspondence is in Appendix A3 to this report.

Table 6: Sydney Water Engagement Log

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
1	28 May 2020	Team Binder	Initial request for stakeholder review and comment.	GRCLR	Sydney Water	Open.
2	17 June 2020	Email	Response to request for comments – Three (3) comments were received and have been addressed as per Table 7 below.	Sydney Water	GRCLR	Open.

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
3	6 July 2020	Email.	GRCLR provided response to comments from Sydney Water.	GRCLR	Sydney Water	Open.
4	10 July 2020	Email.	Stakeholder confirmed comments closed for CEMP.	Sydney Water	GRCLR	Closed.

Table 7: Sydney Water Summary of Issues

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Sub-Plans	Sub-plans were not provided for Sydney Water Review	17/6/2020	Addressed through provision of email correspondence (6/7/2020) to Sydney Water stating that the other sub-plans (as relevant to Sydney Water) will be provided for review when they have completed internal, Proponent and Environment Representative review.	Yes. Closed in correspondence 10 July 2020.
Sub-Plans	Flood Management has not been provided for Sydney Water Review.	17/6/2020	Addressed through provision of email correspondence (6/7/2020) to Sydney Water stating that the other sub-plans (as relevant to Sydney Water) will be provided for review when they have completed internal, Proponent and Environment Representative review.	Yes. Closed in correspondence 10 July 2020.
Trade Waste Agreement	A Trade Waste Agreement is being negotiated for the remediation site 6 Grand Avenue, Camellia which we would expected to be referenced in	17/6/2020	Addressed through provision of email correspondence (6/7/2020) to Sydney Water stating that the Trade Waste Licence, and all matters relating to the remediation of the 6 Grand Avenue site, as the subject of the LTEMP which is still in	Yes. Closed in correspondence 10 July 2020.

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
	Section 3.4 Approvals, Permits & Licensing. At the very least is it mentioned in the soil & water management plan. A copy of this plan would be required to confirm.		draft form, and the details of which are still being finalised. GRCLR confirmed that the LTEMP will be treated as a stand-alone document to be implemented concurrently with this CEMP and associated subplans, and will take precedence where required as it will be subject of sign-off and approval by an EPA registered Site Auditor.	

2.4 City of Parramatta Council

Consultation with the City of Parramatta Council (CoPC) commenced on 28 May 2020 and concluded 25 June 2020.

Table 8 below includes the details of engagement between GRCLR and the CoPC regarding the CEMP. Table 9 following includes a summary of the issues raised, how those were addressed and closed out. Full evident of correspondence is in Appendix A4 to this report.

Table 8: CoPC Engagement Log

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
1	28 May 2020	Team Binder	Initial request for stakeholder review and comment.	GRCLR	CoPC	Open.
2	25 June 2020	Team Binder	Response to request for comments – Ten (10) comments were received and have been addressed as per Table 9 below.	CoPC	GRCLR	Open.
3	6 July 2020	Team Binder	GRCLR provided response to comments from CoPC (including tracking sheet).	GRCLR	CoPC	Open.

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
4	16 July 2020	Team Binder	Stakeholder confirmed comments closed for CEMP.	CoPC	GRCLR	Closed.
5	GRCLR	Team Binder	GRCLR provided letter correspondence closing CEMP consultation.	GRCLR	CoPC	Closed.

Table 9: CoPC: Summary of Issues

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Incident Close Out; Auditing and Compliance Reporting	Suggest a higher close out and attendance rate for inspections, incidents. Compliance reporting and auditing model is not clearly identified nor is a management model. Auditing approach, frequency and disclosure of performance should be identified and inclusive of all key government stakeholders inclusive of the CoP.	25/6/2020	This is a CSSI project. Incident notification, Auditing and compliance reporting are governed by DPIE, through the CoA, and the Proponent (TfNSW) through the deed. All incident reporting is managed by the CoA, but also, the POEO Act which requires that all affected stakeholders are notified immediately. The CEMP is consistent with these requirements, and CoPC does not have a role in the governance of these activities. The Project Wide Audit Program is currently the responsibility of TfNSW, and GRCLR must comply with its requirements under CoA A41, A42 and A43.	Yes. Closed in correspondence 16 July 2020.
Design Changes	Confirm that value engineered or any other changes to project outcomes	25/6/2020	Addressed in correspondence (6/07/2020). No change made to CEMP as	Yes.

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
	post AFC is communicated with COPC as a key stakeholder for any changes that affect COPC owned land or assets, and that a review and approval process is in place to ascertain its satisfaction with the proposed changes. Confirm this in reporting.		comment refers the design process, managed separately to the CEMP. AFC is the final design gate, marking the end of all design and value engineering activities. If any post AFC changes are required, this will be managed through the existing design process, and communication channels between CoPC, TfNSW and GRCLR, which include: • Review of Design Packages; • Attendance as design Package Presentations; • Monthly executive meetings.	Closed in correspondence 16 July 2020.
Asset Management	Include requirements to liaise with COPC regarding any item affecting COPC land or assets at all environmental and construction management levels.	25/6/2020	Addressed in correspondence (6/07/2020). No change made to CEMP as asset management is managed separately to the CEMP. All communication and liaison for asset management, including construction and O&M matters are to managed through the he existing communication channels between CoPC, TfNSW and GRCLR, which include: • Construction Coordination Meeting (fortnightly); • Monthly executive meetings.	Yes. Closed in correspondence 16 July 2020.

