

PARRAMATTA LIGHT RAIL STAGE 1

Supply, Operate and Maintain Contract

Annual Environment Report – 2021

PLR1SOM-GLR-ALL-EN-RPT-000007

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1 Executive Summary

This Annual Environment Report covers the reporting period of 01/01/2021 to 31/12/2021, summarises the four 2021 Quarterly Environmental Reports prepared by Great River City Light Rail Pty Ltd (GRCLR) and provides additional information to meet contractual requirements.

The Parramatta Light Rail (PLR) project is subject to Infrastructure Approval (CSSI-8285) under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

GRCLR is the Supply, Operate and Maintain (SOM) Contractor for Stage 1 of PLR and has contracted the design, construction, testing and commissioning of the SOM scope of works to Construcciones y Auxiliar de Ferrocarriles (CAF) and their sub-contractors.

Key environmental management activities undertaken during 2021 were:

- Stage 1 accreditation of the GRCLR Environmental Management System was completed, with Stage 2 accreditation in progress
- the Environment in Design review process continued with almost all SOM design packages submitted as Approved for Construction (AFC)
- the development of the Operational Noise and Vibration Review (ONVR) document continued
- compliance with the Infrastructure Approval was reported in INX for each quarter and consistency assessments and pre-construction minor works approvals were prepared and/or approved under the Infrastructure Approval
- Environmental Protection Licence (EPL) 21606 was issued by the Environment Protection Authority (EPA) to GRCLR on 14/12/2021
- the CEMP, all sub-plans and the Site Establishment Management Plan (SEMP) were endorsed or approved as required by the Infrastructure Approval
- the site compound at 8 Colquhoun Street, Camellia, was established and GRCLR commenced construction work on the Stabling and Maintenance Facility (SaMF) site
- inspections by the Environmental Representative (ER) and environmental monitoring commenced
- no environmental incidents occurred.

2 Purpose of the Annual Environment Report

The purpose of this Annual Environmental Report is to address the requirements of *Parramatta Light Rail Stage 1 Supply, Operate and Maintain Contract, Exhibit A – Management Requirements, Annexure 13 – Reporting Requirements, Clause 2.1 Annual Environment Reports*.

Under Clause 2.1 (g) this Annual Environment Report must address:

- (i) the relevant reporting requirements under the Project Plans
- (ii) any other reporting requirements identified within the Contract, Management Requirements and Scope and Performance Requirements
- (iii) any other information that TfNSW may reasonably request.

This Annual Environment Report covers the reporting period of 01/01/2021 to 31/12/2021, summarises the four 2021 Quarterly Environmental Reports prepared by Great River City Light Rail Pty Ltd (GRCLR) and provides additional information to meet the above requirements.

3 Statutory Context

Stage 1 of Parramatta Light Rail (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).

Stage 1 of PRL was approved by the Minister for Planning on 29 May 2018, under Section 5.19 of the EP&A Act 1979. An environmental impact statement (EIS) was prepared as part of the infrastructure application (CSSI-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 (CoAs) 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.

4 Project Background

PLR is one of the NSW Government's major infrastructure projects being delivered by Transport for NSW (TfNSW) 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.

