Construction Environmental Management Plan

Parramatta Light Rail- Stage 1 Enabling works (Package 1)

Diona Ward Joint Venture

PLR-DWJV-PJT-PE-PLN-000001 Rev 10

January 2021

NSW GOVERNMENT

THIS PAGE LEFT BLANK INTENTIONALLY

Version control

Revision	Date	Description	Approval
A	17/08/2018	Draft	
B	02/10/2018	Revised based on TfNSW and ER comments	
C	26/10/2018	Revised based on TfNSW comments	
D	30/10/2018	Revised based on TfNSW comments	
E	14/11/2018	Revised based on TfNSW comments	
0	19/11/2018	Issued for use	
1	22/11/2018	Revised based DPIE request for an “How Addressed” column to be added to the compliance tables.	
2	27/11/2018	Revised based TfNSW comments	
3	12/12/2018	Revised based on DPIE comments on Rev 0 (19/11/2018)	
4	20/12/2018	Revised based on meeting with DPIE (18/12/2018)	
5	10/01/2019	Revised based on TfNSW comments on Rev 4	
6	01/02/2019	Revised based on DPIE comments on Rev 5 (31/1/2019)	
7	22/02/2019	Removal of the SEMP as an appendix	
8	27/11/2019	Revised based on updates to PLR Compliance Tracking Program	
9	28/10/2020	Update to incorporate RTR playing fields reconfiguration	
10	13/01/2021	Update in response to DPIE comments	

Contents

1. Introduction 1

1.1. Context 1

1.2. Background 1

1.2.1. Statutory Context 3

1.2.2. PLR Planning Approval 3

1.3. Purpose of this CEMP 3

1.4. Enabling Works Project description 4

1.5. Timing 6

1.6. Scope of the CEMP 7

2. Planning 38

2.1. Regulatory requirements and legislation 38

2.2. Approvals, permits and licences 38

2.3. Environmental Aspects and Impacts 39

2.4. DWJV Environment Policy 41

2.4.1. DWJV EMS 41

2.4.2. Guidelines and Specifications 41

2.5. Environmental objectives and targets 42

3. Environmental Management Plan Implementation 44

3.1. Environmental Management System Documentation 44

3.1.1. Construction Environmental Management Plan 44

3.1.2. Environmental Management Sub Plans 44

3.1.3. Relationship with other DWJV Management Plans 46

3.1.4. Sustainability Management Plan 47

3.1.5. Environmental Control Maps 48

3.2. Roles and Responsibilities 49

3.2.1. Accountability 49

3.3. Responsibilities and authority 55

3.3.1. Environmental Representative 55

3.3.2. Acoustic Advisor 56

3.3.3. Independent Arborist 57

3.4. Resourcing 57

3.5. Selection and management of sub-contractors 57

3.5.1. Subcontractor Assessment 58

3.5.2. Managing subcontractor service delivery 58
3.5.3. Monitoring Sub-contractors 58
3.5.4. Review of sub-contractor performance 59
4. Communication 60
4.1. Internal Communication 60
4.2. CEMP and Management Sub Plan Consultation 60
4.3. Project Website 61
4.4. Government Authority Reporting 61
4.5. Community liaison and/or notification 61
4.5.1. Complaints Management 62
4.6. Working Outside Approved Construction Hours 62
5. Training and Awareness 63
5.1. Competence, training and awareness 63
5.2. Environmental induction 63
5.3. Toolbox talks, training and awareness 64
5.4. Daily Pre-Start Meetings 65
6. Incidents and Emergencies 66
6.1. Emergency and Incident Planning 66
6.1.1. Hazardous Materials 67
7. Inspections, Monitoring and Auditing 68
7.1. Continuous Improvement 68
7.2. Environmental Inspections 68
7.2.1. Site Inspections 70
7.2.2. Environmental Representative, TfNSW and Independent Certifier Inspections 70
7.2.3. Agency Inspections 70
7.2.4. Sustainability Inspections 70
7.2.5. Independent Arborist Inspections 70
7.2.6. Acoustic Advisor Inspections 70
7.3. Environmental Monitoring 71
7.4. Auditing 72
7.4.1. Internal CEMP audits 72
7.4.2. Independent Environmental Audits 73
7.4.3. Sub-Contractor Audits 73
7.5. Compliance Tracking and Reporting 76
7.5.1. Project reporting 78
7.6. Environmental Non-Conformances 79
7.6.1. Corrective and Preventative Actions 80

7.6.2. Non-Conformance Reports and Close-out 80
8. Review and Improvement 81
8.1. CEMP Review 81
8.1.1. CEMP Modifications 81
8.2. Changes to the Project 82
9. Documentation 83
9.1. Environmental records 83
9.2. Document control 83

Figures

Figure 1-1 PLR Route
Figure 1-2 General extent of the Project
Figure 3-1 Construction Environmental Management Structure
Figure 3-2 DWJV Management structure

Tables

Table 1-1 CoA and CEMP references
Table 1-2 REMM and CEMP references
Table 1-3 EPO and CEMP references
Table 2 1 Approvals, Licenses, Permits and Requirements
Table 2-2 Environmental objectives and targets
Table 3-1 Environmental management sub plans
Table 3-2 Project Roles and Responsibilities
Table 7-1 Environmental inspections
Table 7-2 Summary of monitoring required by the Planning Approval
Table 7-3 Environmental Audit Program
Table 7-4 Compliance reporting
Table 7-5 Project Reporting Requirements

Glossary/Abbreviations

Abbreviation	Expanded text
AA	Acoustic Advisor
ASS	Acid Sulfate Soils
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CEMS	Contractor's Environmental Management System
CSSI	Critical State Significant Infrastructure
Compliance audit	Verification of how implementation is proceeding with respect to a Construction Environmental Management Plan (CEMP) (which incorporates the relevant approval conditions)
CoA	Minister's Conditions of Approval
Minister, the	Minister of the NSW Department of Planning, Industry and Environment (or delegate)
DPIE	Department of Planning, Industry and Environment
DWJV	Diona Ward Joint Venture
ECM	Environmental Control Maps
EIS	Environmental Impact Statement
Ecologically 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)
EPA	NSW Environment Protection Authority
EMS	Environmental Management System
Enabling Works	Parramatta Light Rail – Stage 1, Enabling Works (Package 1)
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment

Abbreviation	Expanded text
Environmental impact	Defined by AS/NZS ISO 14001:2015 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 has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment
EIERP	Environmental Incident and Emergency Response Procedure
Environmental objective	Defined by AS/NZS ISO 14001:2015 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
EPO	Environmental Performance Outcome
Environmental target	Defined by AS/NZS ISO 14001:2015 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 Manager	DWJV Environmental Manager
Environmental Representative (ER)	A suitably qualified and experienced person independent of the Contractor and Proponent, and project design and construction personnel, employed for the duration of construction. The Environmental Representative sits under the Independent Certifier.
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
ER	Environmental Representative
ERA	Environmental Risk Assessment
ESCP	Erosion and Sediment Control Plan
ETS	Electronic Ticketing System
Heritage NSW	NSW Department of Premier and Cabinet (DPC) Heritage
Hold point	Is a verification point that prevents work from commencing prior to approval from Transport for NSW
ISCA	Infrastructure Sustainability Council of Australia
IA	Independent Arborist

Abbreviation	Expanded text
JV	Joint Venture
Non-compliance	Failure to comply with the requirements of the Planning Approval or any applicable licence, permit or legal requirements
Non-conformance	Failure to conform to the requirements of Project system documentation including this CEMP or supporting documentation
OEH	Former Office of Environment and Heritage
PESCP	Progressive Erosion and Sediment Control Plan
Planning Approval	The Planning Approval includes the Conditions of Approval, the EIS and the Submissions and Preferred Infrastructure Report. (SSI 8285)
PLR	Parramatta Light Rail - Stage 1 (Westmead to Carlingford) as described in the Planning Approval SSI8285
Principal, the	Transport for NSW
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Project, the	Parramatta Light Rail – Stage 1, Enabling Works (Package 1)
REMMs	Revised Environmental Mitigation Measures
SaM	Stabling and Maintenance
SEARs	Secretary's Environmental Assessment Requirements
SPIR	Submissions and Preferred Infrastructure Report
TfNSW	Transport for NSW
TTAMP	Traffic, Transport and Access Management Plan

1. Introduction

1.1. Context

This Construction Environmental Management Plan (CEMP) is for the Parramatta Light Rail (PLR) Stage 1, Package 1 Enabling Works (the Project).

The PLR received planning approval on the 29 May 2018 (SSI 8285). This CEMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA) C1 to C8 and the revised environmental management measures (REMM) listed in the *Parramatta Light Rail Stage 1 Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement* (the EIS), as amended by the *Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report)* (February 2018) (the SPIR) and all applicable legislation.

1.2. Background

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

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

Stage 1 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.

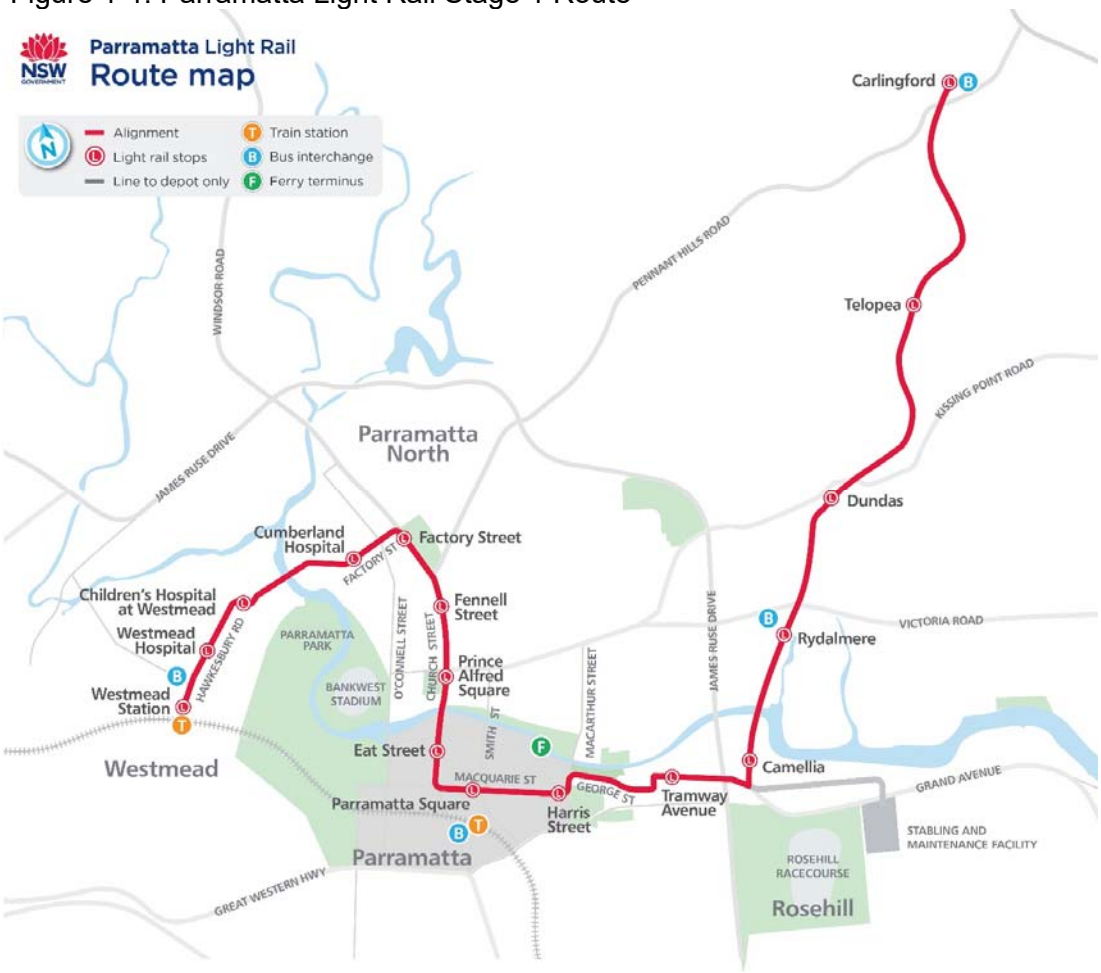
In summary, the key features of the PLR include:

- 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 PLR route is shown in Figure 1-1.

Figure 1-1: Parramatta Light Rail Stage 1 Route



1.2.1. 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 PLR is described below.

The EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) are the primary legislation regulating land use planning and development assessment in NSW. Clause 79 of State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) permits development for the purpose of a railway or rail infrastructure facilities to be carried out by or on behalf of a public authority without consent, provided that the Project is not carried out on land reserved under the NSW National Parks and Wildlife Act 1974 (NPW Act).

As the PLR would be for a light rail and would be carried out by or on behalf of Transport for NSW on land that is not reserved under the *NPW Act*, the Project could, subject to identification of significant impacts, be assessed under Part 5 of the EP&A Act. As such, the PLR was assessed under Part 5.1 of the EP&A Act as Critical State significant infrastructure (CSSI).

1.2.2. PLR Planning Approval

The Environmental Impact Statement (EIS) assessed impacts for the PLR. This covered the light rail and associated works including road enabling work. The EIS was publicly exhibited from Wednesday 23 August to Monday 23 October 2017 (62 days). Following the exhibition period, the Proponent prepared a response to the submissions. A Submissions Report (incorporating Preferred Infrastructure Report) (SPIR) was finalised on the 15 February 2018. The Planning Approval was provided by the Minister for Planning on 29 May 2018 (Infrastructure approval SSI 8285). Further information including copies of the environmental assessment and related approval documents are located at:

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

1.3. Purpose of this CEMP

This CEMP and the associated sub plans have been prepared to describe how the Diona Ward Joint Venture (DWJV), will comply with the environmental requirements, including the NSW Minister for Planning's CoA (SSI 8285) during the construction of Enabling Works portion of the PLR. Additionally, it outlines how DWJV 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.

In accordance with section 3.1 of the *TfNSW Standard Requirements,* the DWJV is required to satisfy all legislation, policies, Authority Approvals, Codes and Standards with respect to the environment management of the Project.

A detailed description of the PLR is provided in section 1.3 of the EIS and a description of the Enabling Works portion is provided in section 1.4 of this CEMP.

Implementing the CEMP and sub plans effectively will ensure that the Project meets the requirements of the following commitments:

- Conditions of Approval
- REMMs
- Environmental Performance Outcomes (EPO)

- A minimum ISCA as-built rating of 55 (to contribute to the overall PLR ISCA rating).

The CEMP has been prepared in accordance with:

- The relevant legislative requirements
- The Deed
- The Planning Approval (including the CoA)
- AS/NZS ISO 14001.

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

- Describe the Project in detail 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 conditions of approval, environmental legislation and TfNSW's environmental requirements as defined by the Project Deed
- Identify the environmental hazards, risks and mitigation measures associated with DWJV'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 DWJV's construction activities that are beyond contractual and compliance requirements
- Meet the requirements of ISO 14001 including the need for continual improvement.

In accordance with CoA C5, the evidence of consultation for each management sub plan is provided in the appendices of each relevant sub plan.

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

1.4. Enabling Works Project description

The Enabling Works portion of the PLR, referred to as the Project, involves the design and construction of specific local road network improvements and adjustments to maintain performance of the local road network during the light rail construction period and during light rail operations. The Project also includes the reconfiguration of the Robin Thomas Reserve playing fields which are required as a result of the PLR alignment occupying in the western extents of the reserve, and to address Revised Environmental Mitigation Measure (REMM) LU-4.

The general extent of the work area is shown in Figure 1-2.

Most of the Project works are being undertaken along roads that do not form part of the Parramatta Light Rail route. As part of the Project, George Street in the Parramatta CBD will become two-way and O'Connell Street will be widened to four lanes as part of the works. Greater traffic capacity will also be provided along Barney Street and O'Connell Street as an alternative to Church Street, to minimise disruption and improve traffic flow.

The scope of the Project includes:

Road modifications and associated works

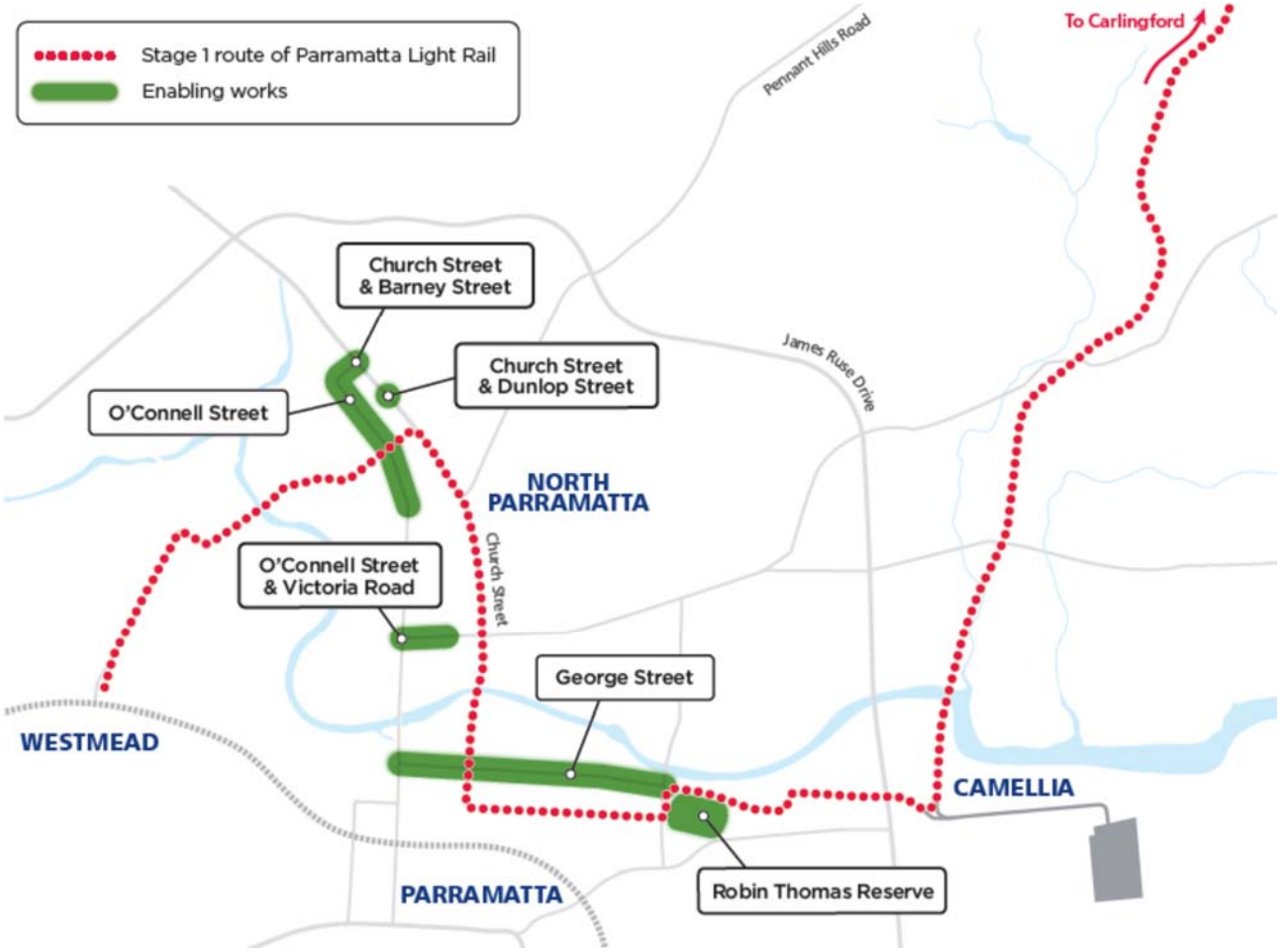
- Establishment of site and installation of safety barriers around the work sites and site compounds associated with the Project
- Property access modifications along the Project alignment, including the relocation of existing facilities
- Demolition of four buildings on Barney Street
- Relocation and protection of major services and utilities
- Establishing ancillary facilities and construction sites
- Carrying out heritage investigations, protection and archival recordings
- Road modification works including kerb realignment, drainage works, line marking and signage
- Tree and vegetation removal and offset planting
- Traffic signal works.

Robin Thomas Reserve playing fields reconfiguration

- Removal and replacement of the existing cricket pitch, goal posts and new line marking
- Installation of two new and relocation of two existing sporting field flood light poles
- Installation of electrical services (using existing trenches where possible)
- New fencing along the northern, western and southern boundary of the playing fields.
- Removal of two trees and landscaping (mass planting along western boundary)
- Installation of new asphalt footpath including three light posts.

Figure 1-2 gives the general extent of the enabling works across the PLR.

Figure 1-2: General extent of the road enabling works footprint



1.5. Timing

The Project is scheduled to commence in early 2019 and continue to mid 2021. The final sequencing and staging would be determined by the various appointed contractor(s). However, an indicative schedule of construction (weather dependent) is provided below. Appendix A4 provides the indicative construction staging and detailed project figures with the location of works of the road works.

1. Establishing ancillary facilities and construction sites (February to March 2019)
2. Establishment of site and installation of safety barriers around the work sites and site compounds associated with the Project (February 2019 to January 2020)
3. Property access modifications along the Project alignment, including the relocation of existing facilities (month to month 2019)
4. Carrying out heritage investigations, protection and archival recordings (February to September 2019)
5. Installation of environment controls (February 2019 to January 2020 and ongoing throughout the project as required)
6. Tree and vegetation removal (February to September 2019)
7. Relocation and protection of major services and utilities (February 2019 to January 2020)
8. Kerb and gutter removal (February to September 2019)

9. Demolition of four buildings on Barney Street (February 2019 to January 2020)
10. Road modification works including kerb realignment, drainage works, line marking and signage (February 2019 to January 2020)
11. Kerb, footpath and gutter installation (March 2019 to January 2020)
12. Pavement replacement – mill, re-sheet and corrective course (March 2019 to January 2020)
13. Line marking and signage (March 2019 to January 2020)
14. Traffic signal works (February 2019 to January 2020)
15. Landscaping and offset planting (April 2019 to January 2020)
16. Reconfiguration of the Robin Thomas Reserve playing fields (November 2020 to mid 2021).

1.6. Scope of the CEMP

This CEMP and sub plans have been prepared to describe how DWJV, will comply with the environmental requirements, including the NSW Minister for Planning's CoA during the construction of the Project. Table 1-1 provides the CoA that are relevant to the CEMP and where and how each is addressed in the CEMP. CoAs that are applicable to a management sub plan are listed and addressed in the relevant Management Sub Plans. The Project Staging Report provides a CoA responsibility and timing matrix.

The CEMP and sub plans have also been prepared to describe how the DWJV, will comply with the EIS, SPIR and the associated REMM and EPO. Table 1-2 provides the relevant REMM from the SPIR and Table 1-3 provides the relevant EPO from the EIS and where and how each is addressed in the CEMP or management sub plans. REMMs and EPO that are applicable to a management subplan are also listed and addressed in the relevant MSP.

Table 1-1 CoA and CEMP references:

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 the Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report) (February 2018) (the SPIR).	CEMP Section 1 Table 1-1 Table 1-2	This CEMP and management sub plans demonstrates 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 management plan with a reference of where and how it is 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: (a) documentation of the engagement with the party(ies) identified in the relevant condition of approval before submitting the document for approval; (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); (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; (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	CEMP Section 4.2 Management Sub Plan Appendices	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 Management Sub Plan Appendices.

	(e) where there are outstanding issues raised by the identified party(ies) that have not been adopted, the reason why they have not been/ could not be adopted must be provided, including evidence of consultation with the relevant party(ies).		
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.	CEMP Section 7.5	A Project wide Compliance Tracking Program (CTP) will be maintained by the DWJV. The CTP will contain all the CoA and satisfies the requirements of CoA A30 to A34. The CTP will be maintained for the duration of the Project (refer to the Staging Report). The CTP will be maintained and updated in the INX System and will be reviewed quarterly.
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.	CEMP Section 7.5	The CTP will be endorsed 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.	CEMP Section 7.5	The CTP will be maintained for the duration of the Project (refer to the Staging Report). The CTP will be maintained and updated in the INX System and will be reviewed quarterly.
A33	The Proponent must make each compliance report publicly available and notify the Department in writing when this has been done.	CEMP Section 4.3 and 7.5	Each compliance report will be available via the PLR project website: www.parramattalightrail.nsw.gov.au

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).	CEMP Section 7.5	The Pre-Construction Compliance Report will be prepared by TfNSW and the DWJV and submitted to the Secretary.
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: (a) a results summary and analysis of environmental monitoring; (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; (c) details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period; (d) a register of any reviews of consistency undertaken including outcome; (e) results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit; (f) a summary of all incidents notified in accordance with Conditions A44 and A46 of this approval; and (g) any other matter relating to compliance with the terms of this approval or as requested by the Secretary.	CEMP Section 7.5	The Construction Compliance Reports will be prepared by TfNSW with input from the DWJV and submitted to the Secretary for information every six months.
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.	CEMP Section 7.4	The Environmental Audit Program is provided within the Compliance Tracking Program (document number: PLR-TFNSW-PJT-PE-PRG-000001) and will be submitted to the Secretary for information no later than one

			month before the commencement of construction. This Environmental Audit Program has been prepared in accordance with *AS/NZS ISO 19011:2014 - Guidelines for Auditing Management Systems*.
A41	The Environmental Audit Program, as submitted to the Secretary, must be implemented for the duration of construction and operation.	CEMP Section 7.4	An Independent Environmental Audit will be undertaken in accordance with the Environmental Audit Program – Construction (PLR-TfNSW-PJT-EE-PRG-000001, Revision 2).
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: (a) assesses the environmental performance of the CSSI, and its effects on the surrounding environment; (b) assesses whether the project is complying with the terms of this approval; and (c) recommends measures or actions to improve the environmental performance of the CSSI.	CEMP Section 7.4	The Independent Environmental Audits will be undertaken by a suitably qualified, experienced and independent auditor with, where required a team of independent technical experts as described in the Environmental Audit Program – Construction, (PLR-TfNSW-PJT-EE-PRG-000001, Revision 2).
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.	CEMP Section 7.4 and 7.5	The Environmental Audit Report will be submitted to the Secretary for information with a response to any recommendations as described in the Environmental Audit Program – Construction, (PLR-TfNSW-PJT-EE-PRG-000001, Revision 2) contained in the audit report within six (6) weeks of audit completion.