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Project Wide Tree Impacts	Confirm how this clause relates to the project wide tree register and list of trees nominated for removal for the project as whole. Confirm (within the report) that this clause does not permit removal of trees outside of the project wide tree removal permissions as nominated in the Tree Registers for Sections 1, 2 and3.	25/6/2020	Addressed in correspondence (6/07/2020). No change made to CEMP as the detail requested is addressed in the FFMP, which is yet to be provided to CoPC for review and comment, separately to the CEMP. Note that GRCLR will not be impacting trees at the SaMF site (for which this CEMP has been prepared), and further is unlikely to impact trees at any other location along the alignment for the next revision of the CEMP.	Yes. Closed in correspondence 16 July 2020.
Roles and Responsibilities	CEMP should clearly identify accountability and responsibility for implementation and compliance. This should be inclusive from Project Director level to the Environmental Manager of individual sites. This should be a priority item in the Exec Summ and Body of the Report. Appended generic org charts provided do not clearly achieve this.	25/6/2020	Addressed in correspondence (6/07/2020). No change made to CEMP as CEMP contains the requested information, and is following the TfNSW template, consistent with the other delivery packages.	Yes. Closed in correspondence 16 July 2020.
Monitoring	A process for site specific and project specific monitoring and controls needs to be identified to ensure local environmental risks and project specific	25/6/2020	Addressed in correspondence (6/07/2020). No change made to CEMP as the CEMP includes the appropriate level of detail for a CEMP, with additional requirements	Yes. Closed in correspondence 16 July 2020.

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
	hazards are dealt with appropriately. CoP requests review of these plans prior to implementation.		addressed in subplans and monitoring programs that are yet to be provided to CoPC for review and comment, separately to the CEMP. Sub-plans and monitoring programs to be sent to CoPC include: • Construction Flora and Fauna Management Plan; • Construction Heritage Management Plan; • Construction Flood Management Plan; • Construction Traffic, Transport and Access Management Plan; • Construction Noise and Vibration Management Plan; and • Construction Noise and Vibration Monitoring Program. Note: The Monitoring Program for Grey-Headed Flying Fox has been prepared by TfNSW.	

3 Stakeholder / Agency Consultation – Package 5 Activity B CEMP

This Section of the Consultation Report provides detail of consultation undertaken with each stakeholder and agency in the preparation of the initial CEMP for Package 5 Activity B (Staging Report Rev 7.02). This is an update to the initial CEMP to include all Package 5 works. In particular it contains:

A consultation log that identifies:

- Consultation dates (actual and attempted);
- Form of consultation;
- Whether responses and / or comments were received;
- Summary of the issues raised, including how they have been addressed;
- Justification for not addressing an issue raised.

Documentary evidence of all the correspondence received and sent through the consultation phase is contained in the Appendices at the end of this Report. The Appendices and this Section are broken down by Stakeholder / Agency not by issue.

3.1 Environment Protection Authority

Consultation with the EPA commenced on 27 November 2020 and concluded 15 December 2020.

Table 10 below includes the details of engagement between GRCLR and the EPA regarding the CEMP. Table 11, following, includes a summary of the issues raised, how those were addressed and closed out. Full evident of correspondence is in Appendices A1 through A4 to this report.

Table 10: Engagement Log

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
1	27 November 2020	Team Binder	Initial request for stakeholder review and comment.	GRCLR	EPA	Open.
2	15 December 2020	Email	Response to request for comments – no comments.	EPA	GRCLR	Closed.

Table 11: Summary of Issues

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Not applicable to EPA as no comments were provided.				

3.2 TfNSW Roads and Maritime

Consultation with the TfNSW RM commenced on 27 November 2020 and concluded 7 December 2020.

Table 12 below includes the details of engagement between GRCLR and the TfNSW RM regarding the CEMP. Table 13 following includes a summary of the issues raised, how those were addressed and closed out. Full evident of correspondence is in Appendix A2 to this report.

Table 12: RMS Engagement Log

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
1	27 November 2020	Team Binder	Initial request for stakeholder review and comment.	GRCLR	TfNSW RM	Open.
2	7 December 2020	Team Binder	Response to request for comments – no comments.	TfNSW RM	GRCLR	Closed.

Table 13: TfNSW RM Summary of Issues

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Not applicable to TfNSW RM as no comments were provided.				

3.3 Sydney Water

Consultation with the Sydney Water commenced on 27 November 2020 and concluded 2 February 2021.