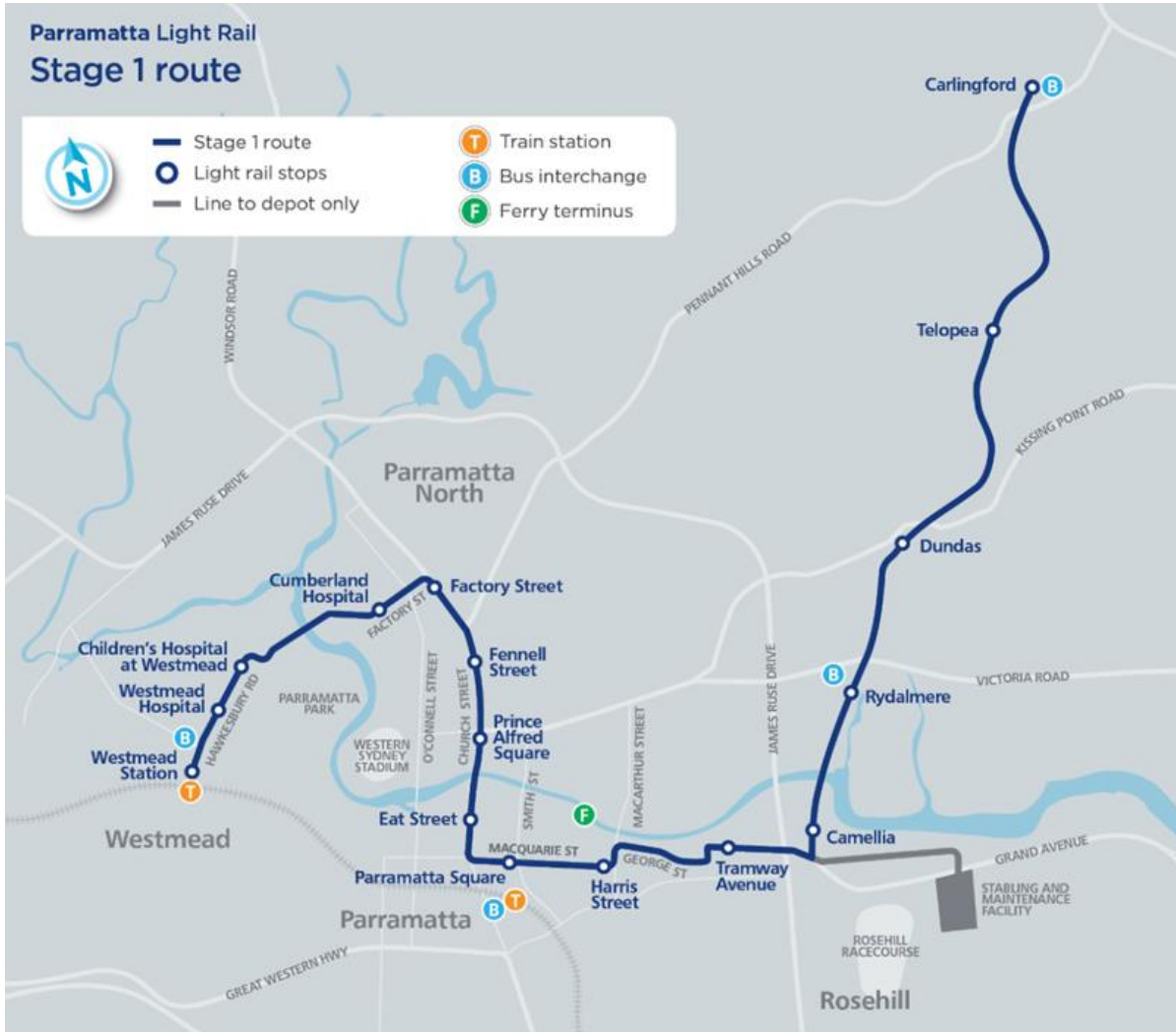
PLR will create new communities, connect great places and help both local residents and visitors move around and explore what the region has to offer. The route will link Parramatta's CBD and train station to a number of key locations, including the Westmead Precinct, the Parramatta North Growth Centre, 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 work 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.

Figure 1 Parramatta Light Rail Route



5 Supply Operate and Maintain (SOM) Scope of Work

TfNSW has divided the project into five packages of work – the SOM scope of work is designated Package 5 and is being delivered by the SOM Contractor.