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.	CEMP Chapter 6 and Appendix A7	TfNSW hold the primary responsibility for fulfilling the obligations detailed in CoA A44 to A47 with respect to incident notification and reporting to DPIE. The DWJV 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.	CEMP Chapter 6 and Appendix A7	TfNSW will 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. The DWJV 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.	CEMP Chapter 6 and Appendix A7	TfNSW and the DWJV 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.
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.	CEMP Chapter 6 and Appendix A7	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 Plan	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.

C2	The CEMP must provide:		
C2 (a)	A description of activities to be undertaken during construction (including the scheduling of construction)	Section 1.4	This project includes the Enabling Works portion of the PLR and involves the design and construction of specific local road network improvements and adjustments to maintain performance of the local road network during the light rail construction period and during light rail operations.
C2 (b)	Details of environmental policies, guidelines and principles to be followed in the construction of the CSSI;	Chapter 2	This CEMP incorporates applicable environmental legislation, codes of practice, Australian Standards and other guidelines for the Project. DWJV workers (including sub-contractors) must comply with relevant Environmental and WHS legislation, Codes of Practice, Industry Standards and Regulatory Approvals as applicable to their work activities.
C2 (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 2.3 Appendix A2	An Environmental Risk Assessment (ERA) was prepared for the project using the *TfNSW Environmental Risk Assessment Template 3TP-FT-216*. The ERA will be reviewed every three months.
C2 (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 7 Appendix A2	Compliance with the performance outcomes stated in the documents identified in CoA A1 will be achieved by the implementation of a comprehensive monitoring and inspection program. Compliance will also be driven through the Auditing and Management review process where corrective actions and recommendations will provide a closed loop

			into the parent CEMP. Mitigation measures identified in the ERA will be incorporated in the CEMP and management sub plans.
C2 (e)	An inspection program detailing the activities to be inspected and frequency of inspections;	Section 7.2	The Environmental 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.
C2 (f)	A protocol for managing and reporting any: i) incidents; and ii) non-compliances with this approval and with statutory requirements.	Chapter 6 Section 7.6 Appendix A7	In the event of an environmental incident, the Project *Environmental Incident and Emergency Response Procedure* will be implemented. Where an environmental non-conformance is identified, a Non-Conformance and Corrective Action report will be issued in accordance with DWJV's *Managing Corrective and Preventative Actions (W-QU-PR-03)*

C2 (g)	Procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;	Section 7.6.1	The Corrective Action Report will document the agreed actions and timeframes for addressing the environmental non-conformance. If required, works in the affected area are to cease until corrective actions are made and the non-conformance is closed out. Environmental non-conformances of a serious nature are to be closed out immediately.
C2 (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 3.1.2	A list of construction sub-plans for this Project, and their approval requirements, are provided in Table 3-1. The Project Staging Report documents the required Project-wide environmental documentation to be prepared for the Project and the timing of submission where required.
C2 (i)	a description of the roles and environmental responsibilities for relevant employees and their relationship with the ER;	Section 3.2 and 3.3	The key environmental management roles and responsibilities for the construction phase of the Project are described in Table 3-2 and the structure of these roles is shown in Figure 3-2. The Environment Manager is the primary contact with the ER for the Project
C2 (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.

<table>
<tr><td>C2 (k)</td><td>for periodic review and update of the CEMP and all associated plans and programs.</td><td>Chapter 8</td><td>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.</td></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, Sydney Water</td><td>Information</td></tr>
<tr><td>(d)</td><td>Heritage</td><td>Relevant Council(s), OEH</td><td>Approval</td></tr>
<tr><td>(e)</td><td>Flora and Fauna Biodiversity</td><td>Relevant Council(s), OEH</td><td>Information</td></tr>
</table></td><td>Section 3.1.2 and 3.1.3
Appendices B1, B3, B11, B5 and B2</td><td>The CEMP sub plans listed in CoA C3 were prepared in consultation with the relevant government agencies. The records of consultation are provided in the appendices of each sub plan.</td></tr>
</table>

C4	The **CEMP Sub-plans** must state how: **(a)** the environmental performance outcomes identified in the documents listed in **Condition A1** will be achieved**;** (b) the mitigation measures identified in the documents listed in **Condition A1** will be implemented; (c) the relevant terms of this approval will be complied with; and (d) issues requiring management during construction as identified through ongoing environmental risk analysis, will be managed.	Appendices B1, B3, B11, B5 and B2	Compliance with the performance outcomes stated in the documents identified in CoA A1 will be achieved by the implementation of a comprehensive monitoring and inspection program. Compliance will also be driven through the Auditing and Management review process where corrective actions and recommendations will provide a closed loop into the parent CEMP. Mitigation measures identified in the ERA will be incorporated in the CEMP and management sub plans.
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)). 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.**	Management Sub Plan Appendices	The CEMP sub plans were developed in consultation with relevant government agencies listed in CoA C3. Details of all information requested by an agency are provided in the appendices of each sub plan.

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.	CEMP Chapter 2	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.	CEMP Section 3.1.1	The CEMP will be reviewed and endorsed by the ER and submitted to the Secretary for approval no later than one month before the commencement of construction.
C8	Construction must not commence until the **CEMP** and any **CEMP Sub-plan** specified in **Condition C3** have been approved by the Secretary. The **CEMP** and **CEMP Sub-plans**, as 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 approved by the Secretary.	CEMP Chapter 3	Construction will not commence until the Project CEMP and any Project CEMP Sub-plan specified in Condition C3 have been approved by the Secretary.

Table 1-2 REMM and CEMP references

REMM	Requirement	Reference	How addressed
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.	Appendix B4	A Soil and Water Management Sub Plan is included in Appendix B4. The SWMSP includes management measures to manage the risk of sedimentation, littering and chemical pollution.
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. » Emergency and incident response management.	This document Appendices A7, B1 to B8	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. A rigorous program of inspections, environmental monitoring and auditing will be implemented to demonstrate compliance with the commitments made in the EIS, SPIR as well as any other relevant statutory approvals. Construction will not commence until the Project CEMP and any Project CEMP Sub-plan specified in Condition C3 have been approved by the Secretary.

REMM	Requirement	Reference	How addressed
	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 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.	Site Establishment Management Plan	A Site Establishment Management Plan has been prepared to set out details for each of the approved construction compounds, stockpile areas, laydown areas and other ancillary activities required to construct the Project. This plan identifies the environmental mitigation measures to minimise the impact of construction compounds on surrounding land uses and sensitive receivers.

REMM	Requirement	Reference	How addressed
	» 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. • 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:	Appendix A7 Chapter 6	An *Environmental Incident and Emergency Response Procedure* has been prepared for the Project and is included in Appendix A7.

REMM	Requirement	Reference	How addressed
	» 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.		This procedure outlines the process to be followed in the event of an environmental incident or non-compliance, including the following: • Classification of the incident • Emergency response • Notification requirements • Mechanisms for improving environmental controls to reduce the likelihood of a similar incident occurring • Incident reporting and tracking.
GW-4	Hazardous material procedures (including procedures for managing spills and refuelling and maintaining construction vehicles/equipment) would be developed and implemented as part of the CEMP to minimise potential for groundwater quality impacts due to chemical spills.	Appendix A7 Appendix B4 Section 6.1.1	An *Environmental Incident and Emergency Response Procedure* has been prepared for the Project and is included in Appendix A7. This procedure outlines the process to be followed for managing spills and refuelling and maintaining construction vehicles/equipment and to minimise potential for groundwater quality impacts due to chemical spills. The SWMSP provides management measures for the storage of hazardous materials, refuelling/maintenance of construction plant and spill response.

REMM	Requirement	Reference	How addressed
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: » 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.	Appendix B2	A Flora and Fauna Management Sub Plan has been prepared as part of the CEMP and is included in Appendix B2. This FFMSP provides mitigation measures to minimise impacts on flora and fauna from the construction of the Project.

REMM	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.		
BI-9	The potential for translocation of threatened plant species as individuals or as part of a soil translocation process would be considered during the detailed development of the flora and fauna management plan prepared as part of the CEMP.	Appendix B2	A Flora and Fauna Management Sub Plan has been prepared as part of the CEMP and is included in Appendix B2. No threatened plant species have been identified within the Project boundary.
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 Office of Environment and Heritage (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 NSW Unexpected Heritage Finds Guideline (2014) would be implemented.	Appendix B5	A Heritage Management Sub Plan has been prepared as part of the CEMP and is included in Appendix B5. This HMSP provides mitigation measures to minimise impacts on heritage items from the construction of the Project and will be implemented for the duration of the Project.

REMM	Requirement	Reference	How addressed
	» 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-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). » 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.	Appendix B4	A Soil and Water Management Sub Plan has been prepared as part of the CEMP and is included in Appendix B4. This SWMSP provides mitigation measures to minimise impacts on soil and water from the construction of the Project and will be implemented for the duration of the Project and is consistent with the principles and practices detailed in Landcom's (2004) Managing Urban Stormwater: Soils and Construction.

REMM	Requirement	Reference	How addressed
	» 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 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.	Appendix B8	A Waste and Resource Management Sub Plan has been prepared as part of the CEMP and is included in Appendix B8. This WRMSP 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*.

REMM	Requirement	Reference	How addressed
	» 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 is 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). » 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	Section 2.3 Appendices A2 and B4 Section 6.1.1	An Environmental Risk Assessment (ERA) was prepared for the project using the *TfNSW Environmental Risk Assessment Template 3TP-FT-216*. The ERA will be reviewed every three months. The Environmental management measures identified in the ERA have

REMM	Requirement	Reference	How addressed
	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 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.		been incorporated into the CEMP and management sub plans. The SWMSP provides management measures for the storage of hazardous materials, refuelling/maintenance of construction plant and spill response. The ECM provides the location of hazardous material storage and the location of spill kits. Section 6 and the EIERP provides details on emergency and spill response.
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 2.3 Appendices A2	An Environmental Risk Assessment (ERA) was prepared for the project using the *TfNSW Environmental Risk Assessment Template 3TP-FT-216*. The ERA will be reviewed every three months.
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.	Sustainability Management Plan, Section 3.1.4	The management of sustainability requirements associated with the design and delivery of the Project has been addressed in the Sustainability Management Plan. The ERA has addressed climate change risk and the corresponding mitigation measures have been incorporated into the management sub plans.

REMM	Requirement	Reference	How addressed
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. • 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.	Landscape and Temporary Works Plan PLR-DWJV-NPA-LA-PLN-000001 To be prepared as per Staging Plan	The Landscape and Temporary Works Plan will be prepared as per Staging Plan.

REMM	Requirement	Reference	How addressed
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: » 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.	Appendix B7	An Air Quality Management Sub Plan has been prepared as part of the CEMP and is included in Appendix B7. The AQMSP identifies triggers and procedures for dealing with significant dust and air pollution generating activities, with the aim of minimising impacts on surrounding sensitive receivers and the environment.

REMM	Requirement	Reference	How addressed
	» Installation of perimeter screening around areas where there is a potential to generate emissions to air and around long-term compound and stockpile locations. » 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.		

REMM	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).		

Table 1-3: EPO and CEMP references

EPO	Requirement	Reference	How addressed
EPO-TT-1 Construction	The project would implement measures to minimise impacts on the road network, including staging	Appendix B1	This EPO requirement is addressed in the Traffic, Transport and Access management Sub Plan and is included in Appendix B1. The TTAMSP includes management measures to minimise impacts on the road network.
EPO-TT-2 Construction	Pedestrian and cyclist safety would be maintained.	Appendix B1	This EPO requirement is addressed in the TTAMSP and is included in Appendix B1. The TTAMSP includes management measures to maintain pedestrian and cyclist safety.
EPO-TT-3 Construction	Effective coordination would be carried out to minimise cumulative network impacts.	Appendix B1	This EPO requirement is addressed in the TTAMSP and is included in Appendix B1. The TTAMSP includes management measures to minimise cumulative network impacts.
EPO-TT-4 Construction	Access to property would be maintained	Appendix B1	This EPO requirement is addressed in the TTAMSP and is included in Appendix B1. The TTAMSP 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.	Appendix B3	This EPO requirement is addressed in the Noise and Vibration Management Sub Plan and is included in Appendix B3. The NVMSP includes management measures to ensure

EPO	Requirement	Reference	How addressed
			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.	Appendix B3	This EPO requirement is addressed in the Noise and Vibration Management Sub Plan and is included in Appendix B3. The NVMSP 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.	Appendix B5	This EPO requirement is addressed in the Heritage Management Sub Plan and is included in Appendix B5. The HMSP includes management measures to minimise impacts to non-Aboriginal heritage items and archaeology during construction.
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.	Appendix B5	This EPO requirement is addressed in the HMSP and is included in Appendix B5. The HMSP 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.	Appendix B11	This EPO requirement is addressed in the Flood Management Sub Plan and is included in Appendix B11. The FMSP includes management

EPO	Requirement	Reference	How addressed
			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.	Appendix B1	This EPO requirement is addressed in the TTAMSP and is included in Appendix B1. The TTAMSP 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.	Appendix B2	This EPO requirement is addressed in the Flora and Fauna Management Sub Plan and is included in Appendix B2. The FFMSP includes management measures to minimise impacts on biodiversity and implement the Biodiversity Offset Strategy (BOS)
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).	Appendix B4	This EPO requirement is addressed the Soil and Water Management Sub Plan has been prepared as part of the CEMP and is included in Appendix B4. This SWMSP 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*

EPO	Requirement	Reference	How addressed
			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.	Appendix B4 Appendix B9	This EPO requirement is addressed in the SWMSP and contamination Management Sub Plan prepared as part of the CEMP and is included in Appendix B4 and B9. This SWMSP and CMSP provides 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.	Appendix B9	This EPO requirement is addressed in the CMSP prepared as part of the CEMP and is included in Appendix B9. The CMSP 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.	CEMP Section 3.1.4 and 7.2.4	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

EPO	Requirement	Reference	How addressed
			Project has been addressed in the Sustainability Management Plan. This management plan will demonstrate how the relevant commitments in the Sustainability 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 55 are addressed in the PLR Sustainability Strategy and the Project Sustainability Management Plan.
EPO-SU-2	The project would comply with the relevant requirements of the NSW Government Resource Efficiency Policy.	Appendix B8	This EPO requirement is addressed in the Construction Waste and Resource Management Sub Plan prepared as part of the CEMP and is included in Appendix B.

2. Planning

This CEMP incorporates applicable environmental legislation, codes of practice, Australian Standards and other guidelines for the Project. DWJV workers (including sub-contractors) must comply with relevant Environmental and WHS legislation, Codes of Practice, Industry Standards and Regulatory Approvals as applicable to their work activities.

The Environment Manager will identify legislative and other obligation changes for the Project and communicate these changes to the Senior Project Manager. Where changes are identified, a review will be conducted to determine whether an amendment of the CEMP or associated documents is required.

This CEMP will be reviewed by Transport for NSW (TfNSW) and endorsed by the Environmental Representative (ER), and then submitted to the Department of Planning, Industry and Environment (DPIE) for approval.

2.1. Regulatory requirements and legislation

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 Chapter 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.

2.2. Approvals, permits and licences

In addition to the Project Planning Approval, provided to TfNSW from the Minister of Planning on 29 May 2018 the DWJV is required to secure the following permits and licences listed in Table 2.1

Table 2-1: Approvals, Licenses, Permits and Requirements

Regulatory Authority	Approvals/licences required
Department of Planning, Industry and Environment (DPIE)	Project Approval granted under Part 5.19 of the *EP&A Act*. Minister's Conditions of Approval required to be met by TfNSW / DWJV.
Environment Protection Authority (EPA)	Based on schedule 1 of the *POEO Act* the Project is not required to have an Environment Protection Licence

Regulatory Authority	Approvals/licences required
Roads and Maritime Services (RMS)	Section 138 of the *Roads Act 1993* requires that the DWJV obtain the 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 their 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

The following authorisations are not required for approved State Significant Infrastructure and therefore not applicable to this Project:

a) the concurrence under Part 3 of the Coastal Protection Act 1979 of the Minister administering that Part of that Act,

b) a permit under section 201, 205 or 219 of the Fisheries Management Act 1994,

c) an approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977,

d) an Aboriginal heritage impact permit under section 90 of the National Parks and Wildlife Act 1974,

e) 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,

f) a bush fire safety authority under section 100B of the Rural Fires Act 1997,

g) 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.

2.3. Environmental Aspects and Impacts

A risk management approach will be used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance. This process considers potential regulatory and legal risks as well as taking into consideration the concerns of community and other key stakeholders.

The objectives of the risk assessment are:

- Identify activities/aspects, events or outcomes that have the potential to adversely affect the local

- Environment and/or human health/property
- Qualitatively evaluate and categorise each risk item
- Assess whether risk issues can be managed by environmental protection measures
- Qualitatively evaluate residual risk with implementation of measures
- Provide input into the preparation of the CEMP Management Sub Plans.

The Project Environmental Risk Assessment has been prepared based on the following guidelines and procedures:

- AS/NZS 3100:2009, Risk Management Principles and Guidelines (ISO 31000 – Risk Management)
- TfNSW Environmental Risk Assessment Procedure 3TP-PR-206/3.0.

In accordance with REMM HR-5, an Environmental Risk Assessment (ERA) was prepared for the project using the TfNSW *Environmental Risk Assessment Template 3TP-FT-216* and based on a workshop held the 17th August 2018 for the Project. A review was carried out prior to the commencement of the Robin Thomas Reserve playing fields reconfiguration to identify additional specific risks for this scope. The resulting ERA is included as Appendix A2 to this CEMP. In accordance with REMM HR-6, the ERA will be reviewed every three months.

The ERA is a standalone document and the CEMP will not be revised every time the ERA is updated.

This ERA details the environmental aspects identified for the Project, the initial risk category prior to appropriate management strategies, and reference to the appropriate document detailing proposed mitigation strategies. Where relevant, the requirements from the Deed, CoA and REMM will be incorporated into the ERA, particularly in developing the specific site controls and CEMP and Sub Plans.

The environmental risk assessment workshop agenda included:

- Proposed construction staging and scope of works
- Structure of CEMP and related sub plans
- Discussion of key risks associated with each work stage
- Discussion and Assessment of Environmental controls required or methods to reduce risk.

The Workshop was attended by representatives from:

- Transport for NSW (TfNSW)
- Environmental Representative (ER)
- DWJV
- Heritage Consultants
- Noise and Vibration Consultant
- Soil and Water Consultant.

Each CEMP Sub Plan also details risks and proposed mitigation measures for topic specific issues. Ongoing risk assessments will also be performed using the risk assessment process described above during the preparation of an Environmental Control map (ECM). The objective of an ECM is to identify the exact work method and process required for a particular site or task and to assess the potential environmental hazards associated with the activity. The ECM will

incorporate the relevant measures detailed within the CEMP and sub-plans, and where appropriate include additional mitigation and management measures in response to site conditions.

Throughout the CEMP and management sub plans, activities with a high risk or above are referenced. Activities with a high risk or above are identified in the environmental risk assessment.

2.4. DWJV Environment Policy

The DWJV Environmental Policy is consistent with the Diona EMS and the principles of the Ward Civil Environmental Engineering EMS which describe the commitment to continual improvement in environmental performance and compliance with applicable legal requirements.

The environmental policy is included in the CEMP which will be on the Project website, displayed at the site office and communicated to staff and other interested parties via inductions and ongoing awareness programs.

A copy of the DWJV Environmental Policy is provided in Appendix A3.

2.4.1. DWJV EMS

The management systems of both JV partners are accredited to ISO 14001. A separate EMS accreditation will not be sought for this Project.

Delivery of the Project works will be in accordance with this CEMP utilising approved the processes and procedures within the CEMP only.

Where works may be separately apportioned and it is appropriate, multiple versions of specific forms will be assessed and included within the CEMP so that these can concurrently satisfy both the Joint Venture (JV) and individual Partners' requirements.

Where processes within the CEMP do not satisfy the JV partners' external Systems, the JV partner will separately apply their processes parallel to this CEMP.

Processes such as management review and compliance reporting are anticipated to be able to meet the requirement of all Systems.

Documentation used or reports generated as part of the delivery of the Project will be assigned document references in accordance with the TeamBinder naming convention.

2.4.2. Guidelines and Specifications

The main guidelines and specifications relevant to this CEMP include:

- Guideline for the preparation of Environmental Management Plans (DIPNR, 2004).
- 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 Risk Assessment Procedure 3TP-PR-206/3.0TfNSW *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.

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, guidelines, standards and specifications.

2.5. Environmental objectives and targets

As a means of assessing environmental performance during construction of the Project, environmental objectives and targets have been established. These objectives and targets have been developed with consideration of key performance outcomes for each key issue, as specified in the Project CoA, REMM and Environmental Performance Outcome (EPO). The objectives and targets are consistent with the Project environmental policy and will assist in monitoring whether the commitments of the policy are being met.

The performance of the Project will be monitored against the objectives and targets. Project performance monitoring will be documented in the Project construction compliance reports and at least on an annual basis as part of the management review.

The Project overarching objectives and targets are provided in Table 2-2. Environmental objectives and targets for specific aspects of the Project are incorporated into relevant environmental management sub plans.

Table 2-2: Environmental objectives and targets

Objective	Target	Measurement tool
Identify and manage risks to, and impacts on, the environment from Project works	Maintain a risk register, which includes an assessment of environmental risks. Track environmental compliance against relevant requirements.	Risk register, Audits, construction compliance reporting, management review.
Construction of the Project in accordance with Planning Approval.	Full compliance with Planning Approval.	Audits, construction compliance reporting, management review.
Compliance with all legal requirements.	No regulatory infringements (PINs or prosecutions).	No formal regulatory warning. Audits, construction compliance reporting, management review.

Objective	Target	Measurement tool
Implement a rigorous and comprehensive EMS that meets the requirements of AS/NZS ISO 14001.	Address non-conformances and corrective actions within specific timeframes.	Audits, management reviews.
Engage with the affected and broader community, minimise complaints and respond to any complaints within a suitable timeframe.	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.	Review complaints register, construction compliance report, audits.
Continuously improve environmental performance.	Identify repeat issues during environmental inspections. Develop and maintain a program of ongoing environmental training. Capture lessons learnt from environmental incidents to minimise repeat issues. Encourage and reward innovation and effort throughout the workforce.	Construction compliance report, management review.

3. Implementation

3.1. Environmental Management System Documentation

3.1.1. 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 Chapter 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 CEMP has been developed based on the JV partners Environmental Management Systems. The CEMP development structure is displayed in Figure 3-1.

The strategies defined in this CEMP have been developed with consideration of the CoA's and the REMMs presented in the SPIR. This CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the Project on the environment.

This CEMP is consistent with:

- Guideline for the preparation of Environmental Management Plans (DIPNR, 2004).
- 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).

The CEMP and sub-plans required under CoA C1 to C8 will be 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.

The CEMP was originally endorsed by the ER on the 20 November 2018 and was submitted to the Secretary for approval no later than one month before the commencement of construction.

3.1.2. Environmental Management Sub Plans

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. They address requirements of the CoA, REMM and other measures identified in the Planning Approval documentation.

A list of construction sub-plans for this Project, their approval and consultation requirements are provided in Table 3-1. The Project Staging Report documents the required Project-wide environmental documentation to be prepared for the Project and the timing of submission where required.

The establishment of Construction Ancillary Facilities will be done in accordance with CoA C18 and the Site Establishment Management Sub Plan which is a standalone plan and not part of the CEMP.

The management of landscaping and temporary works will be completed in accordance with the Landscape and Temporary Works Management Plan, which has been prepared in accordance with REMM GEN-1 and VL-13.