Table 14 below includes the details of engagement between GRCLR and the Sydney Water regarding the CEMP. Table 15 following includes a summary of the issues raised, how those were addressed and closed out. Full evident of correspondence is in Appendix A3 to this report.

Table 14: Sydney Water Engagement Log

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
1	27 November 2020	Team Binder	Initial request for stakeholder review and comment.	GRCLR	Sydney Water	Open.
2	22 December 2020	Email	Response to request for comments – One comment raised which been addressed as per Table 15 below.	Sydney Water	GRCLR	Open.

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
3	7 January 2021	Email.	GRCLR provided response to comments from Sydney Water.	GRCLR	Sydney Water	Open.
4	2 February 2021	Email.	Stakeholder confirmed comments closed for CEMP.	Sydney Water	GRCLR	Closed.

Table 15: Sydney Water Summary of Issues

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Stray Current Monitoring	Is the monitoring of stray currents during the project considered a construction activity, and therefore needs to be referenced in the CEMP?	22 December 2020	GRCLR provided the following response: Stray current is not an issue until construction is complete and the asset is powered up as part of testing and commissioning. Monitoring of stray current is considered to be part of operational testing and therefore will be managed through the processes and procedures within the GRCLR Environmental Management System rather than through the CEMP.	Yes. Closed in correspondence 2 February 2020.

3.4 City of Parramatta Council

Consultation with the City of Parramatta Council (CoPC) commenced on 27 November 2020 and concluded 18 February 2021.

Table 16 below includes the details of engagement between GRCLR and the CoPC regarding the CEMP. Table 17 following includes a summary of the issues raised, how those were addressed and closed out. Full evident of correspondence is in Appendix A4 to this report.

Table 16: CoPC Engagement Log

#	Date	Correspondence		From	Recipient	Consultation Open / Closed
		Form / Type	Purpose			
1	27 November 2020	Team Binder	Initial request for stakeholder review and comment.	GRCLR	CoPC	Open.
2	3 February 2021	Email	GRCLR following up Council to provide comments.	GRCLR	CoPC	Open.
3	10 February 2021	Email	GRCLR requesting TfNSW assistance to obtain an acknowledgment/ response to initial request for comment.	GRCLR	TfNSW	Open.
4	11 February 2021	Email	TfNSW assistance to obtain an acknowledgment/ response to initial request for comment.	TfNSW	CoPC	Open.
5	16 February 2021	Email	CoPC confirming they have the correct documents to be reviewed.	CoPC	TfNSW	Open.
6	16 February 2021	Email	TfNSW confirming the document versions are correct.	TfNSW	CoPC	Open.
7	18 February 2021	Email	CoPC confirming that their response would be sent to GRCLR that same day.	CoPC	TfNSW	Open.
8	18 February	Team Binder	Response to request for comments – no comments on CEMP.	CoPC	GRCLR	Closed

Table 17: CoPC: Summary of Issues

Aspect	Issue Raised	Date Raised	How Addressed / Justification Why Not Addressed	Stakeholder Satisfied / Issue Closed Out?
Not applicable to CoPC as no comments were provided on the CEMP. Comments were provided for FFMP but these are dealt with the FFMP A5 Consultation Report submitted with the FFMP, separately to the CEMP.				

Appendix A1 – Environment Protection Authority

From: @epa.nsw.gov.au>
Sent: Tuesday, 15 December 2020 10:44 AM
To: @greatrivercity.com.au>
Cc: @epa.nsw.gov.au>; @transport.nsw.gov.au>; A@greatrivercity.com.au>; @caf.net;>
Subject: RE: Parramatta Light Rail - SOM CEMP Rev 4 Whole Alignment - Consultation Request

Hi

Thank you for your email regarding documents for the *Parramatta Light Rail – Stage 1* (SSI 8285) approval.

I note receipt of the ***Construction Environmental Management Plan – Rev 4 (Supply, Operate, Maintain Package)***, dated November 2020, submitted to satisfy condition C3(b) of the SSI 8285 approval.

Consistent with its policy regarding post-approval management plans, the EPA will not be commenting or endorsing the above document.

Kind regards

Environmental Planner
Regulatory Operations Metro North
NSW Environment Protection Authority

www.epa.nsw.gov.au @NSW_EPA

The EPA acknowledges the traditional custodians of the land and waters where we work. As part of the world's oldest surviving culture, we pay our respect to Aboriginal elders past, present and emerging.

Report pollution and environmental incidents 131 555 or +61 2 9995 5555

From: greatrivercity.com.au>
Sent: Friday, 27 November 2020 3:00 PM
To: EPA Regulatory Operations Metro Regulation Mailbox <RegOps.MetroRegulation@epa.nsw.gov.au>
Cc: epa.nsw.gov.au>; transport.nsw.gov.au>; @greatrivercity.com.au>; caf.net;

Subject: Parramatta Light Rail - SOM CEMP Rev 4 Whole Alignment - Consultation Request

Dear,

Great River City Light Rail (GRCLR) has been engaged by Transport for NSW (TfNSW) to design and construct a portion of the Parramatta Light Rail (PLR) Project. GRCLR has prepared a Construction Environmental Management Plan (CEMP – Rev 4) as required under the CSSI Approval (8285) and is required to undertake consultation with the NSW Environment Protection Authority (EPA) on this plan.