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

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

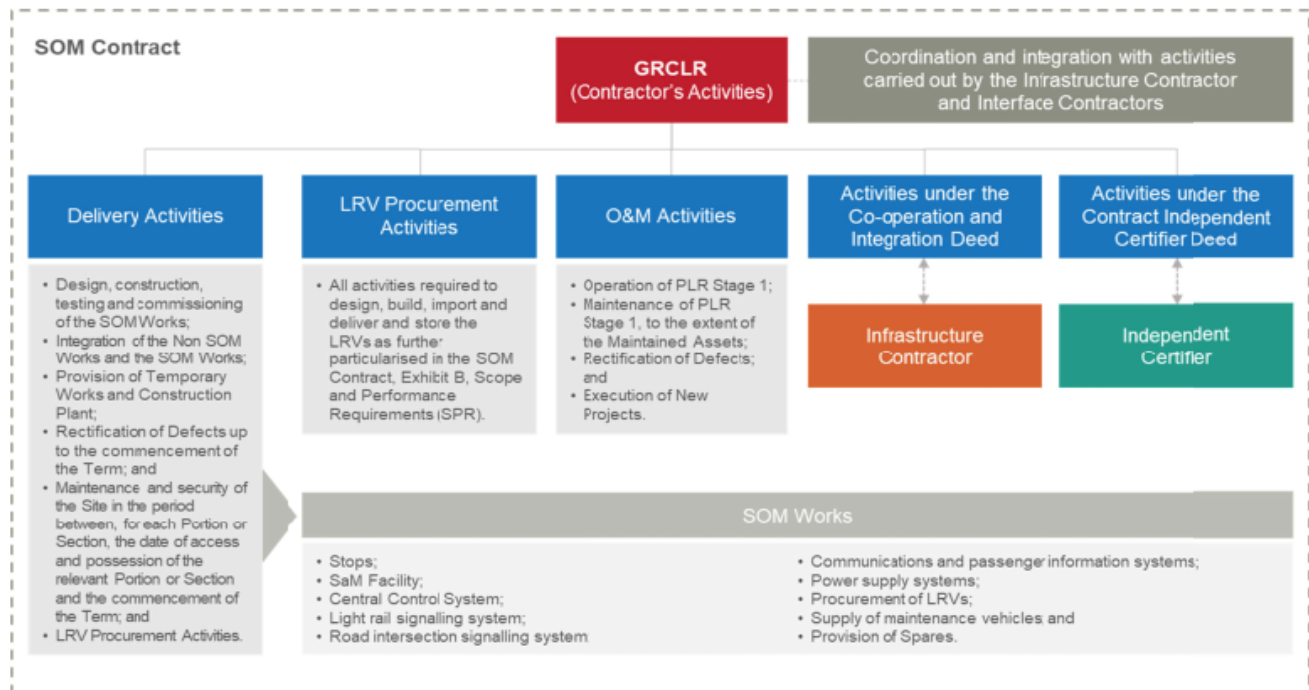
The delivery activities include all investigation, selection, specification, design, approvals, construction, manufacture, installation, testing and commissioning, operational readiness and activities to transition from the delivery phase to the operations phase.

In summary, the SOM package includes the following:

- 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

Figure 2 further details these activities.

Figure 2 SOM Contract Activities for PLR



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 design and construction. The design and construction related scope covers:

- light rail systems
- high-voltage power supply
- stops above slab level
- SaMF.

Design and construction activities include testing and commissioning but exclude all operational and maintenance activities, which remain the responsibility of GRCLR.

6 Environmental Management – 2021

The environmental management activities undertaken by GRCLR during the 2021 reporting period are described below.

6.1 Environmental Management System (EMS)

The GRCLR Environment Management System (EMS) received Stage 1 accreditation under ISO14001 in February 2021. Auditing of implementation for Stage 2 accreditation was undertaken in November 2021. GRCLR was awaiting the audit report and certification at the end of the reporting period.

Appendix A includes a copy of the GRCLR Environment and Sustainability Policy that was reviewed and updated in September 2021.

6.2 Environment in Design

The Environment in Design review process continued with almost all SOM design packages submitted as Approved for Construction (AFC) during the reporting period.

Allocation of environmental requirements into the design was managed through the design review process and development of Environment Design Requirement Review (EDRR) documents, which have been developed and submitted for all design packages.

The development of the Operational Noise and Vibration Review (ONVR) document continued with ongoing correspondence between GRCLR and Parramatta Connect Parramatta Light Rail (PCPLR – the Infrastructure Contractor) on ground borne noise modelling inputs. Consultation with the Department of Planning, Industry and Environment (DPIE) and the City of Parramatta Council (CoP) on the ONVR has been undertaken or commenced, respectively.

Ongoing Review of PCPLR design documentation has been undertaken as required.

Interface meetings have been held with various project stakeholders including the, Design Review Panel (DRP), Aboriginal Focus Group (AFG) and the NSW Heritage Office regarding heritage interpretation and design considerations.

GRCLR provided agreed inputs to several design-related documents and these documents were finalised during 2021:

- Urban Design Review Report
- Heritage Interpretation Implementation Plan
- Pedestrian and Cyclist Network and Facilities Strategy
- Flood Management Design Report.

6.3 Planning and Environmental Approvals

6.3.1 Planning Approvals

GRCLR is delivering the SOM scope of works under Infrastructure Approval (CSSI-8285) as modified.

Detailed compliance reporting addressing GRCLR progress against the requirements of the Conditions of Approval (CoAs), Environment Performance Objectives (EPOs) and Revised Environmental Mitigation Measures (REMMs) is undertaken quarterly in TfNSW's compliance monitoring system (INX).

Consistency assessments (CAs) and pre-construction minor works approvals have been prepared under the Infrastructure Approval during the reporting period as outlined in the following sections.

6.3.1.1 Consistency Assessments (CAs)

During the reporting period, three CAs relating to the SOM scope of works were prepared and/or approved as outlined in Table 1.