Table 3-1: Environmental Management Sub Plans

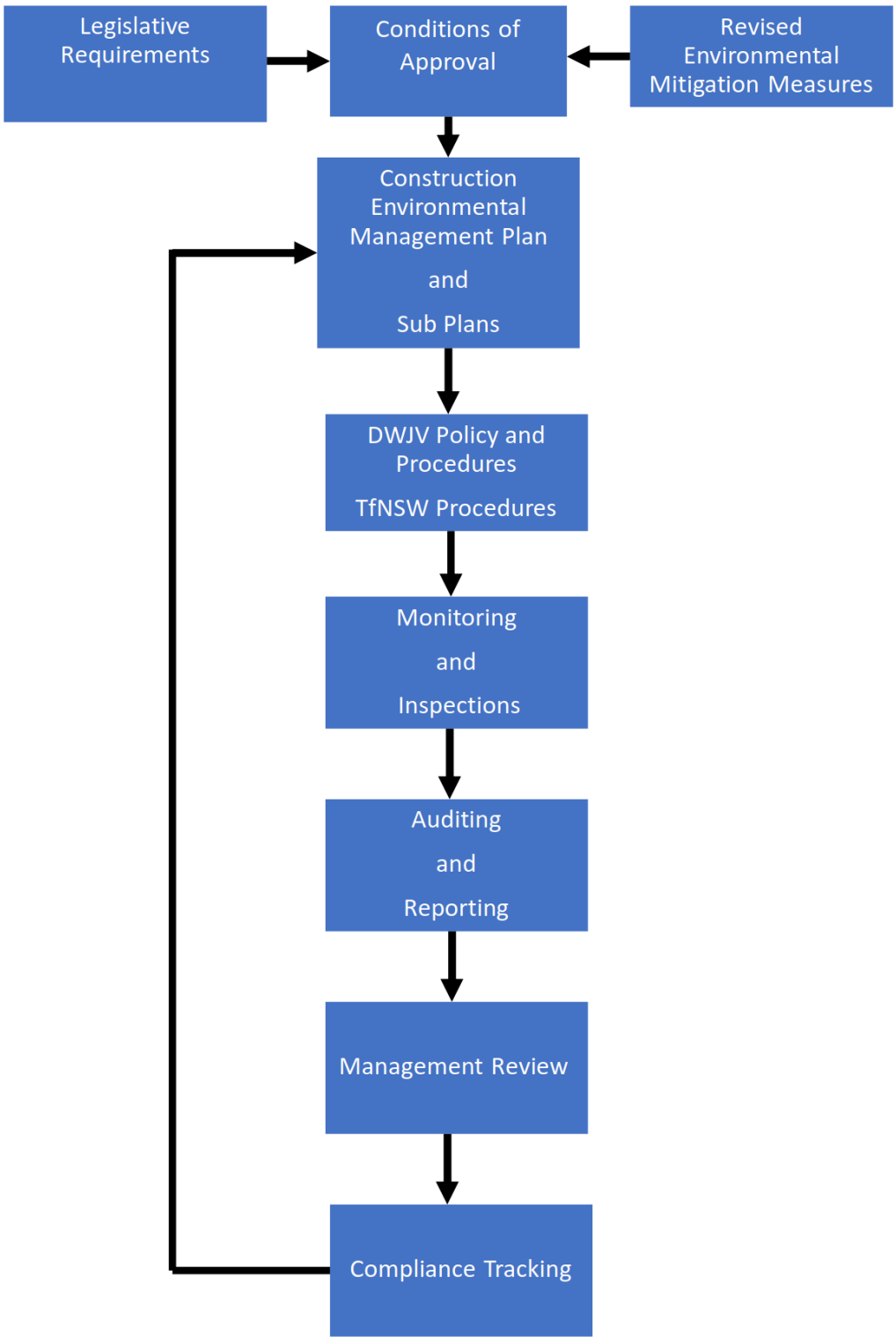
Document name	Document number	CEMP Reference	Approval pathway/ requirement	Consultation Requirements
Environmental Incident and Emergency Response Procedure	PLR-DWJV-NPA-PE-PLN-000006	Appendix A7	REMM GEN-1	
Traffic, Transport and Access Management Sub Plan	PLR-DWJV-PJT-TM-PLN-000001	Appendix B1	CoA C3 (a)	Relevant Council(s), Roads and Maritime Services, Emergency Services
Noise and Vibration Management Sub Plan	PLR-DWJV-PJT-NV-PLN-000001	Appendix B3	CoA C3 (b)	Relevant Council(s), EPA, NSW Health
Flood Management Sub Plan	PLR-DWJV-NPA-PE-PLN-000005	Appendix B11	CoA C3 (c)	Relevant Council(s), DPIE ESS, Sydney Water
Heritage Management Sub Plan	PLR-DWJV-PJT-PE-PLN-000003	Appendix B5	CoA C3 (d)	Relevant Council(s), Heritage NSW
Flora and Fauna Management Sub Plan	PLR-DWJV-NPA-PE-PLN-000001	Appendix B2	CoA C3 (e)	Relevant Council(s), DPIE ESS
Air Quality Management Sub-Plan	PLR-DWJV-NPA-PE-PLN-000002	Appendix B7	REMM GEN-1	
Soil and Water Management Sub Plan	PLR-DWJV-NPA-PE-PLN-000004	Appendix B4	REMM GEN-1	
Construction Waste and Resource Management Sub Plan	PLR-DWJV-NPA-WM-PLN-000001	Appendix B8	REMM GEN-1	

Document name	Document number	CEMP Reference	Approval pathway/ requirement	Consultation Requirements
Contaminated land Management Sub Plan	PLR-DWJV-NPA-PE-PLN-000003	Appendix B9	REMM CM-3	
Landscape and Temporary Works Management Plan	PLR-DWJV-NPA-LA-PLN-000001	NA	REMM VL-13	

3.1.3. Relationship with other DWJV Management Plans

This CEMP forms part of the overall DWJV project management system and sits under the overall Project Management Plan (PMP). The Project Manager has responsibility for implementation of the PMP.

Figure 3-1: Construction Environmental Management Structure



3.1.4. Sustainability Management Plan

TfNSW will prepare the Sustainability Strategy (to comply with CoA E136 and EPO-SU-1) for the PLR including the Project. However, the management of sustainability requirements associated with the design and delivery of the Project has been addressed in the Sustainability Management Plan. Implementation of the Sustainability Management Plan will be managed by the DWJV Sustainability Manager.

This management plan will demonstrate how the relevant commitments in the Sustainability Strategy (CoA 136 and EPO-SU-1) and the TfNSW Standard Requirements 4.1 (a) will be implemented on this Project. Greenhouse gas emissions and climate change are included in the project risk assessment.

The sustainability objectives and requirements described in section 4.3 (e) of the Contract will be implemented during the delivery of the Project. This includes the use of, ecologically sustainable development principles (including any TfNSW sustainability initiatives) in the design and construction of the 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 55 are addressed in the PLR Sustainability Strategy and the Project Sustainability Management Plan.

Table 3-2 outlines the scope and responsibilities of this role.

3.1.5. 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. They also identify key procedures to be used concurrently with the ECMs. ECMs are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.

The ECMs are a live document 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. They will also be more focused when individual construction sites are identified.

The ECMs must meet the requirements of the *Guide to Environmental Control Map (3TP-SD-015/8.0*), to include details of:

- Where environmental controls are located and how they are used
- Where and when environmental monitoring is to occur
- How environmental control measures are communicated to Project personnel.

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 outlined in Section 5.2 and is the responsibility of the 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-conformances are recorded, and corrective actions implemented.

The ECMs will be prepared and maintained by the Environment Manager or delegate with input from specialists as required. The current version of the ECMs are included as Appendix A6. An update to the ECMs will not require the CEMP to be updated as they 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.

3.2. Roles and Responsibilities

The key environmental management roles and responsibilities for the construction phase of the Project are described in Table 3-2 and the structure of these roles is shown in Figure 3-2.

3.2.1. Accountability

The Senior Project Manager, Project Managers and Construction Manager are accountable for:

- Monitoring performance against established targets and objectives
- Monitoring corrective actions to ensure the implementation of continuous improvement and performance of individuals
- Promoting awareness and taking action where environmental performance is inadequate or control instances of poor environmental practices.

The Construction Managers and Site Supervisors will hold workers accountable through active supervision and monitoring of performance. The Site Supervisors and leading hands will be directly accountable for the level of environmental performance in their work areas

Sub-contractors will be accountable for performance in accordance with the approved work method statements and project inductions.

Table 3-2: Project Roles and Responsibilities

Roles	Responsibilities
Senior Project Manager	• Endorse and support the Project Environmental Policy attached in Appendix A3 • Authorised contact person/Contractors Representative for communication with the Principal on environmental matters • Liaise with other government authorities as required • Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this CEMP • Work with the ER and comply with the reporting, review and inspection requirements
Project Managers (Design, Utility, Civil & Interface)	• Plan construction works in a manner that avoids or minimises impact to environment • Be accountable for environmental controls • Be responsible for environmental compliance and performance • Be aware of 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 • Liaise and co-operate with TfNSW and other government authorities as required

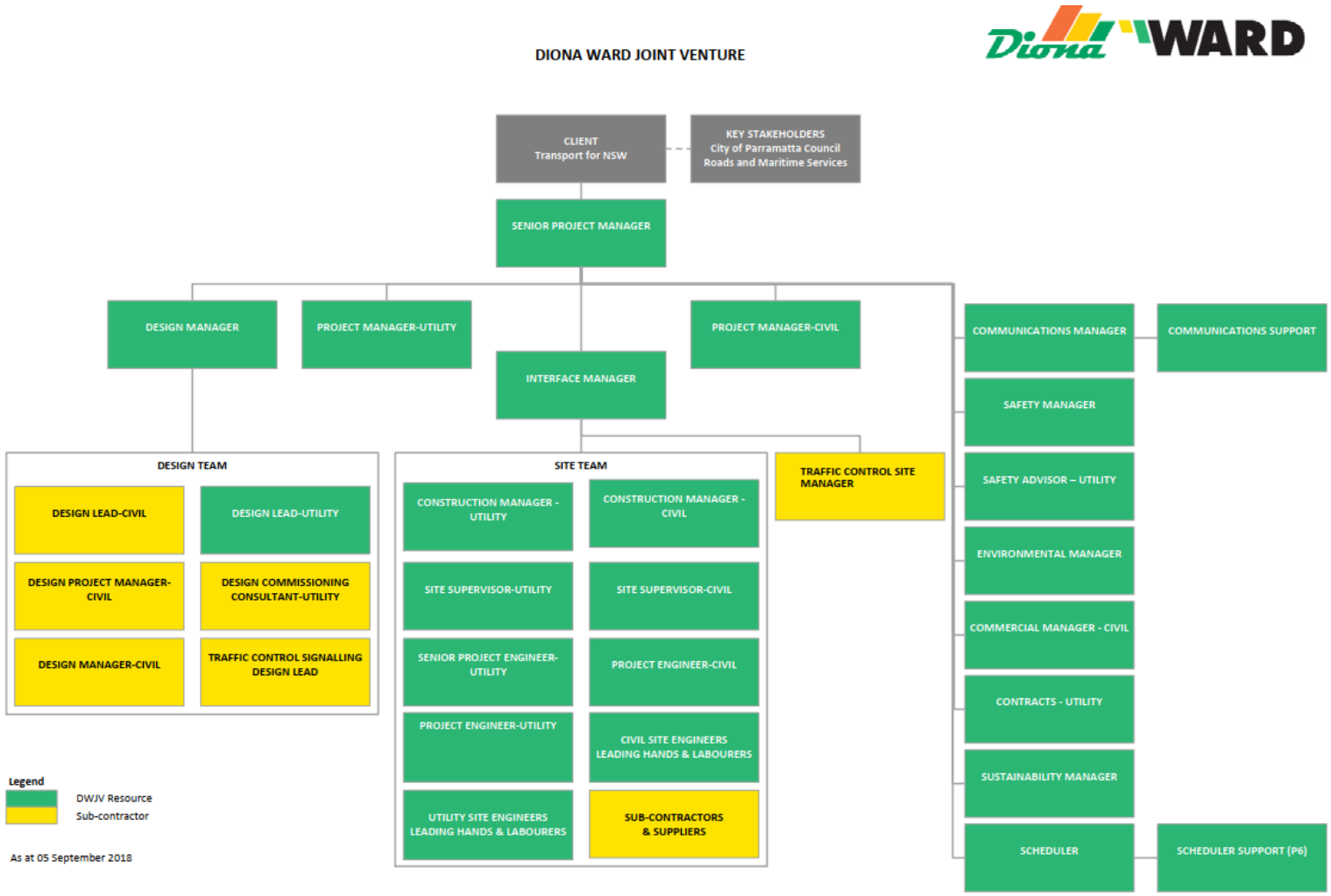
Roles	Responsibilities
	• Be contactable 24hrs to shut down construction work in the event of an emergency • Work with the ER and comply with the reporting, review and inspection requirements.
Communications Manager (and Support)	• Lead the development of strategies and plans relating to community relations • Provide leadership in strategic planning and management of community relations considerations • Prepare community updates, social media posts, website updates, stakeholder emails, letterbox drops, advertisements • Managing the 1800 community information line • Managing the Consultation Manager tracking system (see Appendix 4) • Completing records of all stakeholder and community contact within the Consultation Manager database • Producing community relations training material for project tool boxes and inductions • Hosting community sections in regular tool box meetings • Inducting all personnel in community relations protocols and procedures • Maintaining liaison with TfNSW Senior Communications Liaison Officer • Communicate with the construction team upon receiving complaints and identify potential resolution options • Liaise with the EM to ensure that adequate mitigation measures are in place • Work with the ER and comply with the reporting, review and inspection requirements.
Environmental Manager or Delegate	• Advising on environmental matters and relevant statutory approvals, licences, permits, guidelines and authorisations • Liaison with the TfNSW and with all relevant authorities on environmental matters through regular meetings, phone calls and TeamBinder correspondence • Attend interdisciplinary meetings with commercial, design, construction and communication teams to formulate integrated management strategies • Attend fortnightly (or weekly as required) environmental management coordination meetings with the TfNSW and ER and the Interface Contractors • Attend monthly environmental and sustainably reference group meetings with key stakeholders to discuss and resolve environmental issues • Maintaining a register of all environmental documents for the Contract • Ensuring that the CEMP is established, implemented and maintained in compliance with the CoAs including all Sub-Plans, procedures and supplementary SWMS/ECM and revisions to these documents to remain current with the progress of the Works • Ensure all personnel are aware of their roles and responsibilities in accordance with the CEMP to ensure the CEMP is fully implemented

Roles	Responsibilities
	• Overall responsibility for the establishment, management, monitoring and maintenance of erosion and sediment controls within the Site • Ensure environmental risks of the Project are identified and appropriate mitigation measures implemented • Ensure environmental actions raised by TfNSW or ER are closed out and reported by the project team • Carrying out regular inspections and auditing of the works to ensure that environmental safeguards are being followed • Identifying where the mitigation measures identified in the CEMP and relevant sub-plans are not meeting the targets set, and identifying areas where improvements can be achieved • Facilitating environmental induction and toolbox talks for all site personnel • Prepare, update and implement the ECMs • Maintain and update the CTP in the INX System • Implementing the Construction Monitoring program • Stop activities where there is an actual or immediate risk of harm to the environment or to prevent environmental non-conformances until deficiencies are rectified and advise the Project Manager and the Construction Manager • Notification to the relevant parties of any environmental incidents • Manage environmental incident investigations • Assess any change to the Project scope and activities against approvals and licences • Undertake relevant environmental monitoring, such as noise monitoring • Assist the communications manager with the management and close out of complaints • Be the primary contact for the ER on behalf of the project • Be contactable 24hrs to shut down construction work in the event of an emergency.
Sustainability Manager	• Attend interdisciplinary meetings with commercial, design, construction and communication teams to formulate integrated management strategies • Ensuring that the Sustainability Management Plan is established, implemented and maintained in compliance with the CoAs including all Sub-Plans, procedures and supplementary SWMS/ECM and revisions to these documents to remain current with the progress of the Works • Manage sustainability performance and reporting, including performance tracking against the ISCA IS Rating Tool, TfNSW Sustainable Design Guidelines and any other relevant sustainability rating tools • Provide leadership and technical direction to design, construction, commercial and operational personnel in relation to sustainability issues • Ensure environmental, social and economic risks and opportunities are assessed and addressed • Liaison with TfNSW and with all relevant authorities on sustainability matters through regular meetings, phone calls and TeamBinder correspondence • Maintaining a register of all sustainability documents for the Contract

Roles	Responsibilities
	• Ensure all personnel are aware of their roles and responsibilities in accordance with the Sustainability Management Plan to ensure the plan is fully implemented • Identifying commitments identified in the Sustainability Management Plan are not being met, and identifying areas where improvements can be achieved • Facilitating sustainability toolbox talks for all site personnel • Work with the ER and comply with the reporting, review and inspection requirements.
Construction Managers (Utility & Civil)	• Be aware of their environmental and sustainability responsibilities as detailed in the management plans • Actively ensure that subcontractors and suppliers are complying with environmental requirements • Liaise with TfNSW and other government authorities as required • Work with the ER and comply with the reporting, review and inspection requirements.
Site Supervisors (Utility and Civil)	• Communicate with all personnel and sub-contractors regarding compliance with the CEMP and site-specific environmental issues • Be responsible for checking the site on a regular basis and ensuring that regular maintenance is undertaken to minimise environmental impacts and that personnel are provided with appropriate environmental "toolbox" training • Have a direct role in the compliance with identified environmental procedures and controls • Identify resources required for implementation of the CEMP • Record and action identified environmental non-conformances • Assist with and participate in environmental inspections • Co-ordinate action in emergency situations and allocate required resources • Be contactable 24hrs to shut down construction work in the event of an emergency • Support the Environment Manager or delegate to fulfil ER requests for information or close out actions.
Project Site Engineers (Civil & Utility)	• Provide input into the preparation of the environmental planning documents as required • Ensure that environmental considerations are integral to the decision making for all construction activities • Liaise closely with the Environmental Manager to ensure that the environmental controls and procedures contained in the CEMP and ECMs are implemented • Conduct regular checks of the site to ensure environmental controls such as sediment controls and dust suppression are functioning effectively • Ensure that any work performed by external parties meets with the requirements of the CEMP and Sub-plans, including and documenting the environmental risks of the proposed works

Roles	Responsibilities
	• Ensure that any SHEWMS from external parties have been reviewed with the form W-RC-FM-15 SHEWMS Review Checklist • Identify any environmental risks • Report an activity that resulted, or has the potential to result in an environmental incident immediately to the Site Supervisor and Environment Manager or delegate • Assist in the close out of actions identified in environmental inspections/audits • Support the Environment Manager or delegate to fulfil ER requests for information or close out actions.
All Site Personnel and Subcontractors	• Ensure procedures in the CEMP and associated sub-plans/procedures, permits and approvals are followed in conjunction with the latest drawings issued for construction • Exercise due care, skill and foresight when carrying out tasks • Identify and notify any environmental incidents/non-conformances to the Site Supervisor or Environmental Manager immediately • Ensure and verify that corrective actions have been implemented where required • Support the Environment Manager or delegate to fulfil ER requests for information or close out actions.

Figure 3-2 DWJV Management structure



3.3. Responsibilities and authority

A number of additional roles are required by the Project CoA and the DWJV's commitment to continuous improvement. The DWJV 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.

3.3.1. 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.

The CoA A23 requires the ER to fulfil the following requirements:

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 to 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:

   i) 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

   ii) 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);

e) regularly monitor the implementation of the documents listed in Table 2 of the CoA to ensure implementation is being carried out in accordance with the document and the terms of this approval;

f) 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;

g) as may be requested by the Secretary, assist the Department in the resolution of community complaints;

h) 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

i) 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.

In addition to the conditions set out in the Planning Approval, DWJV 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.

3.3.2. 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.

3.3.3. 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.

3.4. Resourcing

DWJV will ensure that appropriate resources are scheduled including budget allocation to the Project to ensure adequate supply of environmental plant and equipment. The Senior Project Manager, Construction Manager and Environment Manager will establish, implement, maintain and continually improve this CEMP in consultation with stakeholders (where required).

Other DWJV personnel include office administration, accounts, human resources, Safety, transport, workshop and stores will assist and provide support during the Project delivery.

DWJV will ensure appropriate environment control supplies and stocks of plant and equipment, including spill kits, geo-tech socks, sed fence, geo-tech material and absorbent pads are available for the Project when required. There is to be no delay in project performance and the environment is not compromised due to insufficient supplies or unavailability of requested plant and equipment.

3.5. Selection and management of sub-contractors

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.

DWJV 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 ECM, 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 DWJV for works shall undertake works in accordance with:

- Relevant Environmental Legislation, Codes of Practice and Australian Standards
- DWJV's quality, safety and environmental management system policies and procedures
- Submitted ECMs
- The Project CEMP and its Appendices, including the ECMs.

3.5.1. Subcontractor 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 ECMs
- 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.

3.5.2. Managing subcontractor service delivery

Sub-contractors are to submit environmental management documentation e.g. ECMs 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 DWJV, 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 Environment Manager or delegate will review/discuss the relevant ECM with Sub-contractors at their commencement at a new work area.

3.5.3. Monitoring Sub-contractors

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 ECMs implementation.

DWJV 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.

3.5.4. Review of sub-contractor performance

A meeting will be held with the Site Supervisor and DWJV Project 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-conformances or continuous poor performance.

Records of review are to be documented and the information is then to be sent to the DWJV Safety Manager for collation and further reference.

4. Communication

4.1. Internal Communication

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

The Environment Manager or Delegate will meet regularly to discuss any issues with environmental management on-site, any amendments to plans that might be required or any new / changes to construction activities.

Regular 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, environment team members will participate in regular 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 Chapter 5.

4.2. CEMP and Management Sub Plan Consultation

Consultation with stakeholders in relation to this Project is to be undertaken in accordance with CoA 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:

(a) documentation of the engagement with the party(ies) identified in the relevant condition of approval before submitting the document for approval;

(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);

(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;

(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

(e) where there are outstanding issues raised by the identified party(ies) that have not been adopted, the reason 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 is provided in the appendices of each relevant management sub plan.

4.3. Project Website

In accordance with CoA A33 and B11, the CEMP and any other reports or monitoring data will be available via the PLR project website: www.parramattalightrail.nsw.gov.au.

The following information and documents relevant to the Project will be available on the website:

- Compliance reports (CoA A33)
- a copy of any statutory approval, licence or permit required and obtained in relation to the Project
- a current copy of each approved document required under the terms of the CoA and any endorsements, approvals or requirements from the ER, AA and Secretary.

4.4. Government Authority Reporting

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

The Environmental 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 to any environmental incidents or non-conformances
- 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.

DWJV Personnel will not contact the EPA unless expressly authorised to do so by TfNSW. TfNSW will retain the responsibility for notification and other communications with the EPA.

If the Project is visited by EPA, 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.

4.5. Community liaison and/or notification

The DWJV Community Engagement Plan provides an overview of stakeholder communication and liaison. Generally, it covers the following aspects:

- Procedures, processes and strategies for the management of community liaison
- issues and dealing with stakeholders
- Community liaison reporting and process
- Development and implementation of community and consultation tools
- Community and stakeholder consultation, procedures and processes
- Timeframes for undertaking this consultation
- Processes for the management of enquiries and complaints
- Processes for crisis management.

This plan must be in accordance with the TfNSW Community Communication Strategy (CCS).

4.5.1. Complaints Management

The DWJV Community Engagement Plan defines the policies, protocols, procedures and processes for identifying and managing community specific issues arising from design and construction activities, including complaints relating to environmental issues. It has been prepared in accordance with the Complaints Management System prepared by TfNSW (CoA B6).

In accordance with CoA B9, the DWJV will maintain a Complaints Register 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.

The Environment Manager will assist the Communications Manager in responding to environmental complaints and maintaining a register of Environmental Complaints via the Consultation Manager for reporting to TfNSW.

In accordance with CoA A24 (a) the complaints register will be provided 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.

4.6. Working Outside Approved Construction Hours

The Noise and Vibration Management Sub Plan (NVMSP), included in Appendix B2 to this CEMP details the protocols and assessment requirements for working outside the approved construction hours specified in CoA E21 and E22.

The Out of Hours Work (OOHW) Protocol is provided in Appendix B of the NVMSP and has been prepared in accordance with CoA E25 (d) and (e). The Environment Manager of delegate will be responsible for the preparation of any OOHW applications and will include input from specialists when required.

5. Training and Awareness

5.1. 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 construction Environmental Manager will coordinate the environmental training in conjunction with other training and development activities (e.g. safety).

5.2. 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 REMMs.

Short-term visitors to site undertaking inspections / entering the site (such as regulators) will be required to undertake a visitors induction and be accompanied by inducted personnel at all times. Temporary visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times.

The construction Environmental 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:

- 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 CoA, REMM and EPO
- Potential environmental emergencies on site and the emergency response procedures
- Reporting and notification requirements for pollution and other environmental incidents
- Standard mitigation measures
- High risk activities and associated environmental safeguards
- Working in or near environmentally sensitive areas
- The ECM(s), their purpose, scope and use
- Role specific environmental management requirements and responsibilities
- Reduce 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. The construction Environmental Manager may authorise amendments to the induction at any time. Possible reasons for changes to the induction may be Project modifications, legislative changes or amendments to this CEMP or related documentation.

An Induction Register is kept at the project site office and is maintained by the Project Safety Manager.

5.3. 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.