GRCLR notes that this document is a revision of the plan approved by DPIE. It has been revised to extend its coverage from the Stabling and Maintenance Facility (SaMF) site to include the entire GRCLR scope.

GRCLR also notes that EPA reviewed and commented on previous revisions of this plan and invites EPA to review and comment on the changes made to the approved CEMP. To assist your review we have included both clean and tracked changes versions of the plan.

GRCLR requests that if EPA would like to provide comments on this plan, would you please return these by Friday 18th December 2020 using the Review Comments Register attached.

Please contact me should you have any questions regarding the review of these plans.

Thanks

Environment, Planning & Sustainability Manager

M
Egreatrivercity.com.au

Level 1, 31 Macquarie St, Parramatta NSW 2150

Appendix A2 – NSW RMS

General Correspondence

Reference No.: **PLR-PLR1SOM-RMS-GLR-CORR-000018**

Project Title: Parramatta Light Rail - Main Works

Date: 07 December 2020, 15:49

To: Great River City Light Rail Pty Ltd Roads and Maritime Services

Cc: Transport for NSW
Great River City Light Rail Pty Ltd
Transport for NSW
Roads and Maritime Services

From: RMS Integration, Roads and Maritime Services

Subject: **RE: PLR SOM - CEMP Rev 4 - Whole Alignment Update - Consultation Request**

Dear

Thank you for the opportunity to review this.

Network Integration (RMS) advises that it does not have any comments.

Best Regards

Network Integration Lead
TfNSW

Design Pkg:

Contract / Program: Stage 1 Supply Operate and Maintain Contract

Discipline: Construction Management

Location:

----- Original Message -----

Document Transmittal

Project Number: PLRM

Transmittal No: PLRM-GLR-RMS-TX-000006

Project Title: Parramatta Light Rail - Main Works

Date: 27 November 2020 03:24 PM

Subject: PLR SOM - CEMP Rev 4 - Whole Alignment Update - Consultation Request

Reason for Issue: Issued For Review

Message:

Dear ,

Great River City Light Rail (GRCLR) has been engaged by Transport for NSW (TfNSW) to design and construct a portion of the Parramatta Light Rail (PLR) Project. GRCLR has prepared a Construction Environmental Management Plan (CEMP – Rev 4) as required under the CSSI Approval (8285) and is required to undertake consultation with TfNSW Roads and Maritime Services (RMS) on this plan.

GRCLR notes that this document is a revision of the plan approved by DPIE. It has been revised to extend its coverage from the Stabling and Maintenance Facility (SaMF) site to include the entire GRCLR scope.

GRCLR also notes that RMS reviewed and commented on previous revisions of this plan and invites RMS to review and comment on the changes made to the approved CEMP. To assist your review, we have included both clean and tracked changes versions of the plan with this letter.

GRCLR requests that if RMS would like to provide comments on this plan, would you please return these by Friday 18th December 2020.

Please contact the GRCLR Environment, Planning and Sustainability Manager, should you have any questions regarding the review of this plan.

Environment and Sustainability Manager
Parramatta Light Rail Stage 1
Supply, Operate and Maintain

Transmitted to:

Company	Name
Roads and Maritime Services	

Transmitted cc:

Company	Name
Transport for NSW	
Great River City Light Rail Pty Ltd	
Great River City Light Rail Pty Ltd	
Transport for NSW	
Great River City Light Rail Pty Ltd	
Roads and Maritime Services	
Roads and Maritime Services	
Roads and Maritime Services	
Transport for NSW	
Transport for NSW	

Click here to download all Transmittal files.

Click on Document Nos to download them individually.

Item	Document No	Rev	Sts	Title	Alt Doc Number	Design Package No
1	PLR1SOM-GLR-ALL-PM-PLN-000014	04	S2	Construction Environmental Management Plan	PLR-SOM-GLR-PJT-PM-PLN-00014	

Transmitted by: Great River City Light Rail Pty Ltd

Appendix A3 – Sydney Water

From: Sydneywater.com.au>
Sent: Tuesday, 2 February 2021 12:59 PM
To:
Cc: @transport.nsw.gov.au;

Subject:

Thank you for your response to my queries regarding stray currents. I have no further comments in relation to the CEMP.

I have copied a colleague Divini Tsoi in this email as she is taking over the management of the Parramatta Light Rail Project over the coming weeks as I transition to the West Portfolio within my team.