Table 1 Consistency Assessments undertaken in 2021

Consistency Assessment	Status
Compound sites (6 Grand Avenue and 8 Colquhoun Street)	CA approved by TfNSW
Height of the administration and maintenance building at SaMF.	Reviewed by GRCLR and CA not considered to be required
Platform height increase at SaMF site	CA approved by TfNSW
Tetra masts	Draft CA reviewed by TfNSW and finalization awaiting development of AFC design

6.3.1.2 Pre-Construction Minor Works Approvals

Prior to the approval of the Construction Environmental Management Plan (CEMP) and sub-plans, GRCLR undertook works under pre-construction minor works approvals (PCMWAs). The PCMWAs prepared by GRCLR and/or approved by TfNSW are listed in Table 2.

Table 2 Pre-Construction Minor Works Approvals during 2021

Pre-Construction Minor Works Approval	Status
GRCLR-PCMWA-003 SaMF Site Establishment	PCMWA approved by TfNSW
GRCLR-PCMWA-004 Geotechnical Investigations	PCMWA approved by TfNSW
GRCLR-PCMWA-005 CCTV and Survey	PCMWA approved by TfNSW
GRCLR-PCMWA-006 Non-Intrusive Works	PCMWA approved by TfNSW
GRCLR-PCMWA-007 Geotechnical Investigations – TPS3	PCMWA approved by TfNSW

6.3.2 Environment Protection Licence

Environmental Protection Licence (EPL) 21606 was issued by the Environment Protection Authority (EPA) to GRCLR on 14/12/2021. Under the *Protection of the Environment Operations Act 1997* (POEO Act), GRCLR is required to prepare and implement a Pollution Incident Response Management Plan (PIRMP). The PIRMP was being drafted at the end of the reporting period.

6.4 Environment in Construction

6.4.1 Construction Environmental Management Plans

During the reporting period, the CEMP, all sub-plans and the Site Establishment Management Plan (SEMP) were endorsed or approved as required by the Infrastructure Approval.

In 2021 Q4, three plans were submitted to the ER for endorsement and were endorsed by the ER:

- Construction Soil and Water Management Plan
- Construction Traffic, Transport and Access Management Plan
- Construction Waste and Resources Management Plan.

6.4.2 Construction Activities

Prior to the handover of the SaMF site from TfNSW to GRCLR in September 2021, the site compound was established at 8 Colquhoun Street, Camellia.

Following handover of the SaMF site and a due diligence investigation by an occupational hygienist, GRCLR commenced construction work on the site. The following construction activities were undertaken during the reporting period:

- Re-establishment of environmental controls (e.g. erosion and sedimentation controls) left by the Remediation Contractor

- Establishment of water management systems on the site
- Establishment of environmental monitoring equipment
- Site validation activities (e.g. survey, contamination and geotechnical testing)
- Establishment of site access from Grand Avenue
- Cut/fill and other earthworks
- Drainage works
- Works on AB Mauri sewer
- Installation of formwork for wheel lathe pit.

GRCLR notes that validation of the remediation works continued to be undertaken at the SaMF site by the Remediation Contractor after the handover of the site.

No portions or sections of the alignment were handed over to GRCLR during 2021. The following activities occurred in readiness for construction along the alignment:

- Survey and geotechnical testing at traction power substation (TPS) and the back-up operations control centre (BOCC) sites
- Construction planning for site compounds
- Defect walks and other inspections with PCPLR.

6.4.3 Inspections and Monitoring

6.4.3.1 Inspections

Six ER inspections were undertaken at the SaMF site during 2021. These inspections were attended by TfNSW and GRCLR representatives. Details of these inspection are provided in Table 3.

Table 3 ER Inspections in 2021

Inspection No.	Date	Issues Identified	Cumulative Issues Identified	Issues Closed	Cumulative Issues Closed
001	06/10/2021	3	3	0	0
002	19/10/2021	1	4	0	0
003	09/11/2021	2	6	3	3
004	23/11/2021	0	6	3	6
005	07/12/2021	2	8	0	6
006	21/12/2021	0	8	1	7

In addition, weekly inspections of the SaMF site and sections of the alignment were undertaken by environmental management professionals from GRCLR and subcontractors.

6.4.3.2 Noise and Vibration Monitoring

No noise and vibration monitoring of construction was undertaken during the reporting period, as there are no sensitive receivers located close to the SaMF site.

6.4.3.3 Soil and Water Monitoring

Testing of soil for contamination was undertaken at the SaMF site during the reporting period. This testing has primarily been undertaken to ensure the health and safety of the construction teams.