Relevant environmental issues include (but are not limited to):

- The scope and requirements of the specific Site Environment Plans and ECMs
- Emergency and spill response
- Noise and vibration goals and specific mitigation measures
- Aboriginal and non-Aboriginal Heritage management
- Traffic/access, location of entry/exit points, traffic routes, parking
- Soil and water issues and controls and dewatering and discharge requirements
- Air quality and dust issues and management
- Waste management
- Contamination issues and management
- Sensitive environmental areas and site specific issues such as no-go areas e.g. heritage areas
- Threatened flora and fauna species as identified by the Flora and Fauna Management plan
- Incidents and lessons learnt
- Sensitive receivers such as the local community and appropriate mitigation measures
- Energy efficient practises
- Waste management and recycling.

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 is mandatory and attendees of toolbox talks are required to sign an attendance form and the records maintained.

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 Register is kept at the Project site and is maintained by the Project Safety Manager.

Another way to inform construction personnel will be through the development and distribution of awareness notes. These will typically take the form of a poster, booklet, or similar and will be

distributed to engineers, leading hands, foreman and others with a responsibility for managing specific work locations or activities. This documentation will be used to inform the broader workforce through either daily pre-starts meeting (see section 5.4) or provision in worker crib sheds / break facilities.

5.4. 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 (or shift) or where changes occur 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 determined by relevant site supervisor and environmental personnel and will include any environmental issues that could potentially be impacted by, or impact on, the day's activities. All attendees 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 is maintained by the Project Safety Manager.

6. Incidents and Emergencies

6.1. Emergency and Incident Planning

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

In the event of an environmental incident, the Project *Environmental Incident and Emergency Response Procedure* will be implemented. The full procedure is provided in Appendix A7.

Potential events on the Project that will require the implementation of the Project *Environmental Incident and Emergency Response Procedure* include, but are not limited to:

- Spills of fuels, oils, chemicals and other hazardous materials
- Unauthorised discharge from containment devices
- Unauthorised clearing or clearing beyond the extent of the Project boundary or premises
- Inadequate installation and subsequent failure of temporary erosion and sediment controls
- Unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat
- Unauthorised harm or desecration to Aboriginal objects and Aboriginal places
- Unauthorised damage or destruction to any State or locally significant relic or Heritage item
- Potential contamination of waterways or land
- Accidental starting of a fire or a fire breaking out of containment
- Any potential breach of legislation, including a potential breach of a condition of an CoA; or any agency permit condition
- Works undertaken without appropriate approval or assessment under the EP&A Act 1979
- Unauthorised dumping of waste.

All environmental incidents, reportable events and regulatory action would be reported to TfNSW as outlined in the TfNSW *Environmental Incident Classification and Reporting 9TP-PR-105*. Incidents will be reported in accordance with clause 2.8 of *TfNSW Standard Requirements*.

Where environmental non-compliance or incidents arise during the Project, they will be classified and reported in accordance with the TfNSW *Guide to Environmental Incident and Non-compliance Reporting using the INX System 9TP-SD-005.*

TfNSW hold the primary responsibility for fulfilling the obligations detailed in CoA A44 to A47 with respect to incident notification and reporting to DPIE. The DWJV will assist and cooperate with TfNSW to fulfil these obligations.

All efforts will be undertaken immediately to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident and reduce the likelihood of a similar incident reoccurring.

The Senior Project Manager, Construction Manager and the Environmental Manager are 24-hour contacts. They have the authority to halt the progress of the works if necessary. They are the key emergency response personnel during an environmental site emergency or incident.

The DWJV Environment Manager or delegate will maintain all records relating to environmental incidents and regulatory action and provide them to TfNSW as soon as practicable.

6.1.1. Hazardous Materials

An *Environmental Incident and Emergency Response Procedure* has been prepared for the Project and is included in Appendix A7.

This procedure outlines the process to be followed for managing spills and refuelling and maintaining construction vehicles/equipment and to minimise potential for groundwater quality impacts due to chemical spills.

The SWMSP included in Appendix B4 provides management measures for the storage of hazardous materials, refuelling/maintenance of construction plant and spill response. These management measures include:

- 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. Where possible these will not be located within 50m of a water way
- Hazardous Materials will not be stored below the 10 per cent AEP 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 spills and leaks would be reported to site managers and actions would be immediately taken to remedy spills and leaks
- Hazardous materials 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.

7. 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.

7.1. Continuous Improvement

Opportunities and methods for continual improvement will be promoted through the processes of monitoring and inspections and ongoing communications between the environmental team and construction personnel.

More formal continuous improvement will be driven through the Auditing and Management review process where corrective actions and recommendations will provide a closed loop into the parent CEMP.

7.2. Environmental Inspections

The Environmental 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.

The environmental inspection checklist 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 environmental areas. It will be updated regularly based on the progress of the Project and the outcomes of the quarterly Risk Assessment review. The initial environmental inspection checklist is provided in Appendix A8.

The environmental inspections will cover high risk activities and processes, works in environmentally sensitive areas and site preparedness for adverse weather conditions. The Environment Manager or delegate will record inspection findings on an inspection checklist form (Appendix A8). Actions from the inspection will then be issued to the relevant Foreman for actioning. Actions will be assigned an implementation priority in a collaborative way based on environmental risk.

If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded on an environmental action list. The environmental action list will then be issued to the relevant Foreman for actioning. Actions will be assigned an implementation priority by the Environmental Team based on environmental risk.

Environmental inspections will be undertaken regularly throughout delivery of the Project and where safe and feasible the inspections will be scheduled whilst work is occurring. Table 7-1 details the various inspections which will occur, their frequency and who within DWJV will attend or arrange.

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.

Additional inspections that will be undertaken are described in the following sections.

Where relevant, members of the wider Project team will participate in environmental inspections.

Regular inspections may be undertaken by an engaged specialist soil conservationist/expert in erosion and sediment control.

Table 7-1 – 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	Environmental Manager or site environmental delegate
Environmental Representative/ TfNSW Representative inspection	Visual	Weekly or determined by the nature of activities being undertaken and their associated environmental risks	Environment Manager to accompany third party
EPA or stakeholder inspection	Visual	As requested	Environment Manager / Project Director to accompany third party
Noise and vibration inspection	Visual	As required	Acoustic Advisor Environment Manager to accompany third party
Tree inspection	Visual	As required	Independent Arborist Environment Manager to accompany third party
Sustainability inspection	Visual	Weekly	Sustainability Manager

7.2.1. Site Inspections

Site Supervisors will complete a visual inspection of works each day. The inspection will identify any potential or actual environmental impacts associated with construction activities and inform housekeeping requirements. Any potential environmental hazards or risks identified during the inspection will be reviewed by the EM or their delegate and included in the environment action register as appropriate.

7.2.2. Environmental Representative, TfNSW and Independent Certifier Inspections

The Environmental Representative (ER) will complete regular site inspections to review environmental aspects. The ER will report on areas visited, performance of mitigation / controls and any issues and actions for improvement. Close-out of actions will be tracked.

The Independent Certifier (IC) and TfNSW will complete site inspections as required. The frequency of site inspections will be determined by the nature of activities being undertaken and their associated environmental risks.

The Environment Manager or delegate will accompany the ER, TfNSW Representatives and Independent Certifier on all inspections. If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded on an environmental action list. The environmental action list will then be issued to the relevant Foreman for actioning. Actions will be assigned an implementation priority in a collaborative way by the inspection team based on environmental risk.

Actions arising from the inspections will be recorded on the actions register. Each action will be agreed at the end of the inspection and allocated to the appropriate member of the Project team for close-out.

7.2.3. Agency Inspections

If an inspection by a representative of Regulatory Authority or Agency is requested, DWJV will notify TfNSW of the request. DWJV will provide access to any work area and facilitate the inspection. The Environment Manager will accompany any regulatory representative during the inspection. Other relevant site staff or team members will be made available if required.

Outcomes from the inspection will be documented and communicated to TfNSW.

7.2.4. Sustainability Inspections

The Project is committed to meeting an ISCA Rating of 55 and implementing the Sustainability Management Plan during construction. Sustainability inspections will be conducted by the Sustainability Manager to ensure that sustainability objectives and commitments outlined the Sustainability Management Plan are carried out.

7.2.5. Independent Arborist Inspections

The Project Independent Arborist will carry out inspections to provide advice in relation to the assessment and management of the Project impact on trees. It is the aim of the DWJV to retain as many trees as possible.

7.2.6. Acoustic Advisor Inspections

The Project AA will carry out inspection to consider and recommend improvements that may be made to work practices to avoid or minimise adverse noise and vibration impacts. The AA may also be consulted during high risk noise and vibration works, including out of hours works to provide advice on mitigation measures to reduce impacts and meet the Project criteria.

7.3. Environmental Monitoring

Environmental monitoring will be undertaken for the duration of the Project in accordance with CoA C9. Table 7-2 provides the general environmental monitoring that will occur during the construction of the Project. Further details of monitoring for each environmental element (air quality, noise, water quality etc.) are detailed in the individual sub plans and reflected, as required, in method statements.

Monitoring will be undertaken to validate the impacts predicted for the Project, to measure the effectiveness of environmental controls and implementation of this CEMP, and to address Planning Approval requirements. The monitoring requirements for required aspects are included in the relevant environmental management sub plans and summarised in Table 7-2 below.

Where a non-conformance is detected or monitoring results are outside of the expected range and are directly attributable to the Project (i.e. are influenced by factors under the direct control of the Project, for example noise from construction equipment), a non-conformance, Environmental Incident Report and/or Environmental Improvement Notice may be issued by the Environmental Manager in response to the non-conformance problem if it is found to be construction related.

Should monitored levels be in exceedance of the levels listed in the CEMP, Management Sub Plans, CoA, SPIR or EIS a non-conformance will be raised.

All environmental monitoring equipment shall be maintained and calibrated according to manufacturer's specifications and appropriate records kept.

Table 7-2: Summary of monitoring required by the Planning Approval

CoA / REMM	Description	Relevant Sub-Plan or CEMP Chapter	Reporting Requirements	Consultation Requirements
CoA C9 (a)	Water Quality (Turbidity) Monitoring	Soil and Water Management Sub Plan	Reporting requirements are outlined in C10	DoI Water, EPA, Relevant Council(s)
CoA C9 (b)	Noise and Vibration Monitoring	Noise and Vibration Management Sub Plan	Reporting requirements are outlined in C10	Relevant Council(s), EPA, NSW Health (as relevant)
CoA C9 (c)	Grey-headed flying fox Monitoring	Flora and Fauna Management Sub Plan	Reporting requirements are outlined in C10	DPIE EES
TfNSW SPIR CL7.5-7.6	Property Condition Monitoring	Noise and Vibration Management Sub Plan	Post construction condition survey report outlined in SPIR 7.6	NA

In accordance with CoA C10, each Construction Monitoring Program must include the following:

j) details of baseline data available;

k) details of baseline data to be obtained and when;

l) details of all monitoring of the Project to be undertaken;

m) the parameters of the Project to be monitored;

n) the frequency of monitoring to be undertaken;

o) the location of monitoring;

p) the reporting of monitoring results against relevant criteria;

q) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and

r) any consultation to be undertaken in relation to the monitoring programs.

The Construction Monitoring Programs must be endorsed by the ER and submitted to the Secretary for information at least one month before the commencement of construction.

The DWJV is not proposing to implement a Water Quality (Turbidity) Monitoring program, in accordance with CoA C15, this can be endorsed by the ER. Further details on the justification for this are included in the Soil and Water Management Sub Plan.

7.4. Auditing

Audits will be completed at regular intervals in accordance with all Project environmental obligations, including the Deed, REMMs and CoAs. Audits will be undertaken in accordance with CoA A40 and A41. An Environment Audit Program will be created to manage verification of environmental performance and identify opportunities for improvement in accordance ISO 14001 and ISO 9001. The Environmental Audit Scope and Schedule is provided in Table 7-3.

The Environmental Audit Program (document number PLR-TFNSW-PJT-EE-PRG-000001) will be implemented by TfNSW in which DWJV will provide input as required for the duration of the construction of the Project. In accordance with the Staging Report, TfNSW or their delegate will continue to implement the Environmental Audit Program for the duration of construction and operation of the PLR project.

7.4.1. Internal CEMP audits

Internal auditing will be undertaken generally on a six monthly basis throughout the Project. The purpose of auditing is to verify compliance with:

- This CEMP and Sub Plans
- Planning Approval requirements (CoAs, REMM)
- Any relevant legal and other requirements (e.g. licenses, permits, regulations, Transport for NSW contract documentation).

The internal audit scope will focus on activities of high environmental risk as identified in the environmental risk assessment (revised quarterly) and the associated sub plans. An audit checklist will be developed and amended as necessary to reflect changes to this CEMP, subsequent approvals and changes to Acts, regulations or guidelines. The findings of the Internal Audits will be used to update the CTP. It is envisaged that the works will go for 18 months. This equates to three six monthly internal audits. Though, the internal audit scope will focus on high risk activities, during

the course of the Project, medium to low environmental risk activities (as identified in the ERA) and their associated sub plans will be audited at least once.

7.4.2. Independent Environmental Audits

An independent environmental audit will be conducted within the first 12 months of construction and annually for the duration of the construction program in accordance with the TfNSW Environmental Audit Program – Construction (document number: PLR-TFNSW-PJT-EE-PRG-000001). The audit will be implemented by TfNSW in which DWJV will provide input.

The Independent Environmental Audit scope will include:

- Assessment in compliance with:
  - Conditions of approval
  - Post approval documents required under the CoA (including environmental mitigation measures and recommendations provided in environmental management plans)
  - All licences and approvals applicable to the development (except EPLs)
- Assessment of environmental performance against relevant environmental project criteria and its effects on the surrounding environment
- A review of the records substantiating all activities associated with, or relevant to, the conditions of approval, including measures taken to implement all management plans required by the planning approval
- Recommendations for measures or actions to improve the environmental performance of the Project and improvements to any document required under the planning approval
- Status of previous audit finding
- High level review of environmental management systems, plans and sub-plans
- Including a review of the adequacy of the post approval documents
- Any other matters that the Auditor considers relevant.

The results of the routine environmental audits for each stage will be documented by the Auditor in an Environmental Audit Report. TfNSW will submit a copy of each Environmental Audit Report to the Secretary with a response to any recommendations contained in the Environmental Audit Report within six weeks of the completion of the audit, or within another timeframe agreed with the Secretary.

7.4.3. Sub-Contractor Audits

Where they are required by risk assessment, sub-contractor will be audited as determined by the Environment Manager using a risk based approach and/or in response to repeat incidents. At least two formal audits will be carried out per year.

The Environment Manager may initiate audits at a greater frequency. Sub-contractor audits will be undertaken by the Environment Manager or delegate.

Table 7-3: Environmental Audit Scope and Schedule

No.	Audit	Scope	Timing	Responsibility	Recipient
1	Internal audit	• High risk environmental aspects and their associated management sub plans • Planning Approval • Legal requirements • TfNSW specifications • CEMP • All Management Sub Plans at least once during the internal audit program.	The first Internal Audit within three months of the commencement of construction and then at six monthly intervals there-after. The final submitted within five working days of contract completion date.	Environmental Manager to engage an Internal Auditor	1. Project Manager 2. TfNSW
2	Independent audit	Assessment of compliance with: – Conditions of approval – Post approval documents required under the CoA (including environmental mitigation measures and recommendations provided in environmental management plans) – All licences and approvals applicable to the development (except EPLs) • Assessment of environmental performance against relevant environmental project criteria and its effects on the surrounding environment • A review of the records substantiating all activities associated with, or relevant to, the conditions of approval, including measures taken to implement all management plans required by the planning approval • Recommendations for measures or actions to	Within 12 months of the commencement of works on Package 1	TfNSW DWJV to provide input	1. TfNSW 2. ER 3. DPIE 4. Project website

No.	Audit	Scope	Timing	Responsibility	Recipient
		improve the environmental performance of the Project and improvements to any document required under the planning approval • Status of previous audit findings • High level review of environmental management systems, plans and sub-plans • Including a review of the adequacy of the post approval documents • Any other matters that the Auditor considers relevant.			
3	Sub Contractor Audits	Best Practice and continuous improvement	As required and at least twice annually	Environment Manager or Delegate	1. Project Manager 2. Sub Contractor

7.5. Compliance Tracking and Reporting

A Project wide Compliance Tracking Program (CTP) will be implemented by TfNSW in which DWJV will provide input in accordance with CoA A30.The CTP will contain all the CoA and satisfies the requirements of CoA A30 to A34. The compliance reporting required under the CTP will record the progress and status of CoA compliance.

The CTP will be maintained and updated by the DWJV for the duration of the Project. As detailed in the Staging Report, the CTP will be maintained by TfNSW or their delegate for the duration of the PLR works and a minimum of one year following commencement of operation of the PLR, or 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. The CTP will be maintained and updated in the INX System and will be reviewed quarterly.

As detailed in section 3.3.1 of the CEMP and in accordance with CoA A23 (d), the ER is responsible for reviewing reports listed in Tables 7.4 and 7.5 that are to go to the Secretary of the DPIE.

Table 7-4 summarises the program and frequency for compliance reporting and independent auditing. In accordance with CoA A 33 each compliance report will be made publicly available on the project website and the DPIE will be notified in writing when this has been done.

Table 7-4: Compliance reporting

No	Report	Requirement	Timing	Responsibility	Recipient
1	Compliance Tracking Program	CoA 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. The CTP will utilise the INX System and will be updated quarterly	DWJV ER	1. TfNSW 2. ER 3. DPIE

No	Report	Requirement	Timing	Responsibility	Recipient
2	Pre-Construction Compliance Report CoA A34	CoA A34 The Pre Construction Compliance Report must be submitted to the Secretary for information	At least one (1) month before the commencement of construction	TfNSW DWJV to provide input	1. TfNSW 2. ER 3. DPIE
3	Construction Compliance Reports	CoA 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	TfNSW DWJV to provide input	1. TfNSW 2. ER 3. DPIE 4. Project website
4	Pre Operation Compliance Report CoA A38	Not applicable to the Enabling Works	NA	NA	NA
5	Environmental Audit Program	CoA A40	No later than one month before the commencement of construction	TfNSW	1. TfNSW 2. ER 3. DPIE 4. Project website
6	Environmental Audit Report	CoA A42	Within six weeks of completing the audit.	TfNSW	1. DPIE 2. Project Website
7	Notification of Incidents	CoA A44	Immediately after the Proponent becomes aware of an incident	TfNSW	1. DPIE 2. Project Website
8	Incident Report	CoA A45	Within one week of notification of an incident	DWJV TfNSW	1. DPIE 2. Project Website

No	Report	Requirement	Timing	Responsibility	Recipient
9	Notification of Incident notified under POEO	CoA A47	Within 24 hours after notification give to EPA	DWJV TfNSW	1. EPA 2. DPIE 3. Project website
10	Construction Monitoring Program	CoA C16	At least one month before the commencement of construction	DWJV TfNSW	1. DPIE 2. Project Website

7.5.1. Project reporting

Prior to, during and following construction, various reports will be prepared to fulfil TfNSW and other reporting needs, and requirements under the Planning Approval. Table 7-5 sets out the reporting requirements applicable to the Project, timing of the reporting, who is responsible for managing preparation of the reports and the intended recipient(s).

Additional reporting may be necessary as the works progress. In such a circumstance, Table 7-5 will be amended to reflect these changes.

Table 7-5: Project Reporting Requirements

No	Report	Requirement	Timing	Responsibility	Recipient
1	Environment Report	Detail the performance against the targets identified in the CEMP and subplans	Monthly	DWJV	TfNSW
2	Sustainability Report	Detail the performance against the targets identified in the Sustainability Management Plan	Monthly	DWJV	TfNSW
3	Environmental Representative Monthly Report	CoA A23 (i)	Monthly	ER DWJV to provide input	Secretary and other relevant regulatory agencies

No	Report	Requirement	Timing	Responsibility	Recipient
4	Noise and Vibration Report	CoA A29 (h)	Monthly	AA DWJV to provide input	Secretary and other relevant regulatory agencies

7.6. Environmental Non-Conformances

An environmental Non-Conformance or 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.

Where an environmental non-conformance is identified and is substantiated, a Non-Conformance and Corrective Action report will be issued in accordance with DWJV's *Managing Corrective and Preventative Actions (W-QU-PR-03)* following consultation with concerned parties.

The Corrective Action Report will document the agreed actions and timeframes for addressing the environmental non-conformance. If required, works in the affected area are to cease until corrective actions are made and the non-conformance is closed out. Environmental non-conformances of a serious nature are to be closed out immediately.

Non-conformances shall be managed and recorded 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*.

This system complies with the *AS/NZS 4360:2004 Risk Management Standards* and has the capability to record a risk review to establish the context, identification, analysis, evaluation and treatment of risks.

The Environment Manager or Delegate will monitor closely non-conformances and track their close out. Re-inspection of the work or item is to be conducted before close out. In instances where Sub-contractor performance does not improve after formal notification (issue of Corrective Action Report or performance meeting) the Project Manager will consider appropriate action such as:

- Suspension of work
- Counselling of Sub-contractor personnel
- Removal of Sub-contractor from the Project
- Termination of a Sub-contractor/contract.

An environmental non-conformance can generally be defined as a failure to comply with:

- Relevant environmental legislation
- Planning Approval (CoA and REMM)
- CEMP and ECMs

- Project Deed.

7.6.1. Corrective and Preventative Actions

Corrective actions will be identified as follows:

- Where an issue is identified and raised, the Environment Manager or delegate will liaise with the appropriate project personnel or qualified person(s) or seek advice from TfNSW or the ER to determine the most appropriate corrective action to implement
- Where assessed by the Environment Manager to be appropriate, the corrective action will be actioned through the Corrective Action Request (CAR).

Preventative actions will be identified as follows:

- Relevant incidents, complaints and non-conformances are discussed at relevant meetings
- Trends relating to environmental incidents and non-compliance findings are reviewed at these meetings to identify any reoccurring issues that are indicative of the need to take preventative action
- Any member of the DWJV, including subcontractors as well as the ER and TfNSW can contribute and provide suggestion to any required or appropriate preventative action
- Where assessed by the Environment Manager as necessary, a preventive action will be raised and action undertaken through a Corrective Action Request (CAR).

7.6.2. Non-Conformance Reports and Close-out

Where a non-conformance is detected a Non-Conformance Report (NCR) will be raised in the Corrective Action Request (CAR) form.

The DWJV, ER, and TfNSW representatives will determine if issues identified during an environment inspection or audit will be closed out as part of the inspection or audit reporting process or via the issue of an NCR based on the severity of the issue and its potential to impact sensitive receivers or the environment.

Where a non-conformance is a result of non-compliance with the requirements of any law or CoA regarding the Environment, DWJV will immediately notify TfNSW in writing.

In the event that repetitive observations are made i.e. if non-corrected low risk site improvement actions are not corrected within the agreed timing for actions (for more than a month in most cases) the Environment Manager will request that a NCR be raised.

Environmental related non-conformances are raised with the Environment Manager to determine appropriate actions and dates. On completion of agreed actions, the Environment Manager shall sign-off the NCR to signify close-out and provide a copy to TfNSW. Any changes to operations or practices resulting from actions are to be communicated to employees and sub-constructors as required. A register of all NCRs raised on the Project will maintained on the DWJV system.

8. Review and Improvement

8.1. CEMP Review

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 EM will record the outcomes of the review, including subsequent changes, how the site/project team will be informed of the changes and when the reviewed CEMP will be submitted to the ER for approval.

Reviews may include the EM, Project Manager, Safety Manager, Operations Manager or Director and other nominated persons with consideration of the following:

- Client comments
- Agency comments
- Complaints
- Monitoring programs
- Audit program
- Objectives and targets
- Potential improvements to the environmental management documentation
- Adequacy of resources
- Changes in internal/external issues (e.g. Legislation, risks, aspects etc.)
- Results of Internal/external/compliance audit results
- Status of corrective and preventative actions
- Results of site inspection, task observations etc
- Outcomes of incident and near miss investigations
- Project performance data (Monthly Statistical Reports)
- Performance indicators.
- Effectiveness of training and inductions.

The outcomes of the review could include amendments to this CEMP and related documentation, revision to the Project's environmental management system, risk assessment review, re-evaluation of the Project objectives and targets as well as feeding into other project documents. Any changes to the CEMP, sub plans or other documentation prescribed by the CoA will be advised to TfNSW and the ER and Agencies/DPIE (where relevant) for approval.

8.1.1. CEMP Modifications

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. More significant changes require the approval of DPIE.

8.2. Changes to the Project

Refinements to the Project may result from detailed design refinements or changed circumstances throughout construction.

TfNSW is required to seek formal approval from the Minister for any Project modifications and for documenting refinements that are consistent with the approved Project.

Any design changes or changes in scope of works must be communicated to the Senior Project Manager and the Environmental Manager. The Environmental Manager will then consult with TfNSW and implement the process detailed in section 3.1 of the *TfNSW Standard Requirements.* The DWJV will undertake an additional consistency assessment or environmental review and submit to TfNSW for review, approval or to determine if a project modification may be required.

Should the consistency assessment determine that a project modification may be required i.e. the impacts are of a nature and scale that it is not considered consistent with the Planning Approval, the ER will be informed and modification application under Section 115ZI (2) of the EP&A Act prepared by DWJV and lodged by TfNSW to the Secretary for determination.

9. Documentation

9.1. Environmental records

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

- All monitoring, inspection and compliance reports/records
- Correspondence with public authorities
- Induction and training records
- Reports on environmental incidents, other environmental non-conformances, complaints and follow-up action
- Minutes of CEMP and construction environmental management system review meetings and evidence of any action taken
- CEMP and Sub Plans
- ECMs.