Infrastructure Account Manager
City Growth & Development | Business Development Group
Sydney Water, Level 13, 1 Smith Street, Parramatta NSW 2150

Regards

Infrastructure Account Manager

City Growth & Development | Business Development Group Sydney Water, Level 13, 1 Smith St Parramatta NSW 2150

sydneywater.com.au

From: @greatrivercity.com.au>
Sent: Tuesday, 2 February 2021 11:17 AM
To: @sydneywater.com.au>
Cc: s@transport.nsw.gov.au>; @greatrivercity.com.au>; @caf.net; >; @sydneywater.com.au>;
Subject: RE: [External] Parramatta Light Rail - SOM CEMP Rev 4 Whole Alignment - Consultation Request

I just wanted to close out consultation on this plan with Sydney Water.

Can you confirm that you have no further comments at this stage.

Thanks

Environment, Planning & Sustainability Manager

Level 1, 31 Macquarie St, Parramatta NSW 2150

From:
Sent: Thursday, 7 January 2021 5:07 PM
To: sydneywater.com.au>
Cc: @transport.nsw.gov.au>; greatrivercity.com.au>; @caf.net; L@sydneywater.com.au>
Subject: RE: [External] Parramatta Light Rail - SOM CEMP Rev 4 Whole Alignment - Consultation Request

Thank you for your response on the CEMP.

With regard to your question regarding the monitoring of stray current:

- Stray current is not an issue until construction is complete and the asset is powered up as part of testing and commissioning.
- Monitoring of stray current is considered to be part of operational testing and therefore will be managed through the processes and procedures within the GRCLR Environmental Management System rather than through the CEMP.

I trust the above response answers your question

adequately.

Thanks

Environment, Planning & Sustainability Manager

M

Level 1, 31 Macquarie St, Parramatta NSW 2150

From: @sydneywater.com.au>
Sent: Tuesday, 22 December 2020 7:51 PM
To: @greatrivercity.com.au>
Cc: @transport.nsw.gov.au>; @greatrivercity.com.au>;@caf.net; Lsydneywater.com.au>
Subject: RE: [External] Parramatta Light Rail - SOM CEMP Rev 4 Whole Alignment - Consultation Request

Hi ,

We appreciate the extension of time to respond.

I've have had a chance to read the CEMP and only have one question. Is the monitoring of stray currents during the project considered a construction activity, and therefore needs to be referenced in the CEMP?

I understand the activity is a non-destructive test that records baseline and then subsequent monitoring of metallic assets over time (once the light rail is operational).

Regards,

Infrastructure Account Manager

City Growth & Development | Business Development Group
Sydney Water, Level 13, 1 Smith St Parramatta NSW 2150

sydneywater.com.au

From: @greatrivercity.com.au>
Sent: Friday, 27 November 2020 3:06 PM
To: @sydneywater.com.au>
Cc: @transport.nsw.gov.au; @greatrivercity.com.au>; @caf.net;

Subject: [External] Parramatta Light Rail - SOM CEMP Rev 4 Whole Alignment - Consultation Request

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear ,

Great River City Light Rail (GRCLR) has been engaged by Transport for NSW (TfNSW) to design and construct a portion of the Parramatta Light Rail (PLR) Project. GRCLR has prepared a Construction Environmental Management Plan (CEMP – Rev 4) as required under the CSSI Approval (8285) and is required to undertake consultation with Sydney Water on this plan.

GRCLR notes that this document is a revision of the plan approved by DPIE. It has been revised to extend its coverage from the Stabling and Maintenance Facility (SaMF) site to include the entire GRCLR scope.

GRCLR also notes that Sydney Water reviewed and commented on previous revisions of this plan and invites Sydney Water to review and comment on the changes made to the approved CEMP. To assist your review we have included both clean and tracked changes versions of the plan.

GRCLR requests that if Sydney Water would like to provide comments on this plan, would you please return these by Friday 18th December 2020 using the Review Comments Register attached.

Please contact me should you have any questions regarding the review of these plans.

Thanks

Environment, Planning & Sustainability Manager

M +

Level 1, 31 Macquarie St, Parramatta NSW 2150

Appendix A4 – City of Parramatta Council

From: @transport.nsw.gov.au Thursday, 18 February 2021 12:31 PM
Sent:
To: FW: PLR SOM CEMP and FFMP consultation with CoPC
Subject:

See response from Council below. You might want to let Rob know to look out for it Thanks,

From: @cityofparramatta.nsw.gov.au]
Sent: Thursday, 18 February 2021 12:27 PM
To: @transport.nsw.gov.au>
Cc: @cityofparramatta.nsw.gov.au>
Subject: RE: PLR SOM CEMP and FFMP consultation with CoPC

Good afternoon

Please be advised that CoP will be endeavour to send the comments through Teambinder this afternoon – apologies for the late response.

Can you please advise Rob Salisbury.

Kind regards

Project Officer - Parramatta Light Rail

City of Parramatta
Level 11, 126 Church Street, Parramatta NSW 2150
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

CITY OF PARRAMATTA

I acknowledge the Traditional Owners of the land I work on, the Darug Peoples, and pay my respects to their Elders past and present.