Monitoring of volume and quality of water at the SaMF site has been undertaken during the reporting period to meet the requirements of the Long Term Environmental Management Plan for the site. Excessive volumes of groundwater have been measured at one of the capillary break layer (CBL) pits and investigations into the cause of these measurements are ongoing.

Stormwater discharge monitoring was undertaken during the reporting period to ensure captured stormwater met the water quality parameters identified in the project Soil and Water Management Plan prior to discharge offsite. Monitoring data is provided below in Table 4.

Table 4 Stormwater Discharge Monitoring in 2021

Date	Water Source	Discharge to:	Turbidity	pH	Oil & Grease
29/11/2021	SaMF - Tank 1	Stormwater	24.4	8.11	Nil
29/11/2021	SaMF - Tank 2	Stormwater	17.6	7.92	Nil
29/11/2021	SaMF - Tank 3	Stormwater	1.4	7.98	Nil
29/11/2021	SaMF - Tank 4	Stormwater	8.3	7.6	Nil
29/11/2021	SaMF - Tank 5	Stormwater	2.2	7.61	Nil
30/11/2021	SaMF - Northeast Excavation	Stormwater	42.5	8.02	Nil
1/12/2021	SaMF - Tank 2	Stormwater	29.4	7.83	Nil
1/12/2021	SaMF - Tank 3	Stormwater	44.1	7.98	Nil
1/12/2021	SaMF - Tank 4	Stormwater	28.4	7.95	Nil
6/12/2021	SaMF - Northeast Excavation	Stormwater	47.6	8.18	Nil
7/12/2021	SaMF - Northeast Excavation	Stormwater	35.6	8.37	Nil
15/12/2021	SaMF - Northeast Excavation	Stormwater	43.3	7.96	Nil
20/12/2021	SaMF - Northeast Excavation	Stormwater	46.8	8.08	Nil
10/01/2022	SaMF - Northeast Excavation	Stormwater	18.5	8.35	Nil
11/01/2022	SaMF - Northeast Excavation	Stormwater	11.6	8.48	Nil

6.4.3.4 Air Quality Monitoring

Dust monitoring equipment was established for the SaMF site but needed to be replaced following damage by vandals. GRCLR were awaiting results at the time of reporting.

6.5 Environmental Performance

6.5.1 Internal/External Audits

No internal or external audits were completed in the reporting period, apart from the EMS Certification Audits undertaken as described in Section 6.1.

6.5.2 Environmental Incidents

No environmental incidents related to the GRCLR scope of works occurred during the reporting period.

6.5.3 Key Performance Indicators (KPIs)

The *Parramatta Light Rail Stage 1 Supply, Operate and Maintain Contract, Schedule 27 – Performance and Compliance Incentive Payment Scheme* outlines the key result areas (KRAs) and key performance indicators (KPIs) for GRCLR. Table 5 provides the status of the KPIs for the Environment KRA.

Table 5 KPI Status for 2021

Measure	KPI Points	Performance
KPI 1 – Action Close-out rate: Environment inspections and audits		
Environmental inspections and audits (including TfNSW and the Environmental Representative)	0 points at ≤85% of actions closed out within agreed timeframes. Pro rata points of 10 at 100% of actions closed out within agreed timeframes.	87.5% of actions raised during ER inspections closed out within agreed timeframes during 2021.
KPI 2 – Action Close-out rate: Environment incidents and non-compliances		
Environment incidents and non-compliances	0 points at ≤85% of actions closed out within agreed timeframes. Pro rata points of 20 at 100% of actions closed out within agreed timeframes.	No environment incidents and non-compliances occurred during 2021.
KPI 3 – Attendance and pro-active participation rate		
Issue and risk identification, review and minimisation	0 points at ≤85% of attendance and proactive participation. 20 points for 100% attendance and pro-active participation at: <ul style="list-style-type: none"> • Regular meetings with TfNSW representative(s) and/or ER • Environmental Management Coordination meetings • Environmental Reference Group meetings. 	100% attendance and pro-active participation in relevant meetings during 2021.
KPI modifier:		
No payment will be made in respect of the Environmental Management category in respect of any month in which: <ul style="list-style-type: none"> • Any infringement notices or fines are issued • Any prosecutions notified or commenced in respect of environmental breaches • A Stop Work direction is issued in respect of environmental non-compliance. 		During 2021: <ul style="list-style-type: none"> • No infringement notices or fines issued • No prosecutions notified or commenced in respect of environmental breaches • No Stop Work directions issued.

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.


Project Director



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