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 Environmental Manager, or their delegate, has the authority to change any of the environmental management documentation.

9.2. Document control

The DWJV (or TfNSW where relevant) will coordinate the preparation, review and distribution, as appropriate, of the environmental documents and records listed in this CEMP. During the Project, all environmental documents and records will be managed and distributed via TeamBinder.

The DWJV will implement a document control procedure consistent with TeamBinder requirements, to control the flow of documents within and between Transport for NSW, stakeholders and Subcontractors.

The procedure will also ensure that documentation is:

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

A register list will identify the current revision of particular documents, records or data. The Document Register is maintained in Appendix A5. The register will include the distribution for each record.

Appendix A1 Relevant Legislation

Appendix A1
Legal Requirements

Legal requirements

Table 1: Legal register

Act	Summary of Obligations	Project Relevance
Environmental Planning and Assessment Act 1979	Comply with the terms Minister for Planning and Infrastructure's approval for the project. Obtain the Minister's approval for any project modifications that are not consistent with the planning approval.	Relevant Project Approvals granted under Part 5.1 (for the PLR Project) of the EP&A Act. Proponent and Contractors to comply with each approval (e.g. consultation, studies and plans).

Act	Summary of Obligations	Project Relevance
Protection of the Environment Operations Act 1997	The POEO Act is the key piece of environment protection legislation, and is administered by the EPA. The objective of the Act is to protect restore and enhance the quality of the environment in NSW with a need to maintain ecologically sustainable development, via: • Integrated environment protection licencing; • Regulation of scheduled and non-scheduled activities; • Environmental protection offences and penalties, and environmental protection notices; • Establishment of a general duty to notify of environmental harm; • Powers for authorised officers to investigate actual or potential pollution events. • Schedule 1 of the POEO Act lists activities that are subject to environmental licencing.	Construction works involve activities that are not required to be licenced. Environmental protection offences and penalties, and a duty to notify of environmental harm, apply to all personnel working on the project. Definitions of air, water and noise pollution offences

Act	Summary of Obligations	Project Relevance
POEO (General) Regulation 2009	The Regulation: • sets out how to calculate fees for environment protection licences, environment protection notices and noise control notices, and makes provision for adjustment or refunds of those fees; • sets out matters to be included by the EPA for the grant or refusal of a licence application; • makes it an offence to provide false or misleading information in relation to a licence application; • requires licencees to retain records used to calculate licence fees; • prescribes certain matter when placed into water to be water pollution, and the methodology for testing matter in waters; • exempts certain water pollution from the water pollution offence under the Protection of the Environment Operations Act 1997; • declares certain bodies to be the appropriate regulatory authority in relation to certain activities for the purposes of the Protection of the Environment Operations Act 1997;	The Project does not require an EPL
POEO (Noise Control) Regulation 2008	This Regulation repeals and remakes, with minor amendments, the provisions of the Protection of the Environment Operations (Noise Control) Regulation 2000: • the emission of noise from the engines or exhausts of motor vehicles; • maintenance of noise control equipment on motor vehicles, and issue of defective vehicle notices; • the times during which it is not permissible to use certain articles if they emit noise that can be heard in any residential premises.	Noise emissions from construction equipment and machinery.

Act	Summary of Obligations	Project Relevance
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 and Conditions of Approval).	The local Councils are in some instances consultation stakeholders (plans and strategies) and/or approval authorities (local roads).
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. Section 138 of the Roads Act requires a person to obtain the 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.	This Act requires approvals from the relevant roads authority for activities that impact roads and require temporary/permanent changes to traffic or infrastructure (RMS for state and Councils for local roads).
Environment Protection and Biodiversity Conservation Act 1999 (Cwth)	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.	Project does not trigger impact on “nationally significant” resources.

Act	Summary of Obligations	Project Relevance
Water Management Act 2000 *Water Management (General) Regulation 2011*	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. This Act governs the issue of new water licences and the trade of water licences and allocations for those water sources (rivers, lakes and groundwater) in NSW where water sharing plans have commenced. Activities such as temporary dewatering works are identified as aquifer interference activities under the Act and the Aquifer Interference Policy which presents the requirements for assessment of aquifer interference activities.	It is not proposed that construction water will be obtained from surface (e.g. creeks, lakes etc.) or artesian sources. Where groundwater inflows are expected to be encountered and significant dewatering will be required during construction, and where this is in an areas covered by a water sharing plan, relevant licencing requirements will apply. In the circumstance that off-site disposal via stormwater is required, a Water Access Licence may be required.
Contaminated Land Management Act 1997	The Act provides a regime for investigating and, where appropriate, remediating land affected by contamination, which represents a significant risk of harm to human health or the environment. Under this act EPA has the power to: • Declare an investigation site and order an investigation • Declare a remediation site and order remediation to take place • Agree to a voluntary proposal to investigate or remediate a site	Contaminated land within the construction impact area must be assessed and managed in accordance with this Act.
Environmentally Hazardous Chemicals Act 1985	This Act prohibits the manufacturing, processing, storage, 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.	It is not anticipated any environmentally hazardous chemicals or declared chemical waste will be used or stored on the site. The Act therefore has little relevance to the site other than being aware of the existence of registers of declared chemical wastes and environmentally hazardous chemicals.

Act	Summary of Obligations	Project Relevance
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). Depending on the quantities being transported, the Act outlines specific requirements for including appropriate placards on the transport vehicle, emergency procedures, PPE, manifest documentation and fire extinguishers.	The relevance of the Act is in respect to the transport of dangerous good to & from the site. The project will require the use of a variety of dangerous goods. The D&C JV will need to review and ensure dangerous goods requirements are addressed during transportation.
Heritage Act 1977	Approval must be gained from the Heritage Council when making changes to a heritage place listed on the State Heritage Register, or when excavating any land in NSW where you might disturb an archaeological relic.	Assessed under Part 5.1 of *EP&A Act* therefore permits not required. The *Construction Heritage Management Plan* will identify areas of potential impact and mitigation measures.
National Parks and Wildlife Act 1974	The relevance of this Act is firstly in respect to the protection and preservation of Aboriginal artefacts. The Act specifies that the discovery of material on site suspected as being of Aboriginal origin must be reported and protected pending assessment and direction by the TfNSW's Representative and Environmental 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).	Assessed under Part 5.1 of *EP&A Act* therefore permits not required. *Construction Heritage Management Plan* will identify areas of potential impact and mitigation measures.

Act	Summary of Obligations	Project Relevance
National Greenhouse and Energy Reporting (NGER) Act 2007 (Cth)	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.	The D&C JV is a registered entity under this act. As such, where DWJV has control of the site, the Scope 1 and Scope 2 emissions associated with the project must be reported. This includes the collation and reporting of subcontractors site emissions.
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	No Endangered Ecological Communities (EECs) listed under the Biodiversity Conservation Act 2016 (BC Act) were recorded within the footprint of enabling works. No Commonwealth EPBC Act listed EECs have been recorded within the footprint of enabling works. No threatened fauna species have been identified within the footprint of enabling works. No threatened fauna species were identified within the 'footprint of enabling works'. However, Grey-headed Flying Fox are known to roost in nearby Parramatta Park.

Act	Summary of Obligations	Project Relevance
Biosecurity Act 2015	This Act provides modern, flexible tools and powers to allow effective, risk-based management of biosecurity in NSW. It provides efficiency and decreases regulation in responding to biosecurity risks and provides a streamlined statutory framework to protect the NSW economy, environment and community from the negative impact of pests, diseases and weeds.	Noxious weeds should be disposed of and managed in accordance with assigned control categories under the Regional Strategic Weed Management Plans (RSWMP's). Noxious weeds for the Project will be managed in accordance with the *Construction Flora and Fauna Management Plan (FFMP).*
Pesticides Act 1999	Promotes the protection of human health, environment, property and trade in relation to the use of pesticides.	Pesticides may be used in the eradication of weeds at the construction worksites as described in the *Construction Flora and Fauna Management Plan.*
Waste Avoidance and Resource Recovery Act 2001	The purpose of the Act is to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecological sustainable development. The Act provides for the making of policies and strategies to achieve these ends. It is an offence under the Protection of the Environment Operations Act to wilfully or negligently dispose of waste in a manner that harms or is likely to harm the environment.	Provides requirements for waste avoidance and resource recovery which are addressed in the *Waste Management and Recycling Plan*
Sydney Water Act 1994	This Act establishes the Sydney Water Corporation as a statutory State owned corporation. The functions of the Sydney Water Corporation is to supply and store water, provide sewerage services, provide stormwater drainage and dispose of waste water within it area of operations.	Coordination may be required with Sydney Water during the works

Appendix A2 Environmental Risk Assessment

Environmental Risk Assessment: Project Information

Name of Project and Stage/Phase of Works:	Parramatta Light Rail - Enabling Works	**Planning Approval Type**	**EIS /SPIR Complete**
Project Location:	All	**TSR**	
Project Duration:	36 months	**Resources**	
Date of First Assessment:	17/08/2018	**EMR**	**Gillian Lahn**
Date of Review	28/10/2020	**Inspection Frequency**	**Weekly**
Completed by	Rowan Grace / Vanessa Zbinden / Richard Farmer	**Other**	
Risk workshop attendees (name and role)	Rowan Grace (EM), Charlie Saummon (Environmental advisor), Vanessa Zbinden (Environmental coordinator)	**Other**	

Key Environmental Issues identified

Noise and vibration
Heritage
Tree management
Management of water
Management of waste materials

Environmental Risk Identification								Risk analysis and			Risk Management	ibility and Mo	Comments
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	Status (active or closed) as at:	Comments
1	Early Works	Impact to undiscovered or undocumented heritage sites. Impact to identified heritage items.	Heritage	Breach of Heritage Act resulting in stop works	Environment - Environment Effects / Cultural Heritage	All locations	HMP, Induction, Toolboxes	Major	Unlikely	High	Archeologist to be onsite in heritage risk areas as advised by Heritage consultant through Memos Pre-works checklist to be completed and developed Pre-works to be approved by TfNSW prior to commencing ARD to be developed and implemented prior to breaking ground	Closed	Early works completed
2	Early works	Noise and vibration impacts to nearby community	Noise and Vibration	Community complaints received by regulator, leading to investigations, breach of conditions of approval and possible stop work orders	Environment - Environment Effects / Cultural Heritage	All locations	Noise and vibration management plan	Major	Unlikely	High	TfNSW out of hours procedure	Closed	Eary works completed
3	Vegetation Clearing / Trimming and Grubbing	Unauthorised works / removal of vegetation outside defined work area, possibility of removing threatened species, fines incurred.	Flora and Fauna	Complaints received by the regulator, leading to investigations, breach of conditions of approval and possible stop work orders Breach of PoEO Act resulting in to PIN or Fine	Environment - Environment Effects / Cultural Heritage	O'Connell St and George St Robin Thomas Reserve	Flora and fauna management plan (FFMP) Inductions - Induction and tool box training on clearance zones and required protection measures Toolboxes ECMs	Severe	Unlikely	Very High	Inspections during clearing activities/ designated enviro / Fencing in place/ clear marking of trees to be retained and cleared / demarcation areas / plans showing clearing areas. Engage an arborist to advise on tree removal / grubbing works. No trees are to be removed with prior approval Tree Removal Register Updated tree removal procedure developed by IA	Active	Tree assessments are on going and approvals sought for tree removal. Note that NCRs for tree removal have been raised in January 2020. No additional removal have been undertaken along in North Parramatta (O'Connell and Church st). No works have been undertaken in George street since November 2019.
4	Vegetation Clearing / Trimming and Grubbing	Erosion of soils, uncontrolled runoff, sediment deposited into surrounding vegetated areas and water courses, and invasion of weeds.	Water Pollution	Stop work orders delay project progress and timing Potential breach of PoEO Act and possible fines	Environment - Environment Effects / Cultural Heritage	O'Connell St and George St Robin Thomas Reserve	Flora and fauna management plan (FFMP) Inductions and toolbox training on erosion and sediment controls. ECMs	Moderate	Unlikely	Low	Erosion and sediment control plans to be developed and in place prior to the commencment of works Where possible works to be staged so environmental controls can be implemented after clearance works.	Active	
5	Vegetation Clearing / Trimming and Grubbing	Wrong vegetation removed.	Flora and Fauna	Complaints received by the regulator, leading to investigations, breach of conditions of approval and possible stop work orders Breach of PoEO Act resulting in to PIN or Fine	Environment - Environment Effects / Cultural Heritage	O'Connell St and George St Robin Thomas Reserve	Soil Water Management Plan (SWMP) EWMS Inductions - Induction and tool box training on clearance zones and required protection measures Toolboxes ECMs	Major	Unlikely	High	Inspections during clearing activities/ designated enviro / Fencing in place/ clear marking of trees to be retained and cleared / demarcation areas / plans showing clearing areas. Engage an arborist to advise on tree removal / grubbing works. No trees are to be removed with prior approval Pre clearing checklist to be completed before any clearing of vegetation. Tree Removal Register	Active	Approval is sought for removal of all trees that meet the definition of a tree in AS4970, ie >3m. Clearly label trees planned for removal in Robin Thomas Reserve.
6	Vegetation Clearing / Trimming and Grubbing	Potential for injury to native fauna.	Flora and Fauna	Complaints received by the community resulting in investigations and potential stop work orders Breach of PoEO Act resulting in to PIN or Fine	Environment - Environment Effects / Cultural Heritage	O'Connell St and George St Robin Thomas Reserve	Flora and fauna management plan (FFMP) Inductions - Induction and tool box training on clearance zones and required protection measures Toolboxes ECMs	Major	Unlikely	High	Inspections during clearing activities/ designated enviro / Fencing in place/ clear marking of trees to be retained and cleared / demarcation areas / plans showing clearing areas. Engage an arborist to advise on tree removal / grubbing works. No trees are to be removed with prior approval Pre clearing checklist to be completed before any clearing of vegetation. Tree Removal Register	Active	Undertake toolbox. Ecologist on site during removal of trees with hollows
7	Vegetation Clearing / Trimming and Grubbing	Tree removal works block access and create delays to pedestrians and traffic	Traffic, Transport and Access	Complaints received by community hotline, leading to local response by Project supervisor Complaints and investigation by Council	Reputation - Community	All locations	TMP	Moderate	Unlikely	Low	Traffic control plans approved and implemented prior to works	Active	No additional removal have been undertaken along in North Parramatta (O'Connell and Church st). No works have been undertaken in George street since November 2019. Landscaping works, tree planting has been undertaken in North Parramatta. No additional removal is planned in this area.
8	Vegetation Clearing / Trimming and Grubbing	Impact to undiscovered or undocumented heritage sites. Impact to identified heritage items.	Heritage	Breach of Heritage Act resulting in stop works	Environment - Environment Effects / Cultural Heritage	All locations	HMP, Induction, Toolboxes	Major	Unlikely	High	Archeologist to be onsite in heritage risk areas as advised by Heritage consultant ARD to be developed and implemented prior to breaking ground	Active	Final stormwater connections in North Parramatta and pavement works are being undertaken. No additional deep excavations are expected. In QWR landscaping and a small portion of the stormwater will occur during May 2020. Heritage in this area has been assessed by heritage specialist and aproved for removal and disposal as the material is contaminated.
9	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Dirty water not captured within basins or other onsite water management measures leaves site. Contamination of basins and /or waterways from spills. Uncontrolled discharge of water (e.g. dirty water) from basins or other onsite water management measures.	Water Pollution	Breach of PoEO Act resulting in to PIN or Fine Complaints by regulator (EPA) resulting in stop work	Environment - Environment Effects / Cultural Heritage	All locations	SWMP & ECMs, Induction, Toolboxes, pre-rain checklists	Major	Likely	High	Erosion and sediment control plans to be developed and in place prior to the commencement of works in accordnace with the blue book Regular inspections of work areas Environmental controls to remain in place until handover (in accordance with bluebook) Storage, compound access and parking areas sealed, as early during works as practicable.	Active	
10	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Complaints from neighbours, including loss of amenity, dust in living areas, swimming pools. Degradation of water quality and other aspects of the natural environment. Health risks to neighbours and members of the public from release of gases and/or smoke. Emissions from plant and equipment	Air and Dust	Complaints received on Community hotline Complaints received and investigation from regulators resulting in potential stop work	Reputation - Community	All locations	AQMP, EWMS, SWMP, Complaint Procedure, Induction	Major	Likely	High	Erosion and sediment control plans to be developed and in place prior to the commencement of works. Regular inspections of work areas Environmental controls to remain in place until handover (in accordance with bluebook) Minimise areas of exposed surfaces through construction planning Wetting down surfaces. Hard stand at compund	Active	
11	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Vibration impacts on nearby receptors, including heritage. Noise levels impacts nearby residents, commercial facilities	Noise and Vibration	Complaints received on the community hotline resulting in local response by Project Supervisor Complaints and investigation by regulators resulting in PINs. Fine or potentially stop work	Reputation - Community	All locations	CNVMP, HMP Toolboxes Inductions	Major	Very Likely	High	Regular monitoring and inspections Use of correct equipment for the task Comply with TfNSW works approvals, out of hours woks permits Engage with community, ensure notification of works has been undertaken prior to commencing task Crews to undergo Community iteration training Respite periods to be enforced pre-works monitoring to be undertaken to develop baseline values CNVIS Out of hours permits	Active	
12	Out of hours - Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Vibration impacts on nearby receptors, including heritage. Noise levels impacts nearby residents, commercial facilities	Noise and Vibration	Complaints received on the community hotline resulting in local response by Project Supervisor Complaints and investigation by regulators resulting in PINs. Fine or potentially stop work	Reputation - Community	All locations	CNVMP, HMP Toolboxes Inductions	Major	Very Likely	High	Implement and toolbox TfNSW Out of Hours works notification Prestarts to include controls required for the shifts Plant to be located as far as possible and face away from receivers Dedicated vehicle access routes to be developed High impact tasks to be scheduled to minimise disruptions dependent on receivers. Respite periods to be enforced pre-works monitoring to be undertaken to develop baseline values Engage with community, ensure notification of works has been undertaken prior to commencing task Permits only approved by AA/ER where vibration risks are low-medium,	Active	
13	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Traffic diversions change traffic noise, changing behavior for local community	Noise and Vibration	Community complaints resulting in local response by project supervisor	Reputation - Community	O'Connell / Church St	CNVMP / TMP	Moderate	Unlikely	Low	Operation noise assessments / modelling to be considered. Ongoing monitoring throughout the Project	Active	Construction Monitoring report sent to TfNSW and AA. Complaint received during day works. Due to CONVID-19 people are working from home. Noise monitoring results are under predicted levels.

Environmental Risk Identification								Risk analysis and			Risk Management	ibility and Mc	Comments
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	Status (active or closed) as at:	Comments
14	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Disturbance of unidentified contaminated land. Disturbance of Potential Acid Sulfate soils and Actual Acid Sulfate Soils during excavations. Disturbance of unknown asbestos	Waste and Hazardous Material	Stop works ands delays in project Community complaints due to odours or potential exposure to contamination	Safety - Injury and Disease (including employees, contractors, passengers, and the public)	All locations	Contaminated land management plan Toolbox Inductions	Moderate	Very Likely	Medium	Toolbox and implement TfNSW Unexpected Find Procedure Additioanl targeted sampling	Active	Note that across the project footprint most areas have been opened. Likelihood of encountering new contamination is unlikely
15	Construction: Installation, relocation of services and utilities, earthworks for road pavement construction	Complaints from neighbours regarding mess, litter, rubbish	Community	Community complaints resulting in local response by project supervisor	Reputation - Community	All locations	Toolboxes and Induction	Minor	Very Likely	Low	Regular monitoring and inspections Crews to undergo Community interaction training Ongoing maintenance to be undertaken on visual amenity on work areas and compounds Comms strategy	Active	
16	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Failure to adequately identify project vehicles	Community	Breach of contract obligations Breach of Conditions of Approval resulting in regulatory investigation, fines and potential stop work	Reputation - Government / Media / Stakeholders	All locations	Site management plan Communications management plan Inductions	Major	Very Likely	High	Regular monitoring and spot checks of vehicles to be incorperated into inspection checklists Signage on vehciels to be ER approved	Active	
17	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Failure to adequately communicate with community / sensitive receivers - - Reece Plumbing - residents -schools - commercial	Community	Community complaints resulting in local response by project supervisor	Reputation - Government / Media / Stakeholders	Reece Plumbing	Communications management plan	Major	Likely	High	Crews to be toolboxed in community interaction Stakeholder meetings Cooms teams Regular notification Pop ups	Active	Note to date that minimal complaints received
18	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Uncover and disturb unknown item of heritage value	Heritage	Potential breach of heritage regulations leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	All locations	Heritage Management Plan	Moderate	Unlikely	Low	Consultation with heritage consultants Supervision by archeologist if required Toolbox and implement TfNSW Unexpected Find Procedure ARD to be developed and implemented prior to breaking ground Test excavations / Work method statements E65 consultation with OEH	Active	Final stormwater connections in North Parramatta and pavement works are being undertaken. No aditional deep excavations are expected. In QWR landscaping and a small portion of the stormwater will occur during May 2020. Heritage in this area has been assessed by heritage specialist and aproved for removal and disposal as the material is contaminated.
19	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Damage known heritage item Work in suspected heritage area without approval or supervision	Heritage	Potential breach of heritage regulations leading to PIN or fine and potentially stop works	Environment - Environment Effects / Cultural Heritage	O'Connell St and Robin Thomas Reserve	Heritage Management Plan	Severe	Likely	Very High	When work near identified heritage items supervision by archeologist required Prestarts and toolboxes to inform crews of heritage requirements in each work area ARD to be developed and implemented prior to breaking ground Test excavations / Work method statements E65 consultation with OEH Vibration monitoring	Active	Works near Parramatta gaol are complete. No damage has occurred to date.
20	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Work in areas that have not had archaeological assessment / prior to assessment being completed	Heritage	Potential breach of heritage regulations leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	Robin Thomas Reserve	Heritage Management Plan	Severe	Unlikely	Very High	ARD to be completed and implemented prior to commencing works No ground disturbance in Robin Thomas Reserve without consistency assessment Test excaavtions with adequate supervision Work method statements Unexpected finds procedure toolboxed	Active	Investigations undertaken by Artefact as required by ARD, or Extent as required by the AWMS prior to works. All working areas have been assessed by heritage specialist (Artefact or Extent)
21	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Change in visual amenity of Gaol	Heritage	Potential breach of heritage regulations leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	Gaol	Design Management Plan	Major	Likely	High	Design review to consider visual impacts on heritage Consultation with DLC regarding final design of pocket park	Active	Heritage sandstone blocks have been used along the kerb outside Parramatta Gaol as per approved design. Landscaping tree planting occurred during April 2020 on the verge.
22	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Disturbing sensitive receivers - particularly Goal during filming Schools during exams High density residential	Community	Complaints received by community hotline, leading to local response by on site Project Supervisor	Reputation - Community	Gaol Victoria Rd / O'Connell Intersection O'Connell St	Traffic management plan Community Management Plan	Moderate	Very Unlikely	Low	Ensure that community management plan incorporates liaison with Schools, Goal and residential Regeular review of complaints (CM) Activie stakeholder engagement	Active	Stormwater installation and Pavement works along O'Connell Street (Day and Night shifts). DWJV is allowed to work only 2 nights/week in this area. (Dunlop/Factory/Albert intersections)
23	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Interaction with Stadium Operation from Apr 2019	Traffic, Transport and Access	Complaints received by community hotline, leading to local response by on site Project Supervisor	Reputation - Government / Media / Stakeholders	Victoria Rd / O'Connell St Intersection	Traffic management plan Community Management Plan	Major	Likely	High	Track events schedule of stadium Undertake regular liaison with stadium operators ROLs from SCO	Active	Construction of the stadium was completed in 2019.
24	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Flooding of nearby receivers during rain events, particularly basements	Water Pollution	Complaints received by community hotline, leading to local response by on site Project Supervisor Damage to properties resulting in repair of damaged properties	Reputation - Community	George St / O'Connell St	Flood Management Plan	Severe	Likely	Very High	ECMs, flood management mitigation measures to be incorporated into procedures Pre-establish walks to incorporate basement inspection	Active	Note that storm water on George Street has been completed
25	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Site vehicles block access to pedestrian and local traffic	Traffic, Transport and Access	Complaints received by community hotline, leading to local response by on site Project Supervisor	Reputation - Community	All locations	Traffic management plan	Moderate	Likely	Medium	Traffic control plans approved and implemented prior to works CTTMP approved by stakeholders prior to implementation Community notifications Access plans Additional traffic management where required	Active	
26	Construction: Installation, relocation of services of services and utilities, earthworks for road pavement construction	Unauthorised access to site due to insufficient security	Traffic, Transport and Access	Trespassing resulting in damage, theft or injury to unauthorised personnel	Safety - Injury and Disease (including employees, contractors, passengers, and the public)	All locations	Traffic management plan	Moderate	Likely	Medium	Site to be secured with locked gates Fencing to be maintained and inspected	Active	
27	Compound operation	Spill	Water Pollution	Potential breach of PoEO Act leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	Lot 34 O'Connell St	Soil and water management plan	Minor	Likely	#N/A	Ensure ECM / PESCP is develop and approved prior to commencing establishment works Sediment controls measures to be implement prior to establishment of site Ensure spill kit is on site	Active	ECM's updated and approved by ER.
28	Compound operation	Noisy works create a nuisance to nearby commercial receivers	Noise and Vibration	Potential breach of PoEO Act leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	Lot 34 O'Connell St	Noise and vibration management plan	Moderate	Likely	Medium	Monitoring program to be implemented in accordance with CoAs Sound curtains to be installed around stationary plant CNVIS SEMP	Active	
29	Compound operation	Site vehicles block access to pedestrian and local traffic on O'Connell Street	Traffic, Transport and Access	Complaints received by community hotline, leading to local response by on site Project Supervisor	Reputation - Community	Lot 34 O'Connell St	Traffic management plan	Moderate	Likely	Medium	Traffic control plans approved and implemented prior to works	Active	
30	Compound operation	Unauthorised access to site due to insufficient security	Traffic, Transport and Access	Trespassing resulting in damage, theft or injury to unauthorised personnel	Safety - Injury and Disease (including employees, contractors, passengers, and the public)	Lot 34 O'Connell St	Traffic management plan	Moderate	Likely	Medium	Site to be secured with locked gates Fencing to be maintained and inspected	Active	
31	Compound operation	Water and land pollution for insufficient sediment and erosion controls	Land Contamination	Potential breach of PoEO Act leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	Lot 34 O'Connell St	Contaminated lands Management Plans Emergency Response Plan	Major	Likely	High	Ensure ECM / PESCP is develop and approved prior to commencing establishment works Sediment controls measures to be implemented, monitored and maintained Ensure spill kit is on site SEMP approved by ER and DPE	Active	
32	Compound operation	Air pollution through dust and vehicle emissions	Air and Dust	Complaints received Potential breach of PoEO Act leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	Lot 34 O'Connell St	Air Quality Management Plan	Moderate	Likely	Medium	Stockpiles to be minimised, covered and wet down as required Resurfaceing of compound accessways Dust supression hose established	Active	
33	Compound operation	Waste - rubbish, litter	Waste and Hazardous Material	Potential breach of PoEO Act leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	Lot 34 O'Connell St	Waste and Resource Management Plan	Minor	Likely	#N/A	Rubbish bins to be provided on site Compound to be inspected and maintained on a regular basis	Active	
34	Compound operation	Visual amenity - poor housekeeping	Community	Community complaints resulting in reputational damage	Reputation - Community	Lot 34 O'Connell St	Communication management plan	Moderate	Likely	Medium	Rubbish bins to be provided on site Compound to be inspected and maintained on a regular basis TfNSW shade clothe	Active	
35	Spoil handling / Stockpiling of materials	Dirty water not captured within basins or other onsite water management measures leaves site. Contamination of basins and /or waterways from spills. Uncontrolled discharge of water (e.g. dirty water) from basins or other onsite water management measures. Erosion and movement of soils.	Water Pollution	Breach of PoEO Act resulting in to PIN or Fine Complaints by regulator (EPA) resulting in stop work	Environment - Environment Effects / Cultural Heritage	All locations	SWMP & Induction, Toolboxes	Major	Likely	High	ECMs, Erosion and sediment control plans to be developed and in place prior to the commencement of works. Regular inspections of work areas Environmental controls to remain in place until handover (in accordance with bluebook) Locate spoil stockpiles, plant and equipment away from drainage lines, watercourses or stormwater drains in accordance with Blue Book requirements • Install clean water diversions to ensure clean and dirty water are not mixed on site.	Active	