From: transport.nsw.gov.au> **Sent:** Tuesday, 16 February 2021 4:07 PM
To: @cityofparramatta.nsw.gov.au>
Subject: RE: PLR SOM CEMP and FFMP consultation with CoPC

***[EXTERNAL EMAIL]** Stop and think before opening attachments, clicking on links or responding. ***

Hi ,

Yes, that document is actually one of the two documents that have been sent through to Council 1. CEMP and 2. FFMP (Flora and Fauna Management Plan)for comment on those particular versions (not the earlier versions) There is no record of comments being received by GRCLR for those versions. It would be appreciated if Council can review and let GRCLR know that if they have any comments on these plans.

Thanks,

Project Manager
Parramatta Light Rail
Infrastructure and Place
Transport for NSW

Level 11, 130 George Street, Parramatta NSW 2150

SENSITIVE: NSW GOVERNMENT

From: ityofparramatta.nsw.gov.au] **Sent:** Tuesday, 16 February 2021 3:45 PM
To: @transport.nsw.gov.au> **Subject:** RE: PLR SOM CEMP and FFMP consultation with CoPC

Good afternoon

Just following up in regards to the CEMP – SOM.
Can I confirm that it is for the Plan attached?

Kind regards

Project Officer - Parramatta Light Rail

City of Parramatta
Level 11, 126 Church Street, Parramatta NSW 2150
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

I acknowledge the Traditional Owners of the land I work on, the Darug Peoples, and pay my respects to their Elders past and present.

From: @transport.nsw.gov.au> **Sent:** Thursday, 11 February 2021 5:21 PM
To @cityofparramatta.nsw.gov.au> **Subject:** FW: PLR SOM CEMP and FFMP consultation with CoPC

*****[EXTERNAL EMAIL]** Stop and think before opening attachments, clicking on links or responding. *******

Good afternoon ,

I have had the email below come through to me; and I am following up with you to see if Council's response might have gone astray. Would you be able to let me know if Council has commented/or intends to comment on these GRCLR plans?

Thank you,

From:
Sent: Wednesday, 3 February 2021 10:26 AM
To: @cityofparramatta.nsw.gov.au
Cc: @transport.nsw.gov.au; '@caf.net>; @transport.nsw.gov.au>; @greatrivercity.com.au>
Subject: RE: PLR SOM CEMP Rev 4 - Whole Alignment Update - Consultation Request

Just chasing up on any comments that CoPC might have on the updated CEMP and FFMP covering the full alignment.

These document were sent to you via TeamBinder (see below)at the end of November last year.

Thanks

Environment, Planning & Sustainability Manager

M

Level 1, 31 Macquarie St, Parramatta NSW 2150

From: <system@teambinder.com>
Sent: Friday, 27 November 2020 3:25 PM
To: @greatrivercity.com.au>
Subject: PLR SOM CEMP Rev 4 - Whole Alignment Update - Consultation Request

Document Transmittal

Project Number:	PLRM	**Transmittal No:**	PLRM-GLR-COP-TX-000008
Project Title:	Parramatta Light Rail - Main Works		
Date:	27 November 2020 03:25 PM		
Subject:	PLR SOM CEMP Rev 4 - Whole Alignment Update - Consultation Request		
Reason for Issue:	Issued For Review		

Message:

Dear Anthony,

Great River City Light Rail (GRCLR) has been engaged by Transport for NSW (TfNSW) to design and construct a portion of the Parramatta Light Rail (PLR) Project. GRCLR has prepared a Construction Environmental Management Plan (CEMP – Rev 4) and a Flora and Fauna Management Plan (FFMP – Rev 1) as required under the CSSI Approval (8285) and is required to undertake consultation with the Council of the City of Parramatta (CoPC) on this plan.

GRCLR notes that these documents are revisions of the plans approved by DPIE. They have been revised to extend their coverage from the Stabling and Maintenance Facility (SaMF) site to include the entire GRCLR scope.

GRCLR also notes that CoPC reviewed and commented on previous revisions of these plans and invites CoPC to review and comment on the changes made to the approved CEMP and FFMP. To assist your review, we have included both clean and tracked changes versions of the plans with this letter.

GRCLR requests that if CoPC would like to provide comments on these plans, would you please return these by Friday 18th December 2020.

Please contact the GRCLR Environment, Planning and Sustainability Manager, should you have any questions regarding the review of these plans.

Environment and Sustainability Manager
Parramatta Light Rail Stage 1
Supply, Operate and Maintain

Transmitted to:

Company	Name
City of Parramatta	

Transmitted cc:

Company	Name
Transport for NSW	
Transport for NSW	
Great River City Light Rail Pty Ltd	
Great River City Light Rail Pty Ltd	
Great River City Light Rail Pty Ltd	
Great River City Light Rail Pty Ltd	

Click here to download all Transmittal files.

Click on Document Nos to download them individually.

Item	Document No	Rev	Sts	Title	Alt Doc Number	Design Package No
1	PLR1SOM-GLR-ALL-PM-PLN-000014	04	S2	Construction Environmental Management Plan	PLR-SOM-GLR-PJT-PM-PLN-00014	
2	PLR1SOM-GLR-ALL-PM-PLN-000033	01	S3	Construction Flora and Fauna Management Sub Plan	PLR-SOM-GLR-PJT-PM-PLN-000033	

Transmitted by: Great River City Light Rail Pty Ltd

TeamBinder Transmittal Reference: {5F23EE6A-4318-49FE-AD92-66559EFF8A1E}

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Consider the environment. Please don't print this e-mail unless really necessary.

18 February 2021, 15:42 Reference No.: **PLR-PLR1SOM-COP-GLR-LETTER-000019**

Great River City Light Rail Pty Ltd

Attention:

Project Name Parramatta Light Rail - Main Works
RE: PLR SOM CEMP Rev 4 - Whole Alignment Update -
Consultation Request

I refer below to GRCLR request to review the Construction Environmental Management Plan (CEMP – Rev 4) and a Flora and Fauna Management Plan (FFMP – Rev 1)

Apology for delay. Please find attached CoPC comments pertaining to the CEMP for the FFMP

Regards

Senior Engineering & Project Manager

City of Parramatta
Level 11, 126 Church Street, Parramatta NSW 2150
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

Project Reference No: **PLR-PLR1SOM-COP-GLR-LETTER-000019**

To: (GLR) ,
Cc: (TFNSW) , (GLR) , PLR Document Controller (TFNSW)

City of Parramatta

----- Original Message -----

Document Transmittal

Project Number:	PLRM	**Transmittal No:**	PLRM-GLR-COP-TX-000008
Project Title:	Parramatta Light Rail - Main Works		
Date:	27 November 2020 03:25 PM		

Subject: PLR SOM CEMP Rev 4 - Whole Alignment Update - Consultation Request

Reason for Issue: Issued For Review

Message:

Dear ,

Great River City Light Rail (GRCLR) has been engaged by Transport for NSW (TfNSW) to design and construct a portion of the Parramatta Light Rail (PLR) Project. GRCLR has prepared a Construction Environmental Management Plan (CEMP – Rev 4) and a Flora and Fauna Management Plan (FFMP – Rev 1) as required under the CSSI Approval (8285) and is required to undertake consultation with the Council of the City of Parramatta (CoPC) on this plan.

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GRCLR requests that if CoPC would like to provide comments on these plans, would you please return these by Friday 18th December 2020.

Please contact the GRCLR Environment, Planning and Sustainability Manager, should you have any questions regarding the review of these plans.

Environment and Sustainability Manager
Parramatta Light Rail Stage 1
Supply, Operate and Maintain

Transmitted to:

Company	Name
City of Parramatta	

Transmitted cc:

Company	Name
Transport for NSW	
Transport for NSW	
Great River City Light Rail Pty Ltd	
Great River City Light Rail Pty Ltd	
Great River City Light Rail Pty Ltd	
Great River City Light Rail Pty Ltd	

Click here to download all Transmittal files.

Click on Document Nos to download them individually.

Item	Document No	Rev	Sts	Title	Alt Doc Number	Design Package

						No
1	PLR1SOM-GLR-ALL-PM-PLN-000014	04	S2	Construction Environmental Management Plan	PLR-SOM-GLR-PJT-PM-PLN-00014	
2	PLR1SOM-GLR-ALL-PM-PLN-000033	01	S3	Construction Flora and Fauna Management Sub Plan	PLR-SOM-GLR-PJT-PM-PLN-000033	

Transmitted by: Great River City Light Rail Pty Ltd

Attachments
CoPC Sub-Plan Consultation Comments Template.xlsx (104 KB)

Project	Parramatta Light Rail Stage 1
Contract:	Supply, Operate & Maintain (SOM)
Contractor	**Great River City Light Rail (GRCLR)**
Flora and Fauna Management Plan (FFMP) Rev D	