Environmental Risk Identification								Risk analysis and			Risk Management	ibility and Mc	Comments
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	Status (active or closed) as at:	Comments
36	Spoil handling / Stockpiling of materials	Health risks to neighbours and members of the public from release of dust. Potential adverse health effects.	Air and Dust	Breach of PoEO Act resulting in to PIN or Fine Complaints by regulator (EPA) resulting in stop work Community complaints resulting in reputational damage	Safety - Injury and Disease (including employees, contractors, passengers, and the public)	All locations	AQMP, SWMP, Complaint Procedure, Induction	Moderate	Very Likely	Medium	Ensure surfaces are wet down Surfaces to be covered / stabilised as soon as feasible Shade cloths to be located around work areas to minimise dust leaving site Regular monitoring to be undertaken Trucks to have loads covered	Active	Pavement works in North Parramatta complete.
37	Spoil handling / Stockpiling of materials	Vehicle movements resulting in complaints from community	Traffic, Transport and Access	Community complaints to hotline resulting in reputational damage	Reputation - Community	All locations	TMP	Moderate	Unlikely	Low	Dedicated transport routes Inductions, prestarts and toolboxes covering site rules Speed limits to be set and enforced Loads covered during transport	Active	
38	Spoil handling / Stockpiling of materials	Spread of weeds	Flora and Fauna	Spread of weeds resulting in investigation from regulators	Environment - Environment Effects / Cultural Heritage	All locations	Flora and fauna management plan	Minor	Unlikely	#N/A	Vehicles to be cleaned and inspected prior to leaving work areas site Weed toolbox	Active	
39	Spoil handling / Stockpiling of materials	Excessive waste being directed to landfill. Incorrect disposal of contaminated waste. Meeting POEO VENM, ENM and mulch requirements.	Waste and Hazardous Material	Breach of contract Investigation by regulator resulting in fines, PINs and stop work notice	Environment - Environment Effects / Cultural Heritage	All locations	Waste and resource management plan	Major	Very Unlikely	Medium	Waste tracking register to be used ECM / PESCPs for compound areas to be established and implemented prior works Stockpile areas are to be labeled, separated and easily accessible. All waste to be classified in accordance with Waste Classification Guidelines prior to offsite disposal Stockpiles to be covered prior to rain events	Active	
40	Spoil handling / Stockpiling of materials	Non-compliant material and contaminated water entering surrounding waterways. Transfer of material into previously uncontaminated area (outside work site) causing new contamination. Decrease in health of nearby ecosystems.	Waste and Hazardous Material	Breach of PoEO Act resulting in to PIN or Fine Complaints by regulator (EPA) resulting in stop work Community complaints resulting in reputational damage	Environment - Environment Effects / Cultural Heritage	All locations	SWMP, ECM, PESCPs	Major	Likely	High	Additional controls / procedure to be develop when severe rain events are predicted Controls are to be installed and maintained until the conclusion of the project All controls are to be planned to meet Bluebook standards	Active	
41	Demolition works	Health risks to neighbours and members of the public from release of dust. Potential adverse health effects.	Air and Dust	Breach of PoEO Act resulting in to PIN or Fine Complaints by regulator (EPA) resulting in stop work Community complaints resulting in reputational damage	Safety - Injury and Disease (including employees, contractors, passengers, and the public)	Demolition properties	AQMP, EWMS, SWMP, Complaint Procedure, Induction	Moderate	Unlikely	Low	Ensure surfaces are wet down Surfaces to be covered / stabilised as soon as feasible Screening is to be located around work areas to minimise dust leaving site Regular monitoring to be undertaken	Closed	
42	Demolition works	Vehicle movements resulting in complaints from community	Traffic, Transport and Access	Community complaints to hotline resulting in reputational damage	Reputation - Community	Demolition properties	TMP	Minor	Unlikely	#N/A	Dedicated transport routes Inductions, prestarts and toolboxes covering site rules Speed limits to be set and enforced	CLosed	
43	Demolition works	Noise and vibration impacts to nearby receivers from demolition works	Noise and Vibration	Community complaints to hotline resulting in reputational damage	Reputation - Community	Demolition properties	Demolition management plan, inductions and toolboxes	Moderate	Unlikely	Low	Works are to be scheduled for standard working hours Crews to be toolbox in community interactions	Closed	
44	Demolition works	Damage to nearby trees	Flora and Fauna	Breach of PoEO Act resulting in to PIN or Fine Complaints by regulator (EPA) resulting in stop work Community complaints resulting in reputational damage	Environment - Environment Effects / Cultural Heritage	Demolition properties	Demolition management plan, inductions and toolboxes	Moderate	Unlikely	Low	Preworks inspection to be undertaken Trees identified in the works area, to be protected during the works with advice from Level 5 arborist	Closed	
45	Demolition works	Exposure to asbestos, lead, PCBs	Waste and Hazardous Material	Community complaints to hotline resulting in reputational damage Worker exposure resulting in regulator investigation, fines and potential stop work notice	Safety - Injury and Disease (including employees, contractors, passengers, and the public)	Demolition properties	Demolition management plan, inductions and toolboxes	Severe	Very Unlikely	High	Hazardous materials survey to be completed prior to works. Clearance certificates from hygienists prior to commencing demolition works Toolbox unexpected finds procedure	Closed	
46	Demolition works	Uncover and disturb unknown item of heritage value	Heritage	Potential breach of heritage regulations leading to PIN or fine	Environment - Environment Effects / Cultural Heritage	Demolition properties	Heritage Management Plan	Moderate	Unlikely	Low	Consultation with heritage consultants Supervision by archeologist if required Toolbox and implement TfNSW Unexpected Find Procedure	Closed	
47	Concrete Works	Release of concrete slurry resulting in damage to the environment Incorrect washout of concrete	Water Pollution	Breach of PoEO Act resulting in to PIN or Fine Complaints by regulator (EPA) resulting in stop work	Environment - Environment Effects / Cultural Heritage	All locations	SWMP, Induction, Toolboxes, Concrete washout work instruction	Moderate	Likely	Medium	ECMs to be developed that clearly show location of concrete washout bays Concrete washout bays to be located in easily accessible areas Concrete washout bays to be lined with an impervious material	Active	No slurry from concrete paving noted during inspections.
48	Climate Change	Sea level rise Increase storm intensity Increased temperature	Systems and Documentation	Inadequate design of utilities Controls not adequately installed to handle additional rain intensity	Environment - Environment Effects / Cultural Heritage	All locations	Implement adaptation measures detailed in the Climate Change Risk Assessment	Moderate	Unlikely	Low	Pre and post rain inspections Design utilities based on adaptation measures detailed in the Climate Change Risk Assessment	Active	

Appendix A3 Environmental Policy

ENVIRONMENTAL POLICY

WARD

The management and staff of the Diana Ward Joint Venture (DWJV) recognise that the civil construction industry has a significant impact on the environment. The DWJV has implemented an Environmental Management System (EMS) to minimise such impacts.

Our EMS is designed to meet the requirements of AS/NZS ISO 14001 (the Standard) and incorporates documentation, implementation, maintenance, and communication through our corporate business management system.

All managers, supervisors, employees, and subcontractors are responsible and accountable for the environmental controls in their workplace.

In documenting this Environmental Policy, we commit the DWJV to the following goals:

- A documented EMS identifying environmental aspects that can be specifically tailored to the Parramatta Light Rail Stage 1 Enabling Works project to prevent pollution and to protect the environment
- Identification and compliance with relevant legal and other requirements
- Establishment of a culture to continually improve the effectiveness of its EMS
- Establishment of a framework within the EMS for setting, reviewing, and communication of measurable environmental objectives and targets
- Provision of resources, role descriptions, responsibility statements, and delegations of authority for the implementation of the EMS and its controls
- Provision of training for, and ensuring awareness and competence of our employees and subcontractors in the requirements and usage of this EMS
- Communication of DWJV-wide and industry-wide information
- Implementation of emergency preparedness and response mechanisms
- A system for monitoring and measuring environmental controls
- That appropriate investigative, preventative, and corrective actions are taken in response to incidents with the aim of preventing re-occurrence
- That all processes are subject to regular and systematic management review

Our commitment to the environment will be evident through continual improvement via training, communication, consultation, monitoring and review with full support from the DWJV's senior management.

Authorised by:

Appendix A4 Indicative Construction Staging

STAGE 1 – NIGHT WORKS UNDER TEMPORARY TRAFFIC CONTROL
INTERSECTION WORKS ONLY ON WEEKENDS (ONE AT A TIME)
WORK PERIOD - EARLY JAN – EARLY MARCH 2019 (PENDING APPROVAL, NOTIFICATIONS)
ACTIVITY – RELOCATE/PROTECT UTILITY SERVICES, TRAFFIC CONTROL SIGNAL WORKS, KERB AND FOOTPATH WORKS
*POTENTIAL DECOPE OF UTILITY SERVICES – DUE TO POTENTIAL DESCOPE WORKS MAY OCCUR LATER

STAGE 1 – NIGHT WORKS UNDER TEMPORARY TRAFFIC CONTROL
WORK PERIOD – MID JAN - MARCH 2019 (PENDING APPROVAL, NOTIFICATIONS)
ACTIVITY – RELOCATE WATERMAIN; PROTECT GAS AND COMMS SERVICES; TEMPORARY PAVEMENT CONSTRUCTION TO ALLOW TRAFFIC TO BE SHIFTED ACROSS FOR THE FOLLOWING STAGE

STAGE 1 – NIGHT WORKS UNDER TEMPORARY TRAFFIC CONTROL
WORK PERIOD - EARLY MARCH – APRIL 2019
ACTIVITY – RELOCATE/PROTECT UTILITY SERVICES, TRAFFIC CONTROL SIGNAL WORKS, KERB AND FOOTPATH WORKS
*POTENTIAL DECOPE OF UTILITY SERVICES – DUE TO POTENTIAL DESCOPE WORKS MAY OCCUR LATER

STAGE 2 – DAYWORK BEHIND BARRIERS
WORK PERIOD – LATE MARCH - JULY 2019
ACTIVITY – DEMLISH KERB & FOOTPATHS; EMBANKMENT CONSTRUCTION; SERVICES RELOCATION INCLUDING CROSSINGS AT NIGHT UNDER TEMP TRAFFIC CONTROL; SW DRAINAGE, PAVEMENT, KERB AND FOOTPATH WORKS

STAGE 2 – WEEKEND WORKS UNDER TEMPORARY TRAFFIC CONTROL
(ONE AT A TIME)
WORK PERIOD - EARLY JAN – EARLY MARCH 2019
ACTIVITY – RE-ALIGN KERB AND CONSTRUCT FULL DEPTH PAVEMENT; CONSTRUCT PAVED PEDETRIAN THRESHOLDS INCLUDING SW DRAINAGE; BLISTERS; TRAFFIC CONTROL SIGNAL ADJUSTMENTS

STAGE 3 – NIGHT WORKS AND WEEKEND CLOSURE WITH TEMPORARY TRAFFIC CONTROL
WORK PERIOD – JUL – AUG 2019
ACTIVITY – COMPLETE FULL DEPTH PAVEMENT AND RELOCATE BARRIERS TO FACILITATE CONSTRUCTION

STAGE 2 – WEEKEND WORKS UNDER TEMPORARY TRAFFIC CONTROL
(ONE AT A TIME)
WORK PERIOD - MARCH – APRIL 2019
ACTIVITY – RE-ALIGN KERB AND CONSTRUCT FULL DEPTH PAVEMENT; CONSTRUCT PAVED PEDETRIAN THRESHOLDS INCLUDING SW DRAINAGE; BLISTERS; TRAFFIC CONTROL SIGNAL ADJUSTMENTS

STAGE 4 – NIGHT WORKS UNDER TEMPORARY TRAFFIC CONTROL
WORK PERIOD – LATE AUG – EARLY SEPT 2019
ACTIVITY – COMPLETE FINAL WEARING COURSE, MILL AND RESHEET IN CONJUNCTION WITH GEORGE STREET ASPHALT WORKS; LINE MARKING; TRAFFIC CONTROL SIGNAL LOOPS; 2 –WAY TRAFFIC OPERATION TO ENTIRE GEORGE STREET

STAGE 3 – NIGHT WORKS UNDER TEMPORARY TRAFFIC CONTROL
WORK PERIOD - AUG – SEPT 2019 ; CONVERSION TO 2 WAY TRAFFIC OVER A WEEKEND (SUBJECT TO GEORGE ST/HARRIS ST INTERSECTION)
ACTIVITY – NEW LOOP TRAFFIC CONTROL SIGNALS; MILL AND RESHEET; LINEAMRKING AND SIGNAGE ; UPON COMPLETION SWITCH TO 2-WAY TRAFFIC OPERATION OVER A WEEKEND

STAGE 3 – NIGHT WORKS UNDER TEMPORARY TRAFFIC CONTROL
WORK PERIOD - AUG – SEPT 2019 ; CONVERSION TO 2 WAY TRAFFIC OVER A WEEKEND (SUBJECT TO GEORGE ST/HARRIS ST INTERSECTION)
ACTIVITY – NEW LOOP TRAFFIC CONTROL SIGNALS; MILL AND RESHEET; LINEAMRKING AND SIGNAGE ; UPON COMPLETION SWITCH TO 2-WAY TRAFFIC OPERATION OVER A WEEKEND

PORTION 3 WORKS – STAGE 5 – NON CRITICAL WORKS STAGE 5 – DAYWORKS BEHIND BARRIERS
WORK PERIOD – SEPT 2019 – APRIL 2020
ACTIVITY – COMPLETE LANDSCAPING WORKS

O'CONNELL STREET – NORTH OF ALBERT STREET

STAGE 1 – NIGHT WORKS / WEEKEND CLOSURE WITH TEMPORARY TRAFFIC CONTROL (POSSIBLE DAYWORKS)
WORK PERIOD - MID JANUARY 2019 (PENDING APPROVAL, NOTIFICATIONS)
ACTIVITY – ROUNDABOUT AND MEDIAN REMOVAL , TEMPORARY SMALLER ROUNDABOUT LINEMARKED, DEMOLITION OF BUILDINGS

STAGE 2 – DAYWORKS BEHIND BARRIERS WITH NIGHT WORKS/WEEKENDS CLOSURES AS REQUIRED ON INTERSECTIONS (SPECIAL WEEKENDS)
WORK PERIOD - MID JANUARY 2019 - APRIL 2019 (PENDING APPROVAL, NOTIFICATIONS) ; DEMOLITION MID JAN 2019 TO MARCH 2019 OFF ALIGNMENT
ACTIVITY – REMOVE PARKING ALONG BOTH SIDES, BARRIERS PLACEMENT; CLEAR TREES, REMOVE KERB, DEMOLISH FOOTPATH AND STREET FURNITURE, RELOCATE UTILITIES, SW DRAINAGE, KERBS, PAVEMENTS, FOOTPATHS

STAGE 3 – DAYWORKS BEHIND BARRIERS WITH NIGHT WORKS/WEEKENDS CLOSURES AS REQUIRED ON INTERSECTIONS (SPECIAL WEEKENDS)
WORK PERIOD - MAY 2019 - AUG 2019
ACTIVITY – DEMOLISH KERBS, FOOTPATHS, STREET FURNITURE, RELOCATE UTILITIES, SW DRAINAGE, KERBS, PAVEMENTS AND FOOTPATHS

STAGE 4 – DAYWORKS BEHIND BARRIERS
WORK PERIOD - AUG 2019
ACTIVITY – COMPLETE KERB, FOOTPATH AND LANDSCAPING

STAGE 5 – NIGHTWORKS UNDER TEMPORARY TRAFFIC CONTROL
WORK PERIOD - OCT 2019 - NOV 2019
ACTIVITY – CONSTRUCT MEDIANS TO BARNEY , O'CONNELL AND CHURCH STREETS

STAGE 6 – NIGHTWORKS UNDER TEMPORARY TRAFFIC CONTROL
WORK PERIOD - DEC 2019
ACTIVITY – COMPLETE MILL AND RESHEET, CORRECTIVE COURSE, FINAL WEARING COURSE AND LINE MARKING

O'CONNELL STREET/VICTORIA ROAD INTERSECTION

STAGE 1 – NIGHT WORKS / WEEKEND AND CHRISTMAS SHUTDOWN PERIOD CLOSURE WITH TEMPORARY TRAFFIC CONTROL (POSSIBLE DAYWORKS)
WORK PERIOD – 3RD JAN - 7TH JAN 2019 FULL CLOSURE; 7TH JAN TO 14TH JAN 2019 NIGHTWORKS (PENDING APPROVAL, NOTIFICATIONS)
ACTIVITY – COMMS INSTALLATION IN EAST WEST DIRECTION ALONG CROSSING; SEWER INSTALLATION ALONG NORTH SOUTH DIRECTION

STAGE 2 – DAY WORKS BEHIND BARRIERS, NIGHT WORKS / WEEKEND CLOSURE WITH TEMPORARY TRAFFIC CONTROL
WORK PERIOD – JAN 2019 - JUN 2019 (PENDING APPROVAL, NOTIFICATIONS)
ACTIVITY – TREE CLEARING, DEMOLISH KERB AND FOOTPATHS; RELOCATE AND COMMISSION UTILITY SERVICES; SW DRAINAGE CONSTRUCTION, RIGID PAVEMENT, NEW KERB AND FOOTPATH CONSTRUCTION
***WESTERN SYDNEY STADIUM OPEN APRIL 2019**

STAGE 3 – NIGHT WORKS AND WEEKEND CLOSURE WITH TEMPORARY TRAFFIC CONTROL
WORK PERIOD – EARLY APRIL 2019
ACTIVITY – COMPLETE FULL DEPTH PAVEMENT
***WESTERN SYDNEY STADIUM OPEN APRIL 2019**

STAGE 4 – NIGHT WORKS AND WEEKEND CLOSURE WITH TEMPORARY TRAFFIC CONTROL
WORK PERIOD – MID MAY 2019
ACTIVITY – PRIOR TO RESHEETING MEDIAN DEMOLISHING, CONSTRUCT FULL DEPTH PAVEMENT UNDER MEDIAN AND CONSTRUCT NEW KERB AND INFILL MEDIAN
***WESTERN SYDNEY STADIUM OPEN APRIL 2019**

STAGE 5 – NIGHT WORKS UNDER TEMPORARY TRAFFIC CONTROL
WORK PERIOD – END OF MAY 2019
ACTIVITY – MILL AND RESHEET (PAVEMENT WORKS); COMPLETE FINAL WEARING COURSE; NEW LINE MARKING AND SIGNAGE
***WESTERN SYDNEY STADIUM OPEN APRIL 2019**

Appendix A5 Document Register

Appendix A5

Document register

Parramatta Light Rail – Stage 1

October 2020

NSW GOVERNMENT

THIS PAGE LEFT INTENTIONALLY BLANK

Appendix A5 Environmental document register

Environmental management document	Purpose	Document no.	Review timeframe and status
Environmental Policy	Project Requirement Authorise CEMP		
Construction environmental management plan	Policy Legal and other requirements Risk assessment Objectives and targets Roles and responsibilities Communication and training Monitoring, auditing and reporting Corrective action Management review Management actions	PLR-DWJV-PJT-PE-PLN-000001	Review 3 monthly.
Traffic, Transport and Access management Sub Plan	Manage/Mitigate Impacts from Construction Activities	PLR-DWJV-PJT-TM-PLN-000001	6 monthly or as required
Noise and Vibration Management Sub Plan	Manage/Mitigate Impacts from Construction Activities	PLR-DWJV-PJT-NV-PLN-000001	6 monthly or as required
Flood Management Sub Plan	Manage/Mitigate Impacts from Construction Activities	PLR-DWJV-NPA-PE-PLN-000005	6 monthly or as required

Environmental management document	Purpose	Document no.	Review timeframe and status
Heritage Management Sub Plan	Manage/Mitigate Impacts from Construction Activities	PLR-DWJV-PJT-PE-PLN-000003	6 monthly or as required
Air Quality Management. Sub Plan	Manage/Mitigate Impacts from Construction Activities	PLR-DWJV-NPA-PE-PLN-000002	6 monthly or as required
Flora and Fauna Management Sub Plan	Manage/Mitigate Impacts from Construction Activities	PLR-DWJV-NPA-PE-PLN-000001	6 monthly or as required
Soil and Water Management Sub Plan	Manage/Mitigate Impacts from Construction Activities	PLR-DWJV-NPA-PE-PLN-000004	6 monthly or as required
Construction Waste and Resource Management Sub Plan	Manage/Mitigate Impacts from Construction Activities	PLR-DWJV-NPA-WM-PLN-000001	6 monthly or as required
Site Establishment Management Plan	Plan and control environmental impacts	PLR-DWJV-PJT-PM-PLN-000006	6 monthly or as required
Environmental Incident and Emergency Response Procedure	Manage environmental incident reporting and response	PLR-DWJV-NPA-PE-PLN-000006	6 monthly or as required
Contaminated Land Management Sub Plan	Manage and report hazards associated with Contaminated Materials.	PLR-DWJV-NPA-PE-PLN-000003	6 monthly or as required
Environmental Control Map	O'Connell St and Barney St Intersection	PLR-ECM-001	As required
Environmental Control Map	O'Connell St and Factory St Intersection	PLR-ECM-002	As required
Environmental Control Map	O'Connell St and Victoria Rd Intersection	PLR-ECM-003	As required
Environmental Control Map	George St and O'Connell St	PLR-ECM-004	As required

Environmental management document	Purpose	Document no.	Review timeframe and status
Environmental Control Map	Harris St and George St Intersection	PLR-ECM-005	As required
Environmental Control Map	Robin Thomas Reserve Playing Fields Reconfiguration	PLR-ECM-006	As required

Appendix A6 Environmental Control Maps

Note: Environmental Control Map(s) will be endorsed by the Environmental Representative prior to works.

Appendix A7 Environmental Incident and Emergency Response Procedure

Appendix A7

Environmental Incident and Emergency Response Procedure

Parramatta Light Rail – Stage 1 (Enabling Works)

Diona Ward Joint Venture

PLR-DWJV-NPA-PE-PLN-000006

October 2018

NSW GOVERNMENT

THIS PAGE LEFT INTENTIONALLY BLANK

Contents

Contents **3**
Glossary/ Abbreviations **4**
1 Purpose **5**
1.1 Scope of the Environmental Incident and Emergency Response Procedure 5
2 Environmental Incident Management **7**
2.1 Incident Classification 7
2.2 Incident and Emergency Notification and Reporting 8
2.3 Incident Investigation 10
3 Prevention and Containment **12**
3.1 Emergency Preparation and Response 12
4 Compliance Management **17**
4.1 Environmental Emergency Preparedness 17
4.2 Training 17
4.3 Auditing 17
4.4 Reporting 17
5 Review and improvement **18**
5.1 Continuous improvement 18
5.2 Environmental Incident and Emergency Response Procedure Review 18
Appendix A – Incident Classification and Notification Matrix **19**
Appendix B – TfNSW Environmental Incident Classification and Reporting 9TP-PR-105 ..... **21**

Glossary/ Abbreviations

Abbreviations	Expanded text
AQMSP	Air Quality Management Sub Plan
CEMP	Construction Environmental Management Plan
CLMSP	Contaminated Land Management Sub Plan
CoA	Conditions of Approval
DPIE	NSW Department of Planning, Industry and Environment
DWJV	Diona Ward Joint Venture
ECM	Environmental Control Maps
EIERP	Environmental Incident and Emergency Response Procedure
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
FFMSP	Flora and Fauna Management Sub Plan
FMSP	Flood Management Sub Plan
HMSP	Heritage Management Sub Plan
NVMSP	Noise and Vibration Management Sub Plan
POEO Act	*Protection of the Environment Operations Act 1997*
REMM	Revised Environmental Mitigation Measure
SWMSP	Soil and Water Management Sub Plan
TfNSW	Transport for NSW

1. Purpose

The purpose of this procedure is to clearly outline the process to be followed in the event of an environmental incident or non-compliance, including the following:

- Classification of the incident
- Emergency response
- Notification requirements
- Mechanisms for improving environmental controls to reduce the likelihood of a similar incident occurring
- Incident reporting and tracking.

This document has been written to comply with the following requirements:

- *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 Standard Requirements
- Revised Environmental Mitigation Measures
- Conditions of Approval

Table 1.1 provides the REMM and CoA relevant to environmental incident management and where they are addressed in the EIERP.

1.1. Scope of the Environmental Incident and Emergency Response Procedure

Commitment	Reporting Requirements	Reference
CoA 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 2.2 Table 2.2
CoA 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 2.2 Table 2.2

Commitment	Reporting Requirements	Reference
CoA 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 2.2 Table 2.2
CoA C2 (f) i) & ii)	The CEMP must provide: (f) a protocol for managing and reporting any: i) incidents; and ii) non-compliances with this approval and with statutory requirements.	This Procedure
REMM 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.	This Procedure Section 2.1 Section 2.2 Section 5 Section 4.4 Appendix B

2. Environmental Incident Management

2.1. Incident Classification

The Environmental Manager is responsible for reporting, investigation and managing close out of all environmental incidents/non-compliances.

The following defines an Environmental Incident and Non Compliance:

- An **Environmental Incident** is 'an occurrence or set of circumstances, as a consequence of which pollution (air, water, noise or land) or an adverse environmental impact has occurred, is occurring or is likely to occur. Adverse environmental impact includes contamination, harm to flora and fauna (either individual species or communities), damage to heritage items and adverse community impacts'
- An **Environmental non-compliance** is 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.

As defined in the Definitions section to the *POEO Act* and in Section 147 of the POEO Act, respectively:

- A **Pollution Incident** is 'An incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise'
- **Material Harm to the Environment:**

  Harm to the environment is material if:

  2.1.1. it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

  2.1.2. it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

  2.1.3. 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.

  The severity of the incident is dependent on the outcome or possible outcome. The DWJV Incident Classification and Notification Matrix (Appendix A) will be used to determine the incident notification and investigation procedure to be followed, note all contact details will be provided on the onsite matrix also captured on the relevant project specific ECM. Below is the incident classification assessment taken from the DWJV Incident Classification and Notification Matrix.

Table 2-1- Incident Severity

Incident Severity	
Severity	**Environment**
Level 1 **Actual or Potential**	Marginal environmental impact
Level 2 **Actual or Potential**	Environmental impact is minor
Level 3 **Actual or Potential**	Temporary environmental impact
Level 4 **Actual or Potential**	Substantial environmental impact with offsite release, rectification is difficult
Level 5 **Actual or Potential**	Highly significant environmental impact, reportable to regulator

2.2. Incident and Emergency Notification and Reporting

All environmental incidents (including potential incidents) will be reported internally within DWJV as per Incident Classification and Notification Matrix (Appendix A). The incident assessments will be made to determine the classification and level of the incident and the timing in which it should be done.

Following determination, the incident will be reported to TfNSW in accordance with section 6 of the *TfNSW Environmental Incident Classification and Reporting 9TP-PR-105* which includes requirements for verbal notification, recording the incident in the INX system and notification to the regulatory authority for a notifiable event, and EPA in the case of a notifiable pollution incident.

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

- DWJV will provide a verbal notification to the TfNSW Representative of any incident or issue as soon as practical and within one hour
- DWJV will report all incidents using the *InControl Incident Management System (INX)* as soon as possible, and no later than 8 hours after the occurrence of the Incident or Issue. Additional details of the incident are to be recorded in the INX system within 48 hours of the incident/non-compliance first being observed. Should INX not be accessible, the DWJV must report in a manner that enables effective and subsequent recording into INX.
- Where an incident involves an Aboriginal site, relevant Registered Aboriginal Parties will be notified and their input sought in closing out the incident.

2.2.1 Reporting pollution incidents to EPA and other authorities

If an incident or non-compliance is a notifiable event, then a report must be provided to the relevant regulatory authority within the timeframe(s) specified by the relevant legislation. For notifiable events other than pollution incidents DWJV will confirm with TfNSW on whether the notification is to be made by TfNSW or the DWJV.

Pollution incidents which are causing or threatening material harm to the environment must be reported to each of the following authorities immediately after becoming aware of the incident, as required by Section 148 of the *POEO Act*. The contact details for these authorities are provided in Table 2-2:

Table 2-2– Authority contacts

Authority	Contact Details
EPA	131 555 (All contact with EPA is to be made by TfNSW)
Fire and Rescue NSW	000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
The Ministry of Health	(02) 9840 3603
SafeWork NSW	131 050
City of Parramatta Council	Contact with City of Parramatta Council to be made via TfNSW
24 hour community information line	1800 139 389
NSW Dept. of Planning	In line with CoA 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.

Note: If the situation warranted calling 000 as a first point of notification, you do not need to ring Fire and Rescue NSW again.

DWJV will notify TfNSW in writing to confirm that DWJV understands that TfNSW is to notify in accordance with the requirements of Section 148 of the POEO Act.

2.2.2 Additional Agency notification and reporting requirements

DPIE have a number of additional notification and reporting requirements outside of those listed in *TfNSW Environmental Incident Classification and Reporting 9TP-PR-105*. This procedure is included in Appendix B of this procedure. Table 2-3 provides the additional reporting requirements and their responsibility following an incident or non conformance. In most instances TfNSW will provide the report to DPIE with the DWJV providing support and information.

Table 2-3: CoA Reporting requirements

CoA	Reporting Requirements	Responsibility
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.	TfNSW with support from DWJV
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.	TfNSW with support from DWJV
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.	DWJV with support from TfNSW
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.	TfNSW with support from DWJV

2.3. Incident Investigation

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

- The DWJV will undertake a preliminary investigation of all minor incidents within 5 Business Days of the Incident, unless otherwise agreed by the Representative. Major investigations must be completed within 20 Business Days of the Incident. Terms of reference for major investigations will be issued by the Principal. If the Representative requires the appointment of an external independent investigator, the DWJV will bear the cost of that appointment
- TfNSW may participate in any investigation being undertaken by the DWJV or initiate its own investigation. If the TfNSW instigates its own investigation the DWJV must provide the 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, the DWJV. The parties may agree that any investigation report that is subject to legal professional privilege may, between the DWJV and the TfNSW, be subject to a common interest privilege
- In the event of an Incident or Issue, the DWJV must 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. The DWJV must make available senior personnel to respond to the community, the media and other stakeholders when required by the Principal.

Mechanisms for improving environmental controls to reduce the likelihood of a similar incident reoccurring will be identified during the incident investigations and will be closed out in accordance with Section 7.6 of the CEMP.

3. Prevention and Containment

3.1. Emergency Preparation and Response

The environmental emergencies listed in Table 3-1 have been identified as a potential to occur during the Project, and mitigation measures (response) prepared for each potential event.

Table 3-1: Potential Environmental Emergencies

Emergency	Preparation	Response	Responsibility
Significant adverse dust event due to weather conditions: High winds	• Refer AQMSP • Monitor meteorological conditions for the area • High wind 'stop works' protocols in place • Establish contingency strategy for additional dust control measures, additional water carts, dust suppressants, stockpile covers etc.	• Dust generating activities will cease under direction of the Environment Manager or Site Supervisor until adverse conditions subside. • Deploy additional mitigation measures to exposed areas stockpiles and other dust generating items will be water sprayed or covered.	Site Supervisor Environment Manager
Discovery of asbestos.	• Refer CLMSP • Review previous land uses, environmental reports for potential for friable asbestos. • Include asbestos awareness in the site induction where the potential exists • Include contingency in relevant work procedures and SWMSs • Identify potential service providers for asbestos control and removal.	• Quarantine suspected area • Cover or provide dust mitigation strategy • Record incident in the INX as a safety incident • Engage licensed/approved removal and disposal organisation • Complete post removal verification	Site Supervisor Environment Manager Safety Manager

Emergency	Preparation	Response	Responsibility
Flooding	• Refer FMSP • 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 Environment Manager
Temporary erosion and sediment controls are damaged during rainfall.	• Refer SWMSP • 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 Environmental Manager and Site Supervisor. • Controls to be repaired or replaced within appropriate timeframes.	Site Supervisor Environment Manager

Emergency	Preparation	Response	Responsibility
Spill of hazardous or toxic substance	• Refer CLMSP • Awareness training of appropriate response and procedures to be incorporated into Project Induction • SDS 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/fire brigade prominently displayed around office and issued to supervisors	• Report spills immediately to Site Manager • Attempts to be made to limit or contain the spill using sand bags 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. • 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 Environment Manager
Vibration causing structural damage	• Refer NVMSP • Choose correct plant when working near structures; minimise size and impact • Use 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 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 associated with construction, rectification work would be agreed.	Environment Manager

Emergency	Preparation	Response	Responsibility
Unapproved clearing / damage to protected vegetation – threatened/endangered species	• Refer FFMSP • 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 Environment Manager
Injury/death to protected/endangered/threatened fauna	• Refer FFMSP • 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 • Site procedure for the short-term management of injured fauna	• Immediately cease activities upon discovery of injured fauna • Implement procedure for short-term stabilisation and transport to Vet or WIRES • Undertake additional vegetation inspection to identify any remaining fauna prior to recommencement.	Site Supervisor Environment Manager

Emergency	Preparation	Response	Responsibility
Damage / destruction of indigenous/European heritage item	• Refer HMSP • 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 Environmental Manager or Site Supervisor. The Environmental Manager is to report the remnants to the client and regulatory authority. • Request an archaeologist to assess the significance and archaeological potential of the uncovered feature.	Environment Manager

Refer also to the Environmental Risk Assessment included in Appendix A2 of the CEMP.

4. Compliance Management

4.1. Environmental Emergency Preparedness

The key to effective prevention of environmental incidents/non-compliances is monitoring, surveillance and training. During construction activities, inspections and preventative actions will include:

- Regular inspections of construction areas and the surrounding environment
- Identification of potential and actual environmental issues / non-compliances
- On-going environmental training.

Environmental and safety information on hazardous materials (for e.g. Safety Data Sheets (SDSs) will be available at the site compound/designated chemical storage areas. Spill kits and other emergency supplies (i.e. sand bags and silt fence equipment) will also be made available.

4.2. Training

All Personnel shall be provided with general Emergency Management Training as part of the induction process, and such training shall cover as a minimum:

- The locations of all emergency equipment and the correct method for its use.
- Spill risk awareness to encourage awareness of the dangers presented by spills and the means for preventing it.
- Notification requirements and key personnel.

To ensure that the EIERP is implemented effectively in the event of an incident, the training and testing program shown in Table 4-1 will be implemented.

Table 4-1:Training and Testing Program

Focus	Timing	Key Personnel
EIERP desktop test / Emergency Drill	Annually	• Project Director • Environment Manager • Construction Manager • Project Superintendent • Safety Manager • Community Consultation Manager

4.3. Auditing

Audits (both internal and Independent) will be undertaken to assess the effectiveness of environmental controls, compliance with this sub plan, CoA and other relevant approvals, licenses and guidelines.

The Audit program and scope details are provided in Section 7.4 of the CEMP.

4.4. Reporting

Reporting requirements and responsibilities are summarised in section 2.2 of the EIERP and detailed in the *TfNSW Environmental Incident Classification and Reporting 9TP-PR-105* which is

included in Appendix B of this procedure.

5. Review and improvement

5.1. Continuous improvement

Continuous improvement of this Procedure will be achieved by the 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-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances 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.

5.2. Environmental Incident and Emergency Response Procedure Review

This procedure will be reviewed and updated in accordance with chapter 8 of the CEMP.

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

A copy of the updated procedure and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to Chapter 9 of the CEMP.

Appendix A – Incident Classification and Notification Matrix

Instructions:

1. Determine incident severity
2. Read across the table to determine required actions and timeframes
3. Read down the column to determine who is responsible for the action and who to notify

Incident Severity		Incident Occurs	Immediately		Within 1 hour Post Incident	Within 8 hours	Within 24 hour	Within 5 days		Within 20 days	
Severity	Environment	Provide care to the injured (DRSABCD) (if required) & control scene. Notify supervisor	Notify Senior Project Manager and Environmental Manager	Notify Operations Manager, HSEQ Manager	Notify Client	Enter Incident into INX	Notify Regulator and Accreditation Bodies (if required)	Complete and submit Incident Investigation Report for approval by Senior Management	Submit Approved report to Client	Complete and submit Incident Investigation Report for approval by Senior Management	Submit Approved report to Client
Level 1 Actual or Potential	Marginal environmental impact		Supervisor	Senior Project Manager	Senior Project Manager	Environmental Manager		Senior Project Manager (Minor Incident Investigation Form)	Senior Project Manager		
Level 2 Actual or Potential	Environmental impact is minor		Supervisor	Senior Project Manager	Senior Project Manager	Environmental Manager	Environmental Manager	Senior Project Manager (Minor Incident Investigation Form)	Senior Project Manager		
Level 3 Actual or Potential	Temporary environmental impact		Supervisor	Senior Project Manager	Senior Project Manager	Environmental Manager				Senior Project Manager (Major Incident Investigation Form)	Senior Project Manager
Level 4 Actual or Potential	Substantial environmental impact with offsite release, rectification is difficult		Supervisor	Senior Project Manager	Senior Project Manager	Environmental Manager	Environmental Manager			Senior Project Manager (Major Incident Investigation Form)	Senior Project Manager
Level 5 Actual or Potential	Highly significant environmental impact, reportable to regulator		Supervisor	Senior Project Manager	Senior Project Manager	Environmental Manager	Environmental Manager			Senior Project Manager (Major Incident Investigation Form)	Senior Project Manager
		Supervisor	Senior Project Manager	Operations Manager	Client	Environmental Manager	SafeWork NSW 13 10 50	Chief Operations Officer	Client	Chief Operations Officer	Client
		Project Engineer	Environmental Manager	HSEQ Manager			EPA 13 15 55	Operations Manager		Operations Manager	
								HSEQ Manager		HSEQ Manager	

Appendix B – TfNSW Environmental Incident Classification and Reporting 9TP-PR-105

Environmental Incident Classification and Reporting

9TP-PR-105/18.0

Procedure – Applicable to Infrastructure and Services

Divisional Management System

Status:	Approved
Version:	18.0
Branch:	Planning and Environment Services
Business unit:	Environmental Management
Date of issue:	20 December 2017
Review date:	20 December 2018
Audience:	Project Delivery/External TSR
Asset classes:	☒ Heavy Rail; ☒ Light Rail; ☒ Multi Sites; ☒ Systems; ☒ Fleets
Project delivery model:	I&S Project/Alliance/Novo Rail
Project type:	Not Applicable
Project lifecycle:	☐ Feasibility; ☐ Scoping; ☐ Definition; ☒ Construction readiness; ☒ Implementation; ☒ Finalisation; ☐ Not applicable
Process owner:	Director Planning and Environment Services

Document history

Version	Date of approval	Desksite no.	Notes
3.0	August 08	631781	
4.0	23 Dec 09	696779_4	This document is updated to reflect the new document owner.
5.0	13 Aug10	867157	Reformatted for TCA transition and revised governance structure.
6.0	01 Oct 11	835272	This document is updated to include Incident classification Legislative requirements Incident and non-compliance reporting procedure.
7.0	21 Oct 11	867157_9	Definitions and Environmental Incident Sections – amend definition of environmental incident to read"…impact has occurred, is occurring, or is likely to occur." This is consistent with POEO Act. 6.2 – update to reflect changes to SA-FO-002 6.3 – remove "or a contract/alliance-specific report form that is consistent with 9TP-FO101." 7 – update title of SA-FO-002
8.0	1 Nov 11	867157_12	Reformatted for Transport Projects transition and revised governance structure.
9.0	2 Feb 12	1750099_1	Updated to include new legislative requirements as a result of changes to the Protection of the Environment Operations Act 1997.
10.0	1 Aug 12	867157_22	Revised section 6 and figure 1 of the document to reflect the use of the Incident Management System in incident/non-compliance reporting.
11.0	21 Mar 14	867157_23	A paragraph on incidents related to the discovery of asbestos is added to clarify that such incidents are to be reported as safety incidents in the INX.
12.0	29 May 14	867157_25	Inclusion of incident investigation process and root cause analysis.
13.0	14 Apr 15	867157	Updated to be published to TfNSW website
14.0	28 Apr 16	867157_31	Updated to reflect for I&S transition and revised governance structure.
15.0	15 Nov 16	867157_33	Re-branded to I&S (cover page only)
16.0	27 Sep 17	867157_35	Flowchart updated to reflect position title change. Dead hyperlink removed.
17.0	17 Nov 17	867157_37	The name of the system updated to INX.
18.0	20 December 2017	867157_39	IMS is replaced by INX System in Figure 1 & 2.

Table of contents

1. Purpose and scope 4
2. Accountabilities 4
3. Definitions and acronyms 4
4. Legislative requirements 5
4.1. Notifiable events 5
5. Incident classification 6
5.1. Environmental incident 6
5.2. Environmental non-compliance 7
5.3. Environmental issue 7
6. Incident and non-compliance reporting 8
6.1. Verbal notification 8
6.2. Incident reporting 8
6.3. Notification to regulatory authorities 9
6.4. Reporting pollution incidents to EPA and other authorities 9
6.5. Incident investigations 10
6.5.1. Incident investigation 10
6.5.2. Root cause analysis 11
6.6. Relationship to I&S Crisis Management Procedure 11
7. Related documents and references 11
Appendix 1 Root Cause Analysis Checklist 15

1. Purpose and scope

The purpose of this document is to identify the process and procedure to be followed when classifying and reporting an environmental incident or non-compliance that has occurred during work being undertaken by, or on behalf of, Infrastructure and Services (I&S) and defines I&S standard.

This procedure applies specifically to the reporting of environmental incidents and non-compliances to I&S and relevant regulatory authorities, particularly the NSW Environment Protection Authority. It does not provide guidance on management responses or corrective actions required in response to those incidents, which should be detailed in the relevant environmental management plan or other management document as required for the project.

2. Accountabilities

The Director Planning and Environment Services is accountable for this Procedure. Accountability includes authorising the document, monitoring its effectiveness and performing a formal document review.

Project directors are accountable for ensuring the requirements of this document are implemented within their area of responsibility.

Project directors who are accountable for specific projects/programs are accountable for ensuring associated contractors comply with the requirements of this document where required under TfNSW Standard Requirements (TSR).

Contractors are accountable for compliance with this document, where this document forms a part of their contract.

3. Definitions and acronyms

All terminology in this procedure is taken to mean the generally accepted or dictionary definition with the exception of the following terms which have a specifically defined meaning:

ADEM	Associate Director Environmental Management
Environmental incident	An environmental incident is an occurrence or set of circumstances, as a consequence of which pollution (air, water, noise, or land) or an adverse environmental impact has occurred, is occurring, or is likely to occur. Adverse environmental impact includes contamination, harm to flora and fauna (either individual species or communities), damage to heritage items and adverse community impacts.
Environmental non-compliance	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 issue	Any occurrence or set of circumstances that has the potential to cause or lead to an environmental incident or non-compliance if not rectified.
EM	Alliance/contractor environmental manager
EMR	Environment management representative
EPA	NSW Environment Protection Authority
EPL	Environment protection license
EPM	Environment and planning manager

ERM	Event report manager
INX	INX system
Investigation	The process by which the cause(s) of an incident, non-compliance, issue or event is examined and identified.
Material harm to the environment	Has the meaning as defined in Section 147 of the POEO Act. Harm to the environment is material if: (i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or (ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and 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.
Moderator	Person assigned with a lead role under an incident investigation, to determine it's scope etc.
Notifiable event	Any environmental incident or non-compliance that triggers a specific statutory requirement to notify a regulatory authority.
PD	I&S Project director
PM	Alliance/contractor project manager
POEO Act	*Protection of the Environment Operations Act 1997*
Pollution	Pollution, air pollution, water pollution, noise pollution and land pollution all have the meanings as defined in the Dictionary to the POEO Act.
Pollution incident	Has the meaning as defined in the Dictionary to the POEO Act: an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.
SME	I&S Senior Manager Environment
TfNSW	Transport for New South Wales
TSR	TfNSW Standard Requirement

4. Legislative requirements

There are a number of Acts and Regulations that include a specific requirement to notify a regulatory authority as a result of pollution, contamination or environmental harm occurring, including impacts to heritage items. Infrastructure and Services (I&S) has defined such incidents as notifiable events.

4.1. Notifiable events

A notifiable event is:

> Any environmental incident or non-compliance that triggers a specific statutory requirement to notify a regulatory authority.

For further guidance on the statutory requirements for the notification of environmental harm or pollution refer to the I&S EMS document Environmental Legislation Summary – 2TP-SD-090 . Some event types are summarised in Table 1 below.

Table 1 Examples of notifiable events

Event type	Legislation		Notification to
Pollution incident	POEO Act	Part 5.7	Immediately after becoming aware of the incident to each relevant authority: • EPA Environment Line • Local Council • Ministry of Health (via the Local Public Health Unit) • WorkCover Authority • Fire and Rescue NSW
	POEO (General) Regulation 2009	Section 101	
Land contamination	*Contaminated Land Management Act 1997*	Section 60(1)	EPA in writing as soon as practicable after becoming aware of the contamination, where required as prescribed in the EPA 'Guidelines on the Duty to Report Contamination under the *Contaminated Land Management Act 1997*'
Discover aboriginal relic	*National Parks and Wildlife Act 1974*	Section 89A	Director-General of the Department of Premier and Cabinet in writing within a reasonable time after becoming aware
Discover Aboriginal Remains	Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*	Section 20	Commonwealth Minister of Environment in writing as soon as practicable after becoming aware
Discover relic	*Heritage Act 1977*	Section 146	Heritage Council in writing within a reasonable time after becoming aware

Further information on reporting pollution incidents to EPA is provided in section 6.4.

5. Incident classification

5.1. Environmental incident

Infrastructure & Services has defined an environmental 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.

Adverse environmental impact includes contamination, harm to flora and fauna (either individual species or communities), damage to heritage items and adverse community impacts.

Table 2 Examples of environmental incidents

Type	Example incident
Air	Odour that travels beyond the site boundary
Air	Dust exceeding reasonable levels without active management measures in place

Type	Example incident
Air	Operation or maintenance of plant in a manner that causes or is likely to cause air pollution
Water	Discharge of water on or off site in a manner that causes or is likely to cause water pollution
Noise	Noise that travels beyond the site boundary as a result of poorly maintained plant or operation of plant in an inefficient manner
Noise	Failure to comply with the approved hours of work
Land	Cause any substance to leak, spill or otherwise escape (whether or not from a container) in a manner that harms or is likely to harm the environment
Land	Spill/deposit material or allow material to be deposited on land in a manner that causes or is likely to cause land pollution
Land	Cause contamination of land
Land	Dispose of waste in a manner that harms or is likely to harm the environment
Flora/ Fauna	Harm or “pick” a threatened species, endangered population or endangered ecological community
Flora/ Fauna	Damage to vegetation, fauna or habitat including watercourses
Heritage	Damage, disturbance, destruction or works to heritage items/relics
Heritage	Damage, disturbance, or destruction of Aboriginal objects or places

Note: an environmental incident may also be an environmental non-compliance.