RESPONSE STATUS LEGEND

O Open

No.	Stage	PACKAGE	Rev	Reviewer Name	Initial Comment Date	Discipline	Organisation	Document Reference	Reviewer Initial Comment	Contractor Response	Initial Response Date	Response Status
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 21 et al.: A technicality: instead of writing "*endangered ecological communities and endangered species*" it should state threatened ecological communities and threatened species as 'endangered' refers to a specific group of threatened entities. [Update throughout the plan].	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 22: "*All native mammals, birds and reptiles encountered during construction are handled by an ecologist in accordance with industry standards*" = lack of details. Provide more details (what is the industry standard?) or refer to relevant doc or section where this has been outlined.	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 22: As above, provide more details or refer to relevant doc or section where this has been outlined in more detail: "*Implementation of weed management measures focusing on monitoring for early identification and management of invasive weeds and pathogens*."	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 23: As above, provide more details or refer to relevant doc or section where this has been outlined in more detail: "*Revegetation / remediation of disturbed areas to be completed within 1 month of completion of works in that area*".	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 24: Biosecurity Regulation 2017 - declared weeds are listed in Schedule 3 [not Schedule 8]. The weeds listed under schedule 3 only list weeds that cannot be import or sold. Reference to the "Greater Sydney Regional Strategic Weed Management Plan 2017 – 2022" document should be made in the plan (particularly reference to Appendix B), to reflect more accurately what weeds are of biosecurity concern locally and need to be managed accordingly.	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 24 – the term 'noxious weeds' is not appropriate anymore since the Noxious Weeds Act has been repealed. It should be replaced with 'biosecurity weeds' or 'environmental weeds' or similar that reflects the current legislation.	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 25: take out "*Australian Standard AS 4970 – 2009 Protection of Trees*" as it is properly cited in the next line "*Australian Standard AS 4970-2009 - Protection of Trees on Development Sites*"	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 34; row E104, dot point "h)" is not clear. Does this relate to maintenance of plantings?	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 40, row BI-7 talks about installing roost and nest boxes. It is understood that all vegetation clearing works have already been completed. However, it is unclear whether roost and nest boxes were installed to mitigate the vegetation loss. In the "How Addressed" column it should be specified how many roost/nest boxes were installed. If boxes were required to be installed, this F&F management plan should specify the box monitoring, box maintenance and/or box replacement procedures (if any) of these boxes or make reference to the document where this is outlined. Presumably any lost natural hollow has a greater longevity to that of nest boxes - how is this addressed?	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 40, row BI-7: Specify in the "How Addressed" column whether the following has occurred "*Important habitat elements (e.g. large woody debris) would be moved from the construction area to locations outside the clearing area in native vegetation remnants or to stockpiles for later use in vegetation/habitat restoration*". In section 6, specify where these habitat elements will be re-used (i.e. in vegetation/habitat restoration).	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 52 et al: "Endangered ecological communities" should be changed to "Threatened ecological communities" as per the explanation above. For example, the Sydney Turpentine Ironbark Forest mentioned on this page is not classified as an Endangered Ecological Community (EEC) but as a Critically Endangered Ecological Community (CEEC).	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 53 – section 4.5 should make reference to the NSW *Fisheries Management Act 1994* rather than the BC Act.	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 56 states: "*Any additional trees to be removed or pruned are to be protected in accordance with AS 4970-2009 - Protection of Trees on Development Sites*." This is not plausible, trees that are removed cannot be protected – re-write.	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Page 58: Incoherent sentence: "*Note that not tree pruning or removal outside the boundary is not proposed and highly unlikely to occur*". I assume this should state: "Note that no tree pruning or removal outside the boundary is proposed and is highly unlikely to occur."?	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Section 6.4 should make reference to "Greater Sydney Regional Strategic Weed Management Plan 2017 – 2022" document. I note that I do not have access to the "Technical Paper 4 Volume 3 of the EIS", perhaps this is covered appropriately in the EIS?	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Section 6.4. It is not clear how weeds are controlled and by whom. This should be outlined (e.g. use of qualified bush-regenerators, use of herbicides? If herbicide use, requirement for appropriate chemical appliance licence required etc.).	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**
		CEMP - Flora and Fauna	Rev 1=		= 18-Feb-2021		COP	PLR1SOM-GLR-ALL-PM-PLN-000033 R	Section 7.5 should include whether any weeds were identified on site and whether they were removed/treated.	Not related to CEMP. Closed for CEMP. To be addressed in A5 Consultation Report for FFMP.	19-Feb-2021	**Closed.**

Appendix A7: Environmental Representative (ER) Endorsement

16 March 2021

Transport for NSW

Attention to: Senior Manager
Environment Parramatta Light Rail
[redacted]

Review of Construction Environmental Management Plan.
Supply, Operate, Maintain (SOM) Package - Parramatta Light Rail
(PLR1SOM-GLR-ALL-PM-PLN-000014 Rev 4.1)

Pursuant to SSI8285 Condition of Approval A23 (d) i), as the approved Environmental Representative, I confirm that I have reviewed the updated Construction Environmental Management Plan, Supply, Operate, Maintain (SOM) Package - Parramatta Light Rail (PLR1SOM-GLR-ALL-PM-PLN-000014 Rev 4.1), dated 22/02/2021, updated by Great River City Light Rail, for consistency with the requirements of the Conditions of Approval.

In my opinion the aforementioned updated document is consistent with the requirements included in or required under the terms of the Conditions of Approval for the Parramatta Light Rail (Stage 1) development.

This management plan has been updated to include the full scope of construction works associated with the SOM package.

Yours sincerely,

[redacted]

[redacted]
phone:

Filename : *AQ1148.05 PLR GLR CEMP Rev4.1 endorsement 210316*

[redacted]