5.2. Environmental non-compliance

An environmental non-compliance is a non-compliance with any condition of approval, license condition or any other statutory approval relevant to the activity and/or area where the activity occurs.

Examples of environmental non-compliances are given in the Table 3 below.

Table 3 Examples of environmental non-compliance.

Example non compliance
Works without the required planning approval
Failure to comply with a condition of approval
Works without the required EPL
Failure to comply with an EPL condition
Works undertaken without any other required statutory approval
Failure to comply with any other statutory requirement that does not result in an adverse environmental impact or pollution

Note: an environmental non-compliance is not necessarily an environmental incident.

5.3. Environmental issue

An environmental issue is any occurrence or set of circumstances that has the potential to cause or lead to an environmental incident or non-compliance if not rectified.

Environmental issues may be identified during formal or informal inspections undertaken by an alliance, contractor, I&S employee or environmental management representative/environmental representative. Issues identified during inspections (i.e. those conducted by I&S employees or representatives) should be documented using the form: Environmental Site Inspection Report Template – 9TP-FT-307.

For any issues raised, a priority is to be given for action to be implemented, in accordance with the following:

Priority	Action required
Immediate	Immediately and closed out on day of inspection
High	Within 24 hours
Medium	Within 3 working days
Low	Within 5 working days
Other	By the date noted

If any issues raised during an inspection are also considered to constitute an environmental incident and/or non-compliance then this must be noted on the inspection report, including reference to then relevant condition of approval or other requirement. Any such incidents or non-compliances must also be reported separately in accordance with Section 6.

6. Incident and non-compliance reporting

All environmental incidents and non-compliances must be reported to I&S. The environmental incident/non-compliance reporting procedure is illustrated in Figure 1, which includes requirements for verbal notification, recording the incident in the INX system and notification to the regulatory authority for a notifiable event, and EPA in the case of a notifiable pollution incident.

The Environmental Incident/Non-compliance Report – 9TP-FT-101 may be used for reporting in the following circumstances:

- where access to the INX system is not available
- for reporting non-compliances that do not require reporting in the INX system.

6.1. Verbal notification

The I&S EPM and project manager must be notified verbally immediately after the alliance/contractor becomes aware of the incident or non-compliance. The EPM or SME should provide advice to the alliance/contractor on the classification of the incident/non-compliance and whether notification to any regulatory authority is required.

6.2. Incident reporting

Environmental incidents must be reported to I&S within 4 hours of occurring or first being observed. The INX system is accessed via https://tfnsw.inxsoftware.com . Additional details of the incident are to be recorded in the INX system within 48 hours of the incident/non-compliance first being observed. Step by step guidance on how to use the INX system is provided in the I&S document Guide to Environmental Incident and Non-compliance Reporting – Using the INX System – 9TP-SD-005.

The event moderator (generally the SME) shall review the details and assign the incident to the EPM and/or relevant contractor's personnel (generally their environmental manager) to

manage the incident and complete the preventative/follow-up actions and investigation. Details and completion dates of the actions are to be recorded by the SME and/or EPM and/or the contractor's personnel who have been assigned the incident/non-compliance in the INX system. The alliance/contractor shall input details and findings for the incident investigation in the INX system if required. The SME shall review the report and close the incident when all the actions are completed.

For an incident related to the discovery of asbestos, the incident is to be recorded in the INX as a safety incident.

A senior safety officer is to assign the incident to both the EPM and the safety officer of the project in order to manage both the safety and environmental aspects of the incident and any associated actions (see Figure 2 on page 14). It is the senior safety officer's responsibility to close the incident if all actions are completed.

6.3. Notification to regulatory authorities

If an incident or non-compliance is a notifiable event then a report must be provided to the relevant regulatory authority within the timeframe(s) specified by the relevant legislation. For notifiable events other than pollution incidents the alliance/contractor should seek advice from I&S on whether the notification is to be made by I&S or the alliance/contractor.

Requirements for reporting pollution incidents to EPA and other authorities are identified below in Section 6.4.

6.4. Reporting pollution incidents to EPA and other authorities

Pollution incidents which are causing or threatening material harm to the environment must be reported to each of the following authorities immediately after becoming aware of the incident, as required by Section 148 of the POEO Act. The contact numbers for these authorities are:

- EPA Environment Line 131 555
- Local Authority Local Council (specific to area)
- Ministry of Health Public Health Unit via 1300 066 055
  (full local area contact details are available on the Public Health Units pages of the NSW Health website)[1]
- Workcover Authority 131 050
- Fire and Rescue NSW 1300 729 579

Note: If the situation warranted calling 000 as a first point of notification, you do not need to ring Fire and Rescue NSW again.

Relevant information required to be given to EPA when making a notification is specified in Section 150 of the POEO Act as follows:

(a) the time, date, nature, duration and location of the incident

(b) the location of the place where pollution is occurring or is likely to occur

(c) the nature, the estimated quantity or volume and the concentration of any pollutants involved

[1] http://www.health.nsw.gov.au/Infectious/Pages/phus.aspx

(d) the circumstances in which the incident occurred (including the cause of the incident, if known)

(e) the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution

(f) other information prescribed by the regulations.

You are required to report the information known at the time of making the notification. If the information required by (c), (d) or (e) above is not known at the time of initial notification but becomes known afterwards it must be reported to each authority immediately after it becomes known. Verbal notification must be followed by notification in writing within 7 days of the date on which the incident occurred.

You are not required to report a pollution incident if:

(a) you are aware that the incident has already come to the notice of each of the notification authorities

(b) the incident is an ordinary result of action required to be taken to comply with an environment protection licence, an environment protection notice or other requirement of or made under the POEO Act

(c) the pollution incident involves only the emission of an odour.

Failure to report a pollution incident as required by the POEO Act is an offence.

Where any work or activity is regulated by an EPL, notification of a pollution incident must be made by the licensee. Thus, where the alliance/contractor holds the EPL for the project, notification shall be made by the alliance/contractor.

For any work or activity that is not regulated by an EPL, notification of pollution incidents to EPA shall be made by I&S, unless the alliance/contractor is instructed otherwise by I&S. This includes pollution incidents that occur as a result of pre-construction activities which may be undertaken prior to an EPL being required for a project. Pre-construction activities are determined by the planning approval and may include, for example, geotechnical investigations, surveys or fencing.

6.5. Incident investigations

Incident investigation should be completed for all environmental incidents logged in the INX system. The scope of the investigation is determined by the moderator of the incident in the INX system.

6.5.1. Incident investigation

Incident investigation is to be completed using the Investigation tab in the INX system, with reference to any investigation reports, attached using the document tab. The Investigation tab includes four sections.

1. Sequence of events

   This section is to record the sequence of events that led to the incident.

2. Findings

   Given the sequence of events, what are the key findings of the investigation (i.e. what are the main causes of the incident).

3. Management methods

Used to record the management methods to be changed and/or implemented to avoid the incident reoccurring.

4. Key learnings

What can we learn from this investigation into the incident? Are there any elements of this incident investigation that can be or need to be shared with other projects or the wider I&S as a Lessons Learned process, environmental alert or similar?

Further guidance is provided in Guide to Environmental Incident and Non-compliance Reporting – using the INX System – 9TP-SD-005

6.5.2. Root cause analysis

Root cause analysis must be undertaken for incidents with a risk rating of high and above, and for other lower risk incidents where determined by the incident moderator. The Root Cause Analysis Checklist is presented in Appendix 1 and is located as a template checklist in the Procedures section of the INX system.

The Root Cause Analysis Checklist is designed to assist in the identification of the causal factors that contributed to the incident and provides the information to be included in the Findings section of the Investigation tab.

When this template is completed it must be attached to the Document tab of the INX system.

Further guidance is provided in Guide to Environmental Incident and Non-compliance Reporting - using the INX System – 9TP-SD-005.

6.6. Relationship to I&S Crisis Management Procedure

- Incidents which are likely to cause major damage to the environment will be managed in accordance with the Significant Incident Management Procedure - I&S Delivered Infrastructure & Fleet Projects 1TP-PR-008. Determination of whether the environmental incident requires the activation of a crisis management team will be made by I&S in accordance with the assessment process and activation/escalation triggers identified in Sections 6.1-6.3 of the Crisis Management procedure.

7. Related documents and references

Related documents and references
Environmental Management System Manual – 1TP-ST-052
Environmental Site Inspection Report Template – 9TP-FT-307
Environmental Incident/Non-compliance Report – 9TP-FT-101
Guide to Environmental Incident and Non-compliance Reporting – using the INX System – 9TP-SD-005
Safety and Environmental Incident Report 90-FT-002
Significant Incident Management Procedure - I&S Delivered Infrastructure & Fleet Projects 1TP-PR-008
Environmental Legislation Summary – 2TP-SD-090
EPA 'Guidelines on the Duty to Report Contamination under the *Contaminated Land Management Act 1997*'

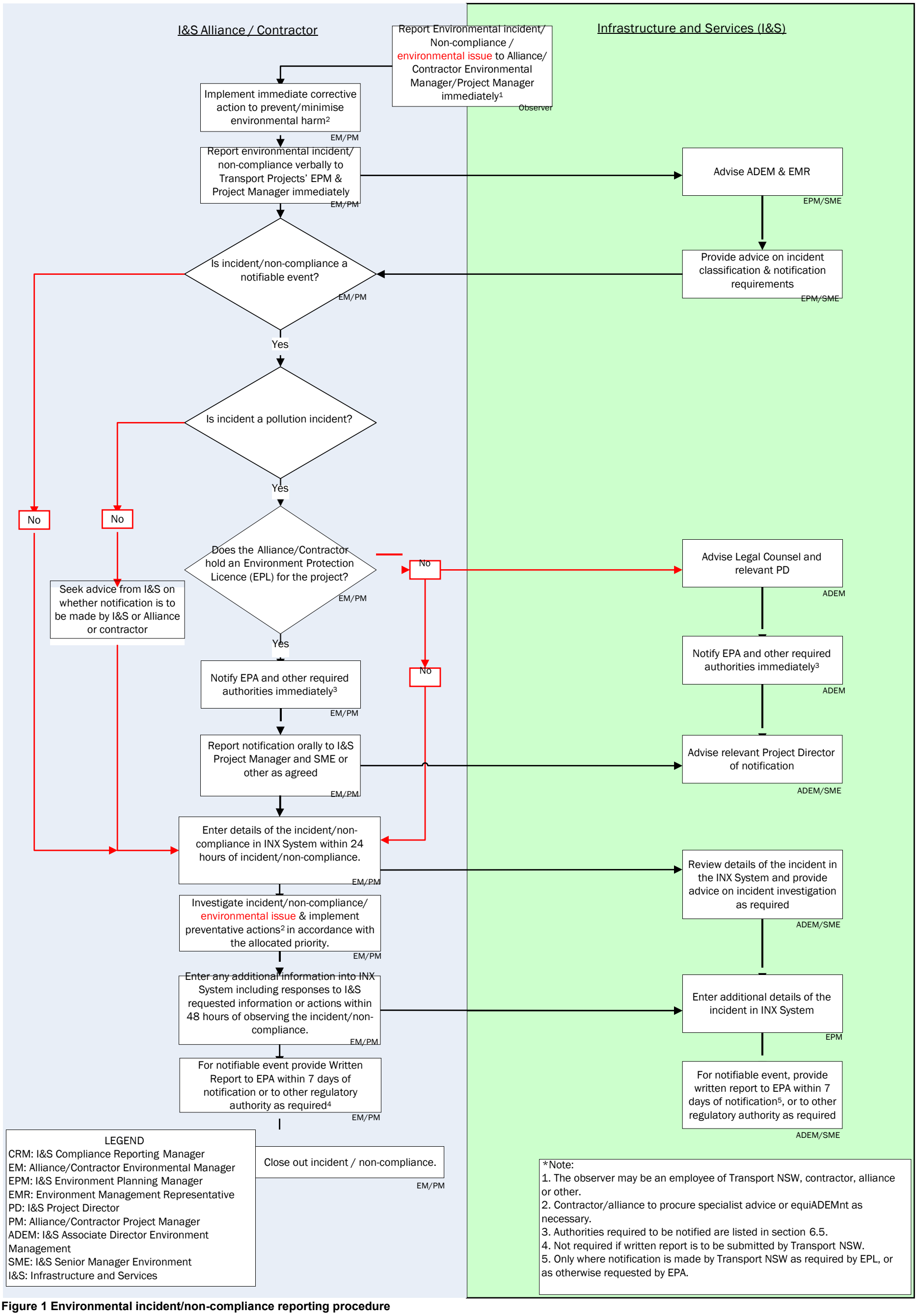


Figure 1 Environmental incident/non-compliance reporting procedure

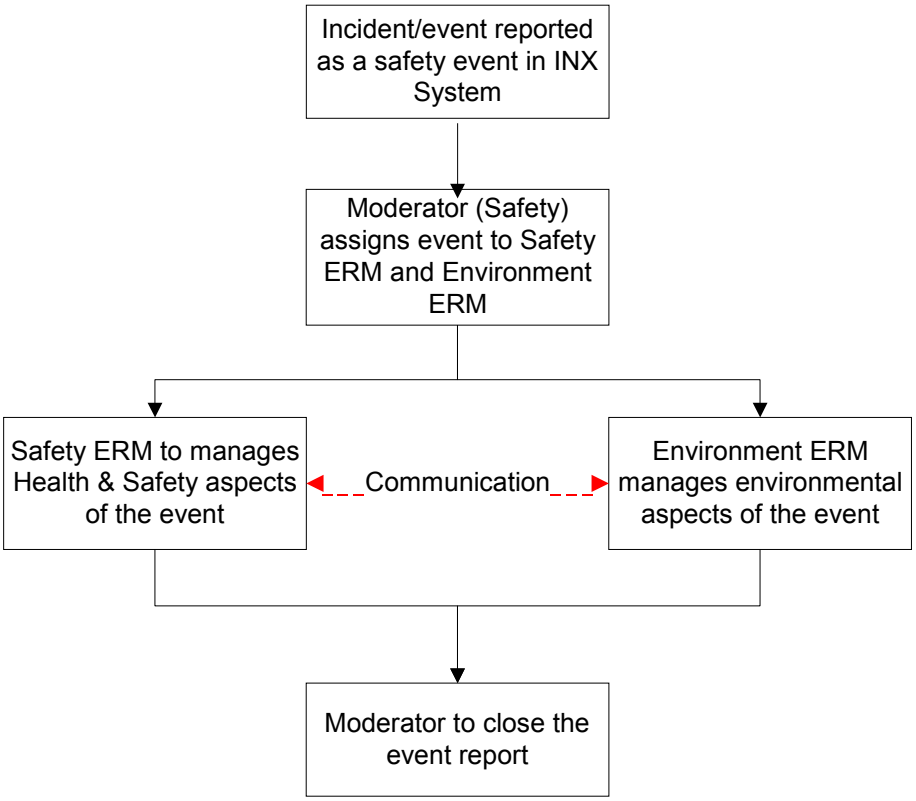


Figure 2 Reporting asbestos find process

Appendix 1 Root Cause Analysis Checklist

Environmental factors / work site description (Tick all that apply)					
A description of the immediate and surrounding environment that are contributing factors to the incident or event					
Sensitive receptors / receiver	☐	High winds	☐	Vibration	☐
Lighting/ light levels	☐	Snow / Ice	☐	Noise	☐
Surface water / storm water or natural drainage	☐	Rain	☐	Vegetation or ecology	☐
Groundwater	☐	Heat/humidity	☐	Fauna or fauna habitat	☐
Geology and soils	☐	Slippery surface	☐	Trip hazard	☐
Access and transport	☐	Signage	☐	Other (specify)	☐
Specifically describe how the factor contributed to the occurrence.					

Equipment / tools (Tick all that apply)					
Identify what equipment was being used and how it contributed to the incident occurrence					
Type of equipment 1 (Specify make and model)	☐	Type of equipment 2 (Specify make and model)	☐	Type of equipment 3 (Specify make and model)	☐
Equipment malfunction	☐	Inappropriate equipment	☐	Pre-operation checks	☐
Faulty equipment	☐	Maintenance schedule	☐	Incorrect use	☐
Instruction/training on use on equipment	☐	Safety device bypassed / lack of guarding	☐	Unsafe equipment use	☐
Operated beyond specifications	☐	Difficult to use	☐	Not trained on equipment	☐
Inappropriate / inadequate storage or stowage	☐	Design / controls site layout problem	☐	Operator not familiar with equipment	☐
Other (specify)					

Specifically describe how the factor contributed to the occurrence

Communication and training (Tick all that apply)					
Identify what training, information and communication occurred or did not occur that contributed to the incident					
Appropriate formal training	☐	Refresher training	☐	Pre start briefing or tool box talk	☐
Shift debriefing / handover	☐	Risks and hazards identified / communicated	☐	Induction	☐
Confusing message	☐	Incomplete message	☐	Hand signals	☐
Language barrier	☐	Accent difficulties	☐	No communication	☐
Communication method / type	☐	Speech issues	☐		
Other (specify)					
Specifically describe how the checked factor contributed to the occurrence					

Procedures / task instructions (Tick all that apply)					
What procedures applied to the task, were they appropriate and were they understood and followed?					
Procedure not correct for task or non existent	☐	Procedure not documented	☐	Procedure not communicated	☐
Deviated from procedure	☐	Procedure not trained	☐	Procedure or training not reinforced	☐
Not familiar with procedure	☐	Procedure / Task too difficult	☐	New procedure or task or recent task change	☐
Failed to plan for task	☐		☐	Other (specify)	☐
Specifically describe how the checked factor contributed to the occurrence (point form) (mandatory if box ticked)					

Individual factors (Tick all that apply)					
Fatigue	☐	Stress	☐	Peer pressure	☐
Body size or strength	☐	Personal event	☐	Workplace distraction / interruption	☐
Memory lapse (forgot)	☐	Situational awareness (failed to identify hazard or risk)	☐	Time constraints	☐
Failure to adhere to policies or procedures	☐	Job / task experience	☐	Physical health / medical condition (hearing / sight / other)	☐
Other (specify)	☐				
Specifically describe how the checked factor contributed to the occurrence (point form) (mandatory if box ticked)					

Leadership / supervision (Tick all that apply)					
Identify what leadership or supervision factors were relevant or contributed to the incident occurrence					
Planning / organisation of task	☐	Prioritisation of task	☐	Delegation of task	☐
Unrealistic attitude or expectation	☐	Amount or availability of supervision	☐	Responsibility not assigned to task	☐
Communication of requirements	☐	Coordination of task	☐	Workload management	☐
Other (specify)	☐				
Specifically describe how the checked factor contributed to the occurrence					

Organisational/culture factors (Tick all that apply)					
Identify if any organisational / organisation cultural factors were relevant o the incident.					
Provision of resources – people	☐	Provision of resources – other	☐	Corporate change or restructure	☐
Previous corrective / preventive actions or other audit findings	☐	Normal or accepted practice	☐	Complacency with work processes	☐
Other I&S policies or directives (specify)	☐	Conflicting policies or procedures	☐	Risk / hazards not properly identified	☐
Financial constraints	☐				

Specifically describe how the checked factor contributed to the occurrence

Appendix A8 Environmental Inspection Checklist

Environmental Inspection Checklist

Date of Inspection		**Time of Inspection**	
Inspection Conducted By	(Name and Position)	**Signature**	
Inspection Site/ Area			
Activities Taking Place during the Inspection			
Weather Forecast			
Overall Site Inspection Rating			

Priority Class	Timeframe for Action	Overall Site Inspection Rating
I - Immediate	To be completed straight away, same day as identification	**Poor** – Immediate actions are required to bring site up to acceptable standard
H - High	To be completed within 24hrs	**Satisfactory** – Site does not pose a threat to the environmental however improvements can be made.
M - Medium	To be completed within 3 working days	**Good** – Site controls all in place and working effectively. Personnel know and practice their responsibilities
L - Low	To be completed within 5 working days	**Excellent** – Site controls are maintained effectively with initiatives being used to excel in environmental performance.
GP – Good practice	N/A	Site is demonstrating over and above controls and/or best practice initiatives

No.	Item	✓	X	N/A	Comments and Actions	Priority Class (I/H/M/L)	Person Responsible	Close out
Site Access/ Egress								
1.	Stabilised driveway/cattle grids working effectively with no dirt and mud on roads?							
2.	Roads and gutters have been swept and kept free of dirt at the end of each day and prior to any rainfall event?							
Erosion and Sediment Controls								
3.	Are erosion and sediment controls on correct locations (as per relevant/ progressive ESCP) and are they working?							
4.	Have attempts been made to divert clean stormwater away from the site?							
5.	Sediment fences are maintained free of sediment deposits?							
6.	Are water treatment facilities being maintained correctly?							
Water Discharge								
7.	Is all standing water on site being tested, treated appropriately before being discharged or re-used? If dewatering - is dewatering permit in place, has it been approved by authorised personnel and is dewatering occurring in accordance with the permit?							
8.	Are on-site drains adequately protected? Are protection controls (geofabric / sediment bags etc.) in good condition?							

No.	Item	✓	X	N/A	Comments and Actions	Priority Class (I/H/M/L)	Person Responsible	Close out
9.	Any water observed to be going off-site? If so, where? Specify quality / condition of water							
Stockpiles								
10.	Are all stockpiles located in approved, designated locations and being maintained to ensure no sediment runoff i.e. sediment fences surrounding them?							
Concrete Wash Out								
11.	Is concrete being washed out in designated concrete washout areas and being maintained in good condition?							
Onsite Sewerage System								
12.	Are the tanks being pumped out regularly? Are all taps and fittings free from leaks?							
Hazardous Materials and Dangerous Goods								
13.	Are all hazardous materials or dangerous goods stored in bunded areas or hazardous goods containers? Are MSDS's available and current?							
14.	Is refuelling of mobile plant and equipment being undertaken in a safe manner (e.g. use of funnel, nozzle, spill kit)?							
15.	Are spill kits readily accessible on site and adequately stocked?							
16.	Are there any obvious signs of spills / leaks? If so, where?							

No.	Item	✓	X	N/A	Comments and Actions	Priority Class (I/H/M/L)	Person Responsible	Close out
17.	Does the site contain contaminated land/soil or hazardous waste (ASS/PASS, asbestos) and is it being managed appropriately i.e. according to CEMP or specific sub-plans?							
Air Quality Controls								
18.	Is there an odour on site?							
19.	Are odour mitigation measures working effectively (i.e. deodorising system)							
20.	Is visible dust being generated by site work activities, stockpiles, internal roads or exposed surfaces?							
21.	Are dust controls in place and being performed regularly enough to be effective?							
22.	Are trucks carrying loose material entering or leaving the site covered?							
23.	Is plant and machinery on site producing visible emissions?							
Noise and Vibration Controls								
24.	Is high noise generating activities being undertaken on site? If so are necessary controls in place in accordance with approval and CEMP documents?							
25.	Are plant and site vehicles equipped with non-tonal reversing beepers							
26.	Are all works being undertaken between approved hours?							

No.	Item	✓	X	N/A	Comments and Actions	Priority Class (I/H/M/L)	Person Responsible	Close out
27.	Are plant and site vehicles not in use switched off?							
Flora and Fauna								
28.	No damage has occurred to retained vegetation and health maintained.							
29.	Are noxious weeds within work areas and are they being managed? Herbicide Record Form completed for weed spraying?							
30.	Have construction activities affected fauna species (e.g. kills, injuries)?							
Heritage Items								
31.	Has damage occurred to any heritage items since the last inspection?							
32.	Have any new heritage items been identified since the last inspection?							
Other Items								
33.	All equipment, materials, stockpiles etc. stored in designated areas and contained within the site boundary?							
34.	Was there any asbestos or suspected asbestos containing material on site?							
35.	Is the site left secure at the end of each day?							

No.	Item	✓	X	N/A	Comments and Actions	Priority Class (I/H/M/L)	Person Responsible	Close out
Comments/ Description or Additional Items								

End of document

NSW GOVERNMENT

26 November 2020

Transport for NSW

Attention to: **Megan Haberley**
Senior Manager, Environment
Parramatta Light Rail
130 George St, Parramatta, NSW 2150

Review of Construction Environmental Management Plan.
Parramatta Light Rail – Stage 1 (Enabling Works) Revision 9
(PLR-DWJV-PJT-PE-PLN-000001)

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. Parramatta Light Rail – Stage 1, Enabling Works (Package 1) (PLR-DWJV-PJT-PE-PLN-000001), Revision 9, dated 28 October 2020, updated by Diona Ward Joint Venture, for continued consistency with the requirements of the Conditions of Approval.

In my opinion the aforementioned document, updated to include additional scope of Robin Thomas Reserve and editorial changes, remains consistent with the requirements included in or required under the terms of the Conditions of Approval for the Parramatta Light Rail (Stage 1) development.
.

Yours sincerely,

Australian Quality Assurance & Superintendence Pty Ltd (AQUAS)

Gillian Lehn
Environmental Representative
phone: +61 2 9956 9963 | fax: 02 9954 1951 | mobile: +61 419 253 787 |
email: gillian.lehn@aquas.com.au |

Filename : AQ1148.05 PLR DWJV CEMP rev9 endorsement 